

## 1 Snapshot of the Northern Rivers CMA region

### What do we value in this CMA region?

- **Tourism and recreation** – nature-based tourism and recreation generates some \$2 billion per annum and the region is a popular 'sea/tree change' lifestyle destination.
- **Primary industries** – around \$1 billion generated annually, with over \$100 million from fisheries within the region's estuaries. Over 70% of coastal and estuary management plans completed. Compared to other NRM regions, there are a large number of individual landholders in the region (over 7,000).
- **Biodiversity** – the southern part of the Border Ranges is a national biodiversity hotspot, and a large proportion of the catchment is reserved in national parks. The region also hosts three of the six marine parks in NSW and two World Heritage Areas.

### What are the key NRM challenges in the CMA region?

- Increasing collaboration between NRM stakeholders and integrated delivery of NRM priorities.
- Aligning and focusing NRM priorities across institutions and development of potential climate change impact strategies.
- Responding to pressures on agricultural land, employment and natural assets due to increasing population growth (likely to increase by 26% over the next 25 years) through land-use planning.

### What is the condition of key elements in the landscape?

- Overall native vegetation extent and condition health is good, with over 60% of the region having intact vegetation.
- Overall hydrological condition of the region's rivers is moderate (and coastal and lowland river systems such as Tweed and Richmond Rivers are rated as good), electrical conductivity is falling, water temperature is stable at most monitoring sites. Recent intermittent flooding has damaged infrastructure, and has accelerated river bed and bank instability.
- Overall soil health is good; however, erosion has accelerated due to recent heavy rainfall.
- Marine environments have remained stable over the last decade and the overall condition of the region's estuaries and coastal lakes is good to very good. However, over 60% are under moderate to high pressure (primarily due to coastal urban development), which is higher than other areas of coastal NSW.
- NRM decisions are improving the social and economic wellbeing of the region's communities with increasing trends across all indicators (e.g. business profitability, community networks, employment).

### What significant work has the CMA done?

- Significant works include developing regional state of the environment reporting with local councils; supporting local councils with a suite of land-use planning tools and guides; engaging over **160** commercial fishing operators in best practice; installing over **300** watering points for livestock; mapping over **13,000 ha** of marine habitat; sustainably managing over **10,000 ha** of terrestrial and aquatic ecosystems; actively managing nearly **3,000 ha** of acid sulfate soils; and controlling nearly **800 ha** of coastal weeds.

### How much is invested in NRM in the region?

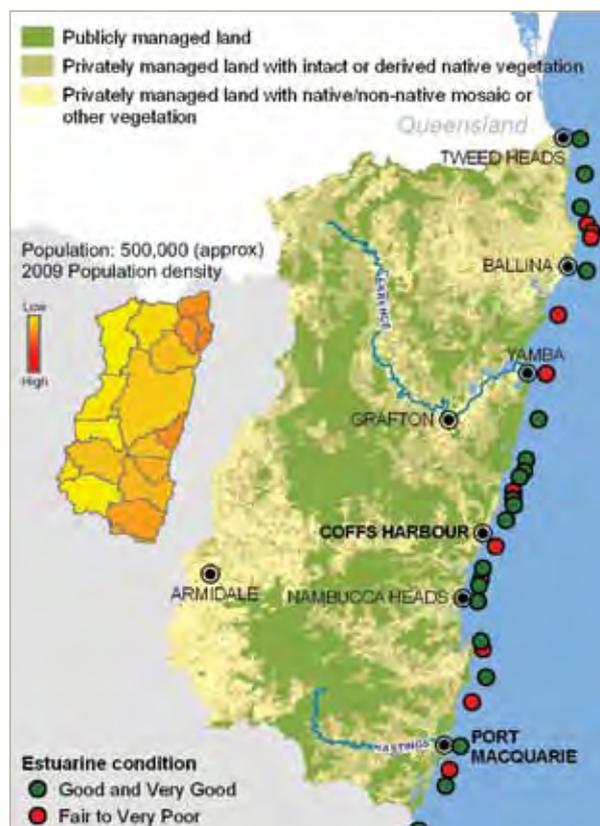
- Overall, over **\$88.9 million** is invested through the CMA (2004–10).
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$8 million** invested under the Commonwealth's Caring for our Country program (2008–10); over **\$13.8 million** invested under the NSW Government's Urban and Coastal Water Strategy grant program (2005–10).

### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a medium overall level of effectiveness in implementing the region's catchment action plan, performing well across most areas of enquiry.

