

Situation Analysis – Hawkesbury Nepean Catchment Management Authority

Background Drawing from the initial Practice Change Project workshop and various publications, the following is a situation analysis of the Hawkesbury Nepean CMA. It includes the key NRM issues, organisational structure, the resource condition targets and management action targets that have been identified. The purpose of the situation analysis is to provide an overview of the Hawkesbury Nepean catchment for circulation among the ten regions involved in the project. This will enable the participating regions to better understand each others situations.

The Region

Geography The Hawkesbury-Nepean catchment covers over 22,000 square kilometres (2.2 million hectares). The catchment has many major rivers, including the Hawkesbury, Nepean, Wollondilly, Mulwaree, Tarlo, Wingecarribee, Nattai, Nepean, Coxs, Kowmung, Grose, Capertee, Colo and Macdonald. The catchment's natural landscapes are incredibly varied, from rainforests to open woodlands, heathlands to wetlands, and highland freshwater streams to the magnificent Hawkesbury River estuary. Although many of these landscapes have been altered due to development and agriculture, almost half of the catchment is protected in national parks and water catchment reserves.

Demographics As one of the most important and varied catchments in Australia, the Hawkesbury-Nepean;

- provides nearly all of the drinking water supplied to the 4 million people living in Sydney, the Illawarra and the Blue Mountains.
- supports a population of 800,000 people.
- generates over \$1 billion each year in agriculture and supplies much of Sydney's fresh food.
- hosts an extensive range of extractive, manufacturing and processing industries.
- includes the Greater Blue Mountains World Heritage Area of over 1 million hectares of national park and reserves protecting diverse Eucalypt forests and exceptional native flora and fauna.
- offers many unique and spectacular recreation and tourism opportunities.
- is expected to accommodate and support the growing population of greater Sydney.

Land uses

- Almost half of the catchment is protected in national parks and reserves including the Greater Blue Mountains World Heritage Area.
- Large areas of urban development in northwest and southwest Sydney.
- Rural industries including fresh vegetables, flowers and fruit; 50% of

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NSW egg production and 30% of the poultry meat; significant horse breeding and turf production industries.

- Peri-urban and rural residential development on the fringes of Sydney and around the larger regional towns of Lithgow, Moss Vale and Goulburn.

NRM issues

Some of the key challenges facing the Hawkesbury-Nepean catchment include;

- managing water quality and flow - sharing water with the environment and between people.
- conserving, rehabilitating and sustaining aquatic and terrestrial biodiversity.
- protecting the soil.
- achieving sustainable development.
- recognition and protection of cultural heritage.
- making the Hawkesbury-Nepean river system a place that people can safely swim in and enjoy.
- controlling pest animals and plants to support sustainable agriculture and natural bushland.
- community participation in catchment health.
- managing the impact of large transfers of natural resources into and out of the catchment.

The Regional NRM Organisation

History

The former Hawkesbury Nepean Catchment Management Board (predecessor to the current Hawkesbury Nepean Catchment Management Authority) endorsed the integrated natural resource management plans (the Blueprints) for what is now the Hawkesbury Nepean region, incorporating social, economic and environmental elements of natural resource management.

Organisational arrangements

Hawkesbury Nepean CMA Board

- John Klem (Chair)
- Angus Gibson (Deputy Chair)
- Mary Howard (Director)
- Bob Wilson (Director)
- Jenny Smith (Director)
- Ken Wheelwright (Director)
- Bernie Bugden (CMA General Manager)

Key functions

The Hawkesbury Nepean CMA has five broad functions:

1. **Planning and Investment** - to develop and implement a Catchment Action Plan and investment strategies
2. **Native Vegetation** - to administer and manage Property Vegetation Plans and the Native Vegetation Act
3. **Water** – to develop a River Health Strategy and implement



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- strategies to improve river health
4. **On ground works** - to facilitate and undertake on-ground natural resource works
 5. **Community engagement** - to help landholders to undertake works and provide training and technical advice
 6. **Provide advice to governments**

Budget (2006-07)

Total budget – \$16.041M
 Australian Government funds - \$12.027M
 State funds - \$3.072M
 Other funds - \$0.943M

The NRM Planning Process

History

The two Hawkesbury-Nepean Blueprints for the Warragamba and Hawkesbury Lower Nepean have provided a framework for this plan. The two Hawkesbury-Nepean Blueprints have been endorsed by government and were accompanied by detailed Accreditation Appendices that bring together much of the information used in developing the Blueprints.

The process of developing the CAP targets included systematic consideration of the state-wide targets and the Blueprints targets to identify any gaps. The CAP commences in 2006 and has a term of 10 years.

NRM plan

The draft CAP has been submitted to the NRC and they are currently sending a report back to the CMA and relevant agencies.

Resource condition targets

Asset	Resource Condition Targets (RCTs)
Community	C1: By 2016, there is an increase in the catchment community's capacity to contribute to managing the catchment's natural resources.
River Health	<p>RH 1- Riparian Lands - By 2016, an identifiable improvement in the health of riparian lands will be achieved as determined by:</p> <ul style="list-style-type: none"> • maintenance of the condition of all lands identified as being in good condition in the River Health Strategy (this includes most reaches within National Parks) • an increase in the extent and connectivity of native riparian vegetation in areas identified as a priority in the River Health Strategy • a decrease in key weed species (eg. canopy invading species/ new outbreaks) identified as a priority (for example in the River Health Strategy) <p>RH2 Aquatic Biodiversity - By 2016, improve sustainability of key native aquatic populations and the recovery of threatened aquatic species by:</p> <ul style="list-style-type: none"> • Protecting, enhancing and managing key identified aquatic habitat including: <ul style="list-style-type: none"> o significant aquatic habitat identified in Indigenous cultural

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	<ul style="list-style-type: none"> mapping <ul style="list-style-type: none"> o riparian vegetation, o wetlands, o woody debris, o reed beds o deep pools o riffles o salt tolerant wetlands o key aggregation, nursery and feeding sites, such as seagrass beds, inter-tidal areas, o rocky reefs and soft benthos habitat, and o other key habitat identified for threatened species • Improving the connectivity of aquatic habitat by management and/or removal of barriers to fish passage. <p>RH3 Wetlands - By 2016, the function of wetlands is understood, maintained and improved. Hawkesbury Nepean wetlands include:</p> <ul style="list-style-type: none"> • Peat-based swamps such as Long Swamp (on Paddy’s River) • Sandstone-based upland wetlands including montane and hanging swamps • Riverine floodplain wetlands • Estuarine wetlands <p>RH 4 Estuary/ Marine Condition - By 2016, there will be no decline, and where appropriate an improvement, in estuarine and marine ecosystem functioning as reflected in a range of indicators, potentially including:</p> <p>For estuarine:</p> <ul style="list-style-type: none"> • extent and condition of estuarine vegetation • freshwater inflows • algal blooms • water quality • soil condition <p>For marine:</p> <ul style="list-style-type: none"> • Rocky reef species • Sewage discharges • Industry groups implementing environmental management systems • Marine debris • Extent of Marine Protected Areas <p>RH5 Groundwater - By 2016, there is an improvement in the ability of groundwater systems to support groundwater dependent ecosystems and designated beneficial uses.</p>
Biodiversity	<p>B1 Native Vegetation Extent - By 2016, the extent of native terrestrial vegetation in all landscapes is maintained so that there is no net loss from the 2005 area of native vegetation coverage.</p> <p>B2 Native Vegetation Condition - By 2016, there is an improvement in native vegetation condition in:</p> <ul style="list-style-type: none"> • Mitchell Landscapes that are more than 70% cleared and/ or • priority fauna habitat and/or • areas that are part of the network of regional corridors as measured by