### What are some of the key NRM and planning strategies in the region at the moment?

- Far North Coast Regional Strategy (NSW Government)
- Mid North Coast Regional Strategy (NSW Government)
- Northern Rivers Catchment Action Plan (NSW Government)
- 11 Water Sharing Plans (NSW Government)
- Northern Rivers Regional Biodiversity Management Plans (Australian Government and NSW Government)
- Draft Regional Conservation Plan (NSW Government)
- NSW Biodiversity Strategy (NSW Government)
- Community Strategic Plans (NSW Local Government)



## 2 Snapshot of the Hunter–Central Rivers CMA region

### What do we value in this CMA region?

- **Tourism and recreation** – the region is a popular destination for nature-based tourism and recreation and is a popular ‘sea/tree change’ lifestyle destination.
- **Coasts** – 85% of the region's population is on the coastal fringe and approximately \$100 million per annum is generated from fisheries in the region's estuaries.
- **Agriculture and resources** – the region generates over 40% of the state's electricity and hosts one of the largest and most significant ports (Newcastle) on the east coast. The region also supports substantial coal mining, forestry, fishing, viticulture, horse breeding and a wide range of other industries
- **Biodiversity** – around 17% of the region's vegetation is conserved in reserves including the World Heritage Areas of the Barrington Tops and the northern edge of the Greater Blue Mountains National Parks. The region also hosts the Myall and Hunter Estuary Ramsar wetland sites and the Port Stephens–Great Lakes Marine Park.

### What are the key NRM challenges in the CMA region?

- Aligning and focusing NRM priorities across institutions responsible for land-use planning to address pressures from major urban, industrial, mining and infrastructure development, population growth and predicted impacts from climate change.
- Cumulative loss of biodiversity due to pressures described above, but particularly through development approvals outside the Native Vegetation Act 2003 (which requires any approval to maintain or improve environmental outcomes).

### What is the condition of key elements in the landscape?

- Overall native vegetation health is good, with 50% of the region having intact vegetation that has not been substantially altered or has since recovered.
- Overall hydrological condition of rivers is good, overall fish assemblage condition is very poor, there are increasing trends in turbidity in some catchments and mostly stable or improving trends in electrical conductivity.
- Overall condition of estuaries and coastal lakes is good, with over 60% under moderate to high pressure.
- The integrity of the region's sandstone aquifers is poor to very poor (and declining), likely due to the influence of land uses such as mining.

### What significant work has the CMA done?

- Significant works include engaging over **11,500** landholders and managers in NRM (including on-ground works and community monitoring programs); protecting over **18,000 ha** of native vegetation; rehabilitating over **700 km** of riparian vegetation; rehabilitating and reinstating over **2,000 ha** of wetlands and estuarine processes, including Hexham and Kooragang wetlands; and implementing over **10,500 ha** of sustainable grazing practices.

### How much is invested in NRM in the region?

- Overall, over **\$99 million** is invested through the CMA (2004–10)
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$120 million** invested under the joint Commonwealth–LGA-funded WaterSmart Mardi Mangrove Link project (2010–11); over **\$22 million** invested under the NSW Government's Urban and Coastal Water Strategy grant program (2005–10).

### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a high level of effectiveness in implementing the region's catchment action plan.

### What are some of the key NRM and planning strategies in the region at the moment?

- Hunter–Central Rivers Catchment Action Plan (NSW Government)
- Central Coast Regional Strategy (NSW Government)
- Lower Hunter Regional Strategy (NSW Government)
- Mid North Coast Regional Strategy (NSW Government)
- 9 Water Sharing Plans – gazetted (NSW Government)
- Strategic Assessment – Coal Mining Potential in the Upper Hunter Valley (NSW Government)
- NSW Biodiversity Strategy (NSW Government)
- Lower Hunter Regional Conservation Plan (NSW Government)
- Community Strategic Plans (NSW Local Government)



### 3 Snapshot of the Hawkesbury–Nepean CMA region

#### What do we value in this CMA region?

- **Water** – the region supplies drinking water for the greater Sydney metropolitan area. The estuary environment of the Hawkesbury River has high social and economic values and is the state's second largest estuarine trawl industry for prawns and squid.
- **Industry** – the region supplies 23% of the state's power and includes major employment areas in Western Sydney such as Norwest and the Western Sydney Employment Hub. The catchment has 19 coal mines and produces 80% of Sydney's sand and gravel for construction.
- **Agriculture** – the region generates around \$1 billion per annum (12% of the state's agriculture production) including market gardens, turf, poultry and grazing.
- **Biodiversity** – the Greater Blue Mountains World Heritage Area is almost wholly contained within the catchment. Almost half of the catchment is reserved as national park, supporting a number of endangered ecological communities.