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	<p>the increase in area under conservation agreement or active management for conservation.</p> <p>B3 Native Vegetation Connectivity - By 2016, there is an increase in cover and an increase in security for native vegetation in the catchment biodiversity corridors and in priority habitats.</p> <p>B4 Threatened Species - By 2016, actions have been undertaken, according to their level of urgency, that assist in the conservation of threatened species by implementing:</p> <p>A. For terrestrial species -the actions identified in the Priority Action Statements under preparation by the Department of Environment and Conservation.</p> <p>B. For aquatic species - the actions in the Recovery Plans prepared under the Fisheries Management Act or the Environment Protection and Biodiversity Conservation Act (EPBC).</p> <p>By 2016, there is an increase in:</p> <ul style="list-style-type: none"> • The area of Endangered Ecological Communities that is protected under management agreements and/or • The area of suitable habitat for threatened species that is protected under management agreements. <p>B5 Invasive Species Management - By 2016 there is a reduction in the negative impact of invasive species on both biodiversity and sustainable production.</p> <p>B5 Conditions Favouring Invasive Species - By 2016, there is a reduction in the conditions which favour invasive species primarily through improvement in ecosystems as indicated by:</p> <p>For terrestrial ecosystems:</p> <ul style="list-style-type: none"> • An increase in native vegetation • Maintenance of groundcover • Reduction in erosion and land degradation • Use of Current Recommended Practices <p>For aquatic ecosystems</p> <ul style="list-style-type: none"> • An increase in native riparian vegetation • Diversity of in-stream habitat • A reduction in sediment loads • A reduction in nutrient loads • A reduction in stream bank degradation (erosion)
Soil and Land	<p>SL1 Soil Condition - By 2016, there is an improvement in soil condition as measured by:</p> <ul style="list-style-type: none"> • 15% reduction (30,000 ha) of severe erosion. • 5% reduction (200ha) of agricultural sites severely degraded by saline discharges <p>SL2 Rural Land Capability - By 2016, there is an increase in the area of non-urban land managed within its capability as measured by:</p> <ul style="list-style-type: none"> • 90% groundcover is maintained on land mapped as rural land capability classes VI • 90% tree cover is maintained on land mapped as rural land capability

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	<p>class VII</p> <ul style="list-style-type: none"> • 80% groundcover is maintained on land mapped as rural land capability classes IV & V and • Land of rural capability class VIII is vegetated. <p>This target will be further supported by: the management of 46% of the catchment as part of the reserve/ protected lands system.</p>
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Management action targets

Asset	Management Action Targets (MATs)
Community	<p>MAT C1-1 Social Connectivity - By 2016, people are encouraged and supported in understanding their rights and responsibilities in relation to their place in the catchment.</p> <p>This is reflected in:</p> <ul style="list-style-type: none"> • An understanding of the catchment boundaries and the place of the individual within the catchment • Spiritual connection and sense of belonging to this catchment • Understanding of the duty of care and how to apply this especially by land managers • Implementation of Current Recommended Practices (CRPs) • Development of locally relevant programs by local groups • Higher rates of individual action that support catchment health and the achievement of the targets • Increase in Indigenous land management and incorporation of Indigenous beliefs/ customs/ knowledge into management programs • Increasing participation in, and membership of, landcare <p>MAT C1-2 Incentives - By 2007, appropriate incentive programs are in place to support achievement of the targets, and By 2011, these incentive programs have been evaluated and reviewed to improve their ability to meet the targets, and appropriate partnerships are in place to support achievement of the targets.</p> <p>MAT C1-3 Education and Training - Appropriate education and training opportunities are fostered, brokered and developed to support achievement of the targets.</p> <p>MAT C1-4 Indigenous Land Management - By 2016, aspects of the landscape related to NRM that have Indigenous cultural significance will be identified in accordance with cultural protocols and as culturally significant sites, places landscapes and species significant to Aboriginal people are identified they will be protected, enhanced and rehabilitated.</p> <p>MAT C1-5 Data and Information Management - By 2008, a comprehensive reporting and evaluation framework has been developed and implemented which:</p> <ul style="list-style-type: none"> • supports reporting on, and evaluation of, the CAP and the achievement of the targets and outcomes from programs; <p>and which by 2010:</p> <ul style="list-style-type: none"> • collates, disseminates and provides information in appropriate formats; • is used to report to community and key stakeholders and considers the spatial boundaries that are most appropriate to each community/