#### What are the key NRM challenges in the CMA region?

- Managing pressure from Sydney's growing population and urbanisation, which are impacting rural and natural areas.
- Weed 'hotspots' – the region is a source of many of the original weed plantings such as Privet (*Ligustrum spp.*) and African olive (*Olea europaea*).
- Diversion of surface water for drinking, management of aquatic weeds, the discharge of treated sewage effluent into rivers and creeks, extraction of sand and gravel, increasing extraction of groundwater and interference with aquifers and rivers by underground coal mining.

#### What is the condition of key elements in the landscape?

- Overall condition and extent of native vegetation is high, with large areas of reserved lands resulting in intact native vegetation covering 70% of the region. However, it is very poor in areas subject to urban development, with only 13% vegetation intact in Western Sydney (Cumberland Plain).
- Overall macroinvertebrate condition in rivers is moderate and overall fish assemblage condition is poor, deteriorating away from the coast. Rivers and creeks in protected areas are generally in fair to good condition. Rivers and creeks in the urban areas are highly modified and have poor water quality and habitat provision.
- Land is generally managed within its capability. Trends are stable across most hazard indicators except for organic carbon decline and salinity.

#### What significant work has the CMA done?

- Significant works include developing and implementing the Hawkesbury Nepean River Health Strategy; engaging over **1,300 landholders** in on-ground NRM works; protecting over **12,000 ha** of native vegetation; restoring nearly **900 km** of riverbank; and improving nearly **15,000 ha** of degraded land.

#### How much is invested in NRM in the region?

- Overall, over **\$72 million** is invested through the CMA (2004–10).
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$77 million** invested under the Commonwealth's WaterSmart Hawkesbury–Nepean River Recovery project (2009–ongoing); over **\$5.8 million** invested under the NSW Government's Urban and Coastal Water Strategy grant program (2005–10).

#### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a high level of effectiveness in implementing the region's catchment action plan, showing particularly strong performance in delivering projects and community engagement.

#### What are some of the key NRM and planning strategies in the region at the moment?

- Hawkesbury–Nepean Catchment Action Plan (NSW Government)
- Hawkesbury–Nepean River Health Strategy (NSW Government and Hawkesbury–Nepean CMA)
- Metropolitan Water Plan (NSW Government)
- Sydney Catchment Authority Healthy Catchments Strategy (NSW Government)
- Sydney Metropolitan Strategy (NSW Government)
- Sydney Canberra Corridor Strategy (NSW Government)
- Water Sharing Plans – exhibition (NSW Government)
- Biodiversity Strategy (NSW Government)
- Community Strategic Plans (NSW Local Government)



## 4 Snapshot of the Sydney Metropolitan CMA region

### What do we value in this CMA region?

- **To live, work and visit** – the region is highly valued for housing, employment, amenity, recreation and tourism.
- **Waterways and beaches** – Sydney's image and economy are highly dependent on its amenity and the health of its major waterways and coastline.
- **Urban biodiversity** – Sydney provides unique access to bushland within a highly urbanised environment.

### What are the key NRM challenges in the CMA region?

- Intensive and growing urban, industrial, transport and recreational land-use pressures, high national and international exposure, multi-institutional strategic interests, and the ecological footprint of the region's population and visitors.

### What is the condition of key elements in the landscape?

- Marine indicators such as bacterial counts (conducted by Beachwatch), algal blooms and eastern rock lobster are rated as good, but abalone numbers are very low although now stabilised (a rocky reef health indicator).
- Overall condition of the region's estuaries and coastal lakes is fair; however, individual indicators such as salt marsh, fish and *chlorophyll-a* are rated as good.
- The Parramatta and Cooks Rivers are in poor condition, while the Georges, Woronora and Hacking Rivers are in moderate to good condition.
- There are low levels of consideration of NRM across state and local government agencies in planning and works. Within the community, shared understanding of NRM issues and networks of NRM champions across community and public sector organisations are inconsistent (indicators of human and social capital).

### What significant work has the CMA done?

- Significant works include engaging closely with councils to deliver **on-ground works**; promoting and improving **urban water-sensitive design**; improving water quality in **Botany Bay**; implementing the **Kurnell Program**; rehabilitating native vegetation through **Sydney Community Bushcare**; and improving the health of the **Cooks River**.

### How much is invested in NRM in the region?

- Overall, over **\$34 million** is invested through the CMA (2004–10).
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$9 million** invested under the Commonwealth's Caring for our Country program (2008–10); over **\$25 million** invested under the NSW Government's Urban and Coastal Water Strategy grant program (2005–10).

### What did the NRC audit tell us about the performance of the CMA?

- Overall, the CMA is performing fairly effectively, and its performance is consistent with the overall trend of better performance in delivering projects and engaging the community.