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	<p>stakeholder group; and</p> <ul style="list-style-type: none"> • informs the review of targets and actions. <p>MAT C1-6 Communication - By 2009, the HNCMA has prepared a communication strategy which ensures effective communication with the catchment's diverse community to support achievement of the CAP targets. Communication will be:</p> <ul style="list-style-type: none"> • Two-way • Transparent • Inclusive • Targeted <p>MAT C1-7 Key fauna populations - By 2016, species and populations of fauna and flora that are locally important will be identified through sub-catchment action plans.</p>
River health	<p>MAT RH1-1 Riparian Conservation - By 2016, there is an increase of 108km of river and stream banks assessed as in 'near intact' and 'good' condition and identified as being high priority for management primarily for conservation.</p> <p>MAT RH 1-2 Sub-catchment Plans Targeting Riparian Weeds - By 2016, sub-catchment plans are developed and implemented for priority sub-catchments with actions for targeted management of priority weeds.</p> <p>MAT RH1-3 Riparian Vegetation Regeneration - By 2016, there is an increase of 225 km in the length of river and stream banks undergoing assisted regeneration in priority riparian areas for rehabilitation and connectivity, including estuarine areas.</p> <p>MAT RH 1-4 Riparian Vegetation Rehabilitation - By 2016, 600,000 plants established through revegetation on stream/river banks in reaches that are high priority for rehabilitation (including those of high priority for bank stabilisation) to reach targets.</p> <p>MAT RH1-5 Best practice for Public Recreation Areas - By 2016, 10 existing public passive recreation river access areas (one per year)(currently high pressure/low management) are managed under an endorsed management plan using current recommended / best practice riparian lands management principles with associated strategies for implementation.</p> <p>MAT RH2-1 Restoration of in-stream habitat - By 2016, there is an increase in the length of in-stream habitat that is improved by appropriate instream works such as re-instatement of large woody debris and removal of barriers to fish passage in priority reaches.</p> <p>MAT RH 3-1 Wetlands of National Significance - By 2016, action plans are developed and are being progressively implemented for wetlands of National Significance outside of National Parks</p> <ul style="list-style-type: none"> • Lake Bathurst • Long Swamp on Paddy's River • Blue Mountains swamps • Pitt Town Lagoon

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	<ul style="list-style-type: none"> • Wingecarribee Swamp • Scheyville Lagoon <p>MAT RH 3-2 Protection of Important Wetlands - By 2016, there is an increase in the area of important wetlands protected or appropriately managed through arrangements that prevent damaging access and/or disturbance.</p> <p>MAT RH 3-3 Recovery of Important Wetlands - By 2016, there is an increase in the area of important wetlands with a recovery potential that are enhanced / rehabilitated.</p> <p>MAT RH 4-1 Estuary and Coastal Management Plans - Implement or assist with implementation of relevant, high priority actions that are identified in Estuary Management Plans or other management plans that have been cooperatively developed through a formalised process with all stakeholders, including community, councils and agencies.</p> <p>MAT RH 4-2 Seagrass Beds - No loss of seagrass (<i>Posidonia</i> sp.) beds as identified in 2000 mapping through protection, education of value, investigation and where appropriate establishment of protected areas.</p>
Biodiversity	<p>MAT B1-1 Conservation Management - By 2016, 900 voluntary management agreements will have been signed off to conserve native vegetation.</p> <p>MAT B1-2 Revegetation to replace clearing - By 2016, native vegetation has been established through revegetation to replace land cleared in each landscape. Current estimates indicate this would require up to 4,600 Ha of native vegetation.</p> <p>MAT B2-1 Incentives - By 2016, incentives have been delivered to landholders to improve vegetation condition of remnants in priority areas by vegetation /regeneration of buffers and weed management.</p> <p>MAT B2-2 Remnant Buffers - By 2016, the condition of native vegetation has been improved by active/passive regeneration of buffers of at least 20m around high priority, existing remnants resulting in an increase of 360 Ha under active/passive regeneration.</p> <p>MAT B2-3 Fencing - By 2016, additional fencing protects an increased area of priority vegetation or supports passive regeneration of buffers around priority remnants.</p> <p>MAT B2-4 Indigenous Information - By 2016, information relating to Indigenous cultural heritage values relevant to natural heritage values is incorporated into HNCMA (and stakeholder) projects and implementation of priority recommendations in HNCMA projects to better reflect the importance of the relationship between Indigenous peoples and the landscape of the Hawkesbury Nepean.</p> <p>MAT B2-5 Local Provenance - By 2016, locally provenanced plant and seed stock is available to support projects throughout the catchment.</p> <p>MAT B3-1 Connectivity Strategy - By 2007, the HNCMA has developed a</p>