### What are some of the key NRM and planning strategies in the region at the moment?

- Sydney Metropolitan Strategy (NSW Government)
- Sydney Metro Catchment Action Plan (NSW Government)
- Metropolitan Water Plan (NSW Government)
- Community Strategic Plans (NSW Local Government)



## 5 Snapshot of the Southern Rivers CMA region

### What do we value in this CMA region?

- **Tourism and recreation** – increasingly popular destination for nature-based tourism and recreation, and ‘sea/tree change’ lifestyles.
- **Agriculture** – supports a high-value dairy industry worth \$1 billion annually and one of the nation’s most important beef and sheep (wool) breeding stocks is based on the Monaro grasslands. The region also supports an extensive, high-value oyster industry.
- **Estuaries, marine areas and aquaculture** – significant areas of the region’s estuaries and marine environments are protected in marine parks including Jervis Bay Marine Park and Bateman’s Bay Marine Park, and around \$38 million per annum is generated from the region’s estuaries, particularly through oyster farming.
- **Biodiversity** – large proportion of the catchment is publicly managed as national parks or state forest, which support the tourism and timber industries.

### What are the key NRM challenges in the CMA region?

- Co-ordinating whole-of-government responses and employment opportunities in NRM for Aboriginal communities.
- Integrate land-use planning to address pressures of housing, population growth and plantation development on agricultural land and natural assets, and expected impacts from climate change (especially in coastal areas).
- Impacts of weeds on agricultural and natural assets.

### What is the condition of key elements in the landscape?

- Overall native vegetation extent and condition is good, with 70% of the region having intact vegetation.
- Overall hydrological condition of rivers is good (except for the Snowy River), overall macroinvertebrate condition is moderate and overall fish assemblage condition is poor away from the coast.
- Overall condition of estuaries and coastal lakes is good, with nearly half under moderate to high pressure, mostly in the developed and populated northern parts of the region.
- Land managed within its capability is rated as poor to fair (with large variations across all measures) with improving or stable trends across most hazard indicators except for organic carbon decline and structure, which are declining.

### What significant work has the CMA done?

- Significant works include engaging community and Landcare in **native vegetation conservation**; rehabilitating the **Snowy River**; implementing the **Bega Cheese** and **South Coast Dairy** programs; implementing programs and on-ground works to sustainably manage the **Monaro grasslands** and the **Shoalhaven, Clyde and Tuross Rivers**; and engaging and working with the region’s **oyster industry**.

### How much is invested in NRM in the region?

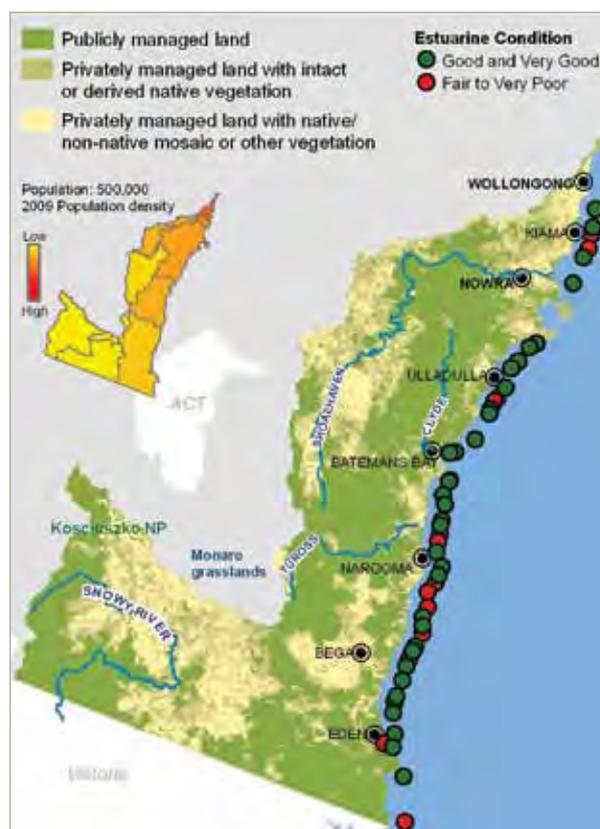
- Overall, over **\$78.8 million** invested through the CMA (2004–10).
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$92 million** invested under the joint Commonwealth–State–LGA-funded WaterSmart projects (2005–10); over **\$9 million** invested under the NSW Government’s Urban and Coastal Water Strategy grant program (2005–10).

### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a very high level of effectiveness in implementing the region’s catchment action plan, with a particular strength in community engagement.

### What are some of the key NRM and planning strategies in the region at the moment?

- Illawarra Regional Strategy (NSW Government)
- South Coast Regional Strategy (NSW Government)
- Southern Rivers Catchment Action Plan (NSW Government)
- 2 Water Sharing Plans (NSW Government)
- Draft Regional Conservation Plan (NSW Government)
- NSW Biodiversity Strategy (NSW Government)
- Community Strategic Plans (NSW Local Government)
- Draft Illawarra Biodiversity Strategy (Wollongong, Kiama and Shellharbour Councils)



## 6 Snapshot of the Border Rivers–Gwydir CMA region

### What do we value in this CMA region?

- **Agriculture and soils** – these dominate land use in the region with grazing and cropping. The value of irrigated agricultural commodities is high.
- **Water** – Communities are dependent on the region’s water resources. The catchments support internationally significant wetlands.
- **Biodiversity** – the region supports critically endangered species such as the Regent Honeyeater and has a high diversity of ecosystems. The southern part of the Brigalow Belt (IBRA) is a national biodiversity hotspot, and the under-represented IBRA regions are very high priority to include in the National Reserve System.

### What are the key NRM challenges in the CMA region?

- Likely socio-economic impacts in the roll out of the Murray Darling Basin Plan, decline in population and regional services, on-farm employment opportunities, landholder viability and climate change adaptation.
- Legacies of historical land clearing, wetland management, riverine stability, declining soil structure and carbon and soil erosion.

### What is the condition of key elements in the landscape?

- Overall soils are in good condition and largely stable with issues around sheet erosion and soil structure.
- Land managed within its capability is rated as fair, with stable trends across all indicators except for wind erosion and acidification, which are improving.
- Overall hydrological condition of rivers is good, overall macroinvertebrate and fish assemblage condition is poor to moderate, and a high to very high percentage of samples exceed total phosphorous guidelines at most monitoring sites, although turbidity is not exceeding guideline levels at some monitoring sites.
- Groundwater management areas (GWMAs) are generally in good to very good condition; however, there is very poor ranking for the impacts of localised and regional groundwater use in the Lower Gwydir and Border Rivers GWMAs, causing large variations in groundwater levels.
- Overall native vegetation extent and condition is fair, with intact native vegetation covering 30% of the region (below state average).

### What significant work has the CMA done?

- Significant works include engaging **1,700 landholders** and other stakeholders in NRM; protecting over **15,000 ha** of remnant native vegetation; improving over **700 km** of river ecosystems; improving water use irrigation water efficiency covering more than **22,000 ha** of land; managing invasive species across **350,000 ha** of land; combining farm forestry (nearly **1.5 million trees**) and biodiversity conservation on private land; and rehabilitating Aboriginal burial grounds.

### How much is invested in NRM in the region?

- Overall, over **\$66.6 million** invested through the CMA (2004–10).
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$5 million** invested under the Commonwealth’s Caring for our Country program (2008–10); over **\$33 million** invested under the joint Commonwealth–NSW Government Rivers Environmental Restoration Program (2006–10).

### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a fair level of effectiveness in implementing the region’s catchment action plan.

### What are some of the key NRM and planning strategies in the region at the moment?

- Guide to the Murray Darling Basin Plan (Australian Government)
- Border Rivers–Gwydir Catchment Action Plan (NSW Government)
- 7 Water Sharing Plans – gazetted (NSW Government)
- NSW Biodiversity Strategy (NSW Government)
- Community Strategic Plans (NSW Local Government)



## 7 Snapshot of the Namoi CMA region

### What do we value in this CMA region?

- **Agriculture and soils** – agricultural land uses dominate and the value of agricultural production in the region is high. Namoi is valued for its rich alluvial floodplain soils.
- **Groundwater** – irrigated agriculture depends heavily on groundwater, which is a defining characteristic of the region.
- **Mineral resources** – mining activity is increasing, particularly for coal.
- **Biodiversity** – the region's under-represented IBRA regions are high priority for the National Reserve System. Pilliga Forest National Parks and reserves are large stands of native vegetation in relatively good condition.

### What are the key NRM challenges in the CMA region?

- Decline in government funding, managing tensions and trade-offs between environmental, economic and social values, for example likely socio-economic impacts in the roll out of the Murray Darling Basin Plan.
- Mining development, population change, technology change and fluctuations in commodity prices.
- Information and data to improve understanding of the social-ecological systems, infrastructure changes (e.g. dam upgrades).
- Predicted climate change, particularly in western areas of the region.