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	<p>catchment connectivity strategy and supported maintenance of catchment biodiversity corridors through its funding programs.</p> <p>MAT B4-1 Threatening Processes Management - By 2016, activities classified as 'threatening processes' are identified and included in all management plans and agreements with HNCMA.</p> <p>MAT B4-2 Threatened Species Action - By 2016, the conservation of threatened species, endangered populations and endangered ecological communities (EECs) outside of National Parks and reserved lands is supported through implementation of actions in Priority Action Statements (PAS) and Recovery Plans.</p> <p>MAT B 5-1 Weed Strategy Development and Implementation – By 2016:</p> <ul style="list-style-type: none"> • 1st phase (Priority A and B) weed plans completed and reported on. • 2nd phase of priority weed plans being implemented for weeds designated as Priority Category C or D • Weed strategy reviewed and update as required <p>MAT B5-2 Weed Control By 2016, there has been a reduction by 5% coverage of target weeds identified in B5-1 through primary weed control measures supported by a minimum additional investment of \$10 million spent on targeted weeds to achieve biodiversity conservation actions following PAS guidelines.</p> <p>MAT B5-3 Maintenance of Weed Control - By 2016, 50% of areas treated for invasive plant control have reported sustained success.</p> <p>MAT B 5-4 Threatening Process - By 2016, populations of invasive species identified as key threatening processes under state threatened species legislation (in 2005 feral pigs, deer, rabbits, goats, honeybees, cats and foxes), are included in Threat Abatement Plans (TAPs), and managed according to the priorities in those Plans.</p> <p>MAT B 6-1 Action to Reduce Conditions that Favour Invasive Species - By 2016, management actions to reduce the conditions that favour invasive plant species (as identified in B5-1) have been implemented through relevant river health and biodiversity MATs</p>
Soil and Land	<p>MAT SL 1-1 Rural land capability - By 2016, an additional 20,000 Ha of targeted areas of agricultural land throughout the catchment is managed according to its rural land capability. (Note: this target refers to an additional area of land managed within its capability over and above that managed within its capability in 2005).</p> <p>MAT SL 1-2 Soil erosion - By 2016, 20,000 Ha of the catchment will be protected from soil erosion as a result of repairing the catchment by soil conservation works such as fencing, gully control structures, revegetation and other treatments.</p> <p>MAT SL 1-3 Dryland salinity - By 2016, 200 Ha of saline discharge sites have been treated and/or fenced.</p>

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	<p>MAT SL 1-4 Perennial pastures - By 2016, additional perennial pastures are sown and managed to reduce dryland salinity by planting recharge zones.</p> <p>MAT SL 1-5 Acid soils - By 2016, there is a reduction in the rate of induced soil acidification in non-acidic soils due to agricultural practices.</p> <p>MAT SL 1-6 Acid sulphate soils - By 2016, there is no increase in area affected by acid sulphate soils.</p> <p>MAT SL2-1 Large /Commercial Farm Management - By 2016, there is an increase in the number of properties being managed through a whole farm management system. There are large area/commercial landholders (managing x ha) attending and/or completing courses that contribute to holistic management and involve a substantial commitment eg. over 20 hours of course time.</p> <p>MAT SL2-2 Small/Non-Commercially Farm Management - By 2016, there is an increase in the number of rural residential and smaller area landholders attending appropriate and targeted small area management training.</p>
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Philosophy and thinking

The HNCMA approach to NRM is:

- Based on the board's commitment to implement best practice.
- A positive legacy of previous structures – the CMC's and the Trust.
- Collaborative, with formalised partnerships with agencies, local government and others (eg MoUs).
- Focussed on what the CMA as an organisation can influence and achieve, given external constraints.

People, energy and skills

The HNCMA has a strong commitment to implementing best practice in all that they do. They are working on a number of fronts to look at the effectiveness of their investment, and have a commitment to developing best practice business systems.

HNCMA staff have considerable skills and experience, and this is relied on when making decisions. This experience is partly due to the history and lessons learned of the HNCMA's predecessor organisations.

Board members present at the workshop were very aware of their roles and responsibilities as "directors", and had made commitments to best practice corporate governance.

Expectations of involvement in project

Expectations

- Learn from the experiences of other Regional NRM organisations.
- Opportunity to assist HNCMA application of the NSW Standard for Natural Resource Management.
- Opportunity to continue to improve business system and approach to investment.