### What is the condition of key elements in the landscape?

- Overall soils are rated in good condition and largely stable (improving in some areas).
- Land managed within its capability is rated as fair, with stable trends across all indicators except for wind erosion and acidification, which are improving, and organic carbon and soil structure, which are declining.
- Groundwater management areas (GWMAs) are generally overall in good to very good condition; however, there is a very poor ranking for the impacts of localised and regional groundwater use in the Upper Namoi Zones and Lower Namoi GWMAs, causing large variations in groundwater levels; land-use change is causing the most pressure on the Upper Namoi Zones, Lower Namoi and Peel Valley Alluvium GWMAs.
- Overall hydrological condition of rivers is good, overall macroinvertebrate and fish assemblage condition is poor to moderate, and a high to very high percentage of water quality samples exceed total phosphorous guidelines across the whole region. Water assets are generally trending down.

### What significant work has the CMA done?

- Significant works include community-wide **scenario planning**; benchmarking and monitoring **community attitudes and awareness**; **mapping** and benchmarking all natural resource assets catchment-wide; engaging specific community groups in **landscape planning**; sustainably managing over **90,000 ha** of perennial pasture; improving and conserving over **600 ha** of river riparian zones; rehabilitating over **2,500 ha** of saline land; controlling pest animals over **10,500 ha** of land; and conserving biodiversity over nearly **30,000 ha** of land.

### How much is invested in NRM in the region?

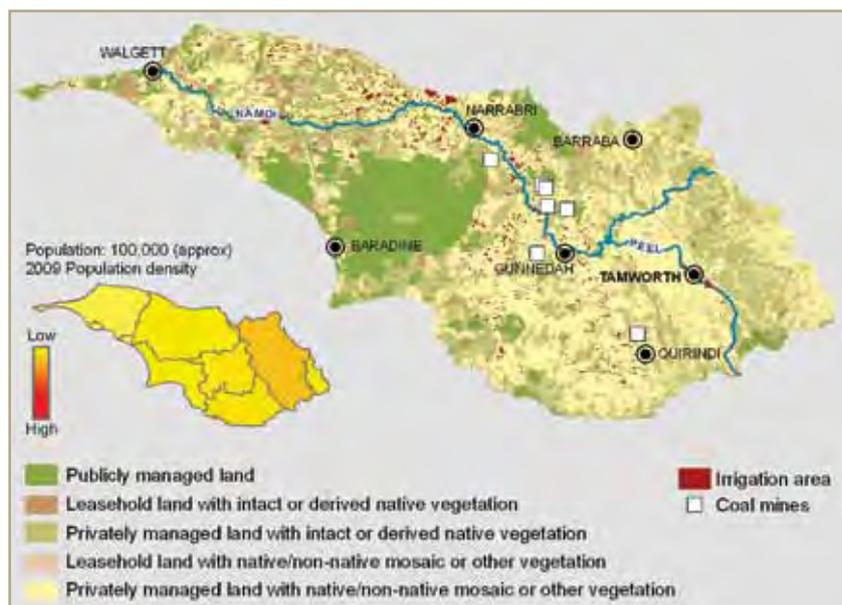
- Overall, over **\$66.5 million** is invested through the CMA (2004–10).
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$2 million** invested under the Commonwealth's Caring for our Country program (2008–10) and Strengthening Basin Communities program (2009–10); over **\$1 million** invested under the NSW Government's Urban and Coastal Water Strategy grant program (2005–10).

### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a very high level of effectiveness in implementing the region's catchment action plan, and notably showed the highest level of performance in adaptive management.

### What are some of the key NRM and planning strategies in the region at the moment?

- Guide to the Murray Darling Basin Plan (Australian Government)
- Namoi Catchment Action Plan (NSW Government)
- 5 Water Sharing Plans – gazetted (NSW Government)
- Biodiversity Strategy (NSW Government)
- Community Strategic Plans (NSW Local Government)



## 8 Snapshot of the Central West CMA region

### What do we value in this CMA region?

- **Agriculture** – agricultural land uses dominate the region, generating over \$1 billion annually from cropping and grazing. Relative to other regions, the use of water on farms in the region is moderate.
- **Water** – the region contains the Ramsar-listed Macquarie Marshes – one of the largest semi-permanent wetlands in south-eastern Australia and an important bird breeding site.
- **Biodiversity** – the region is heavily cleared, so the under-represented IBRA regions are a high priority to include in the National Reserve System.

### What are the key NRM challenges in the CMA region?

- Mobilising the region’s communities to respond to NRM issues, creating opportunities for collaboration between NRM stakeholders for integrated delivery of NRM priorities across the catchment.
- Addressing the decline in ecosystem services through partnerships with land managers.
- Developing innovative solutions with land managers to address both terrestrial and aquatic ecosystem decline and production outcomes.

### What is the condition of key elements in the landscape?

- Overall the region’s soils are rated in good condition with largely stable trends, with key issues around sheet erosion, soil structure and salinity.
- Land managed within its capability is rated as fair with increasing trends across all indicators except for sheet erosion, which is stable, and acidification, which is declining.
- Overall hydrological condition of rivers is moderate to good (with Macquarie and Castlereagh Valleys in good condition), overall macroinvertebrate condition is poor to moderate, overall fish assemblage condition is very poor, a high to very high percentage of samples exceed total phosphorous guidelines at nearly all monitoring sites, but the percentage of samples exceeding turbidity guidelines was very low to low at most monitoring sites.
- The Macquarie Marshes are rated overall as in poor health but showing good measures against water quality condition indicators (such as nitrogen and phosphorus loads, turbidity and salinity).
- Overall native vegetation extent and condition is fair, with intact native vegetation covering around 30% of the region (below the state average).

### What significant work has the CMA done?

- Significant works include engaging over **25,000 community members** in NRM; building a strong **evidence base** to support catchment-wide **decision making**; **collaborating with 22 local councils** to develop regional state of the environment reports and catchment-wide water-sensitive urban design policy; integrating traditional **indigenous cultural knowledge** into NRM practice; supporting **indigenous training and employment** through traineeships and university cadetships; rehabilitating over **103,000 ha** of native vegetation; improving over **405,000 ha** of groundcover and soil health; reducing biodiversity impacts of pest animals and plants over **400,000 ha** of land; and rehabilitating over **11,500 ha** of riparian and wetland ecosystems.

### How much is invested in NRM in the region?

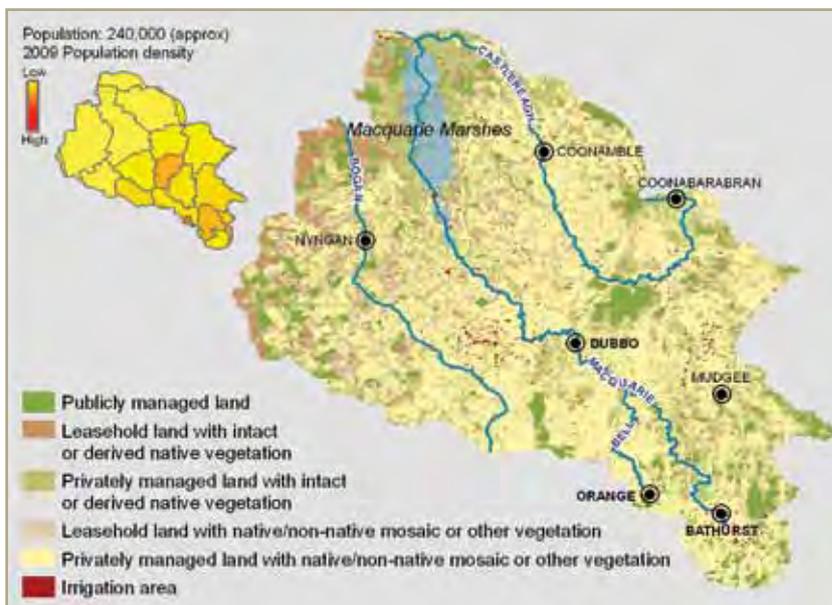
- Overall, over **\$90 million** invested through the CMA (2004–10).
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$13 million** invested under the Commonwealth’s Caring for our Country program (2008–10) and **\$1.2 million** under its Strengthening Basin Communities program (2009–10); over **\$56 million** under joint Commonwealth–NSW Government Rivers Environmental Restoration Program (2006–10).

### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a high level of effectiveness in implementing the region’s catchment action plan, showing consistently good performance across all areas of enquiry.

### What are some of the key NRM and planning strategies in the region at the moment?

- Guide to the Murray Darling Basin Plan (Australian Government)
- Central West Catchment Action Plan (NSW Government)
- 4 Water Sharing Plans – gazetted (NSW Government)
- NSW Biodiversity Strategy (NSW Government)
- Community Strategic Plans (NSW Local Government)



## 9 Snapshot of the Lachlan CMA region

### What do we value in this CMA region?

- **Agriculture** – irrigated and dryland cropping, beef and sheep livestock and horticultural enterprises dominate the region accounting for 22% of the region's workforces and 14% of the state's agricultural production.
- **Water** – the region contains the Lachlan River, the only terminal river system in the Murray Darling Basin. 30% of surface water in the valley is held for environmental use and contains nine nationally listed wetlands of importance including the Great Cumbung Swamp covering 16,000 ha.
- **Biodiversity** – The region is heavily cleared; the majority of the catchment is under reserved and is a high priority for inclusion in the National Reserve System.

### What are the key NRM challenges in the CMA region?

- Likely socio-economic impacts in the roll out of the Murray Darling Basin Plan.
- Managing red fragile soils (covering 45% of the region, supporting cropping and mixed farming enterprises), soil organic matter and soil carbon.
- Historical broad-scale clearing including vegetation fragmentation, edge effects and on larger remnants, ongoing loss of paddock trees, invasive native scrub, pest animals and weed incursions.

### What is the condition of key elements in the landscape?

- Overall the region's soils are rated in fair condition with largely stable trends; however, there is concern over organic carbon in soil, soil structure, soil acidification, wind and water erosion, and salinity.
- Land managed within its capability is rated as fair with decreasing trends across all indicators except for sheet erosion, gully erosion, and salinity/water logging, which are all stable. However, the highest pressure indicators driving this value were identified as poor to very poor with respect to organic carbon decline, structure decline, soil acidification, and wind and water erosion.
- Overall hydrological condition of the rivers is moderate to good, overall macroinvertebrate condition is poor to moderate, overall fish assemblage condition is very poor, and a moderate to high percentage of samples exceed phosphorous and turbidity guidelines. The drought and low flows have concentrated water contaminants, reducing water quality.
- Overall native vegetation extent and condition is fair, with intact native vegetation covering 40% of the region (below the state average); however, vegetation extent varies markedly across the catchment, with over-clearing in the middle and upper catchment (areas with as little as 3% remaining vegetation) contrasting with vegetated rangelands to the west.

### What significant work has the CMA done?

- Significant works include implementing the Lake Brewster Land and Water Management Plan; rehabilitating over **197,000 ha** of native vegetation; engaging over **250 landholders** in sustainable soil management covering almost **350,000 ha**, and rediscovering the presumed regionally extinct Olive Perchlet (*Ambassis agassizii*) and Yellow Spotted Bell Frog (*Litoria castanea*).

### How much is invested in NRM in the region?

- Overall, over **\$98.5 million** invested through the CMA (2004–10).
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$8 million** invested under the Commonwealth's Caring for our Country program (2008–10); over **\$16 million** invested under the joint Commonwealth–NSW Government Rivers Environmental Restoration program (2006–10).

### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a high level of effectiveness in implementing the region's catchment action plan, showing consistently good performance across all areas of enquiry.

### What are some of the key NRM and planning strategies in the region at the moment?

- Guide to the Murray Darling Basin Plan (Australian Government)
- Land and Water Management Plans (Australian Government and NSW Government)
- Lachlan Catchment Action Plan (NSW Government)
- 3 Water Sharing Plans – gazetted (NSW Government)
- Biodiversity Strategy (NSW Government)
- Community Strategic Plans (NSW Local Government)
- 10 NRM Partnerships Plans (LCMA and NSW Local Governments)



## 10 Snapshot of the Murrumbidgee CMA region

### What do we value in this CMA region?

- **Agriculture** – agriculture is the dominant land use in the region generating \$1.9 billion annually, producing half of the state's total rice output, 23% of its fruit and vegetables and 42% of its grapes. Relative to other regions, water use on farms is medium to high.
- **Biodiversity** – the region is heavily cleared, the majority of the catchment is under reserved and is a priority for inclusion in the National Reserve System.
- **Tourism** – growth in lifestyle or hobby farms is increasing and nature-based tourism generates approx \$500 million annually.

### What are the key NRM challenges in the CMA region?

- Community access to economically viable NRM options and potential socio-economic impacts from the roll out of the Murray Darling Basin Plan.
- Dryland salinity impacts on production and urban areas (for example Wagga Wagga) and a range of other soil management issues, in particular water logging, irrigation salinity, erosion and soil acidity.
- Riverine issues such as surface-water quality, wetland health, river regulation and stream bank erosion.
- Legacies of historical land clearing and control of environmental pest animals and weeds.

### What is the condition of key elements in the landscape?

- Overall hydrological condition of rivers is poor to moderate, overall macroinvertebrate condition is poor to moderate, overall fish assemblage condition is very poor and there are large variations in measures across phosphorus and turbidity indicators.
- Groundwater management areas (GWMAs) are generally in good to very good condition; however, there is very poor ranking for the impacts of localised groundwater use in the Lower Murrumbidgee Deep and Mid Murrumbidgee GWMAs, causing large variations in groundwater levels.
- Overall soils are rated as good, and land managed within its capability is rated as poor to fair, with increasing or stable trends.
- Overall native vegetation extent and condition is fair, with intact native vegetation covering 30% of the region (below the state average).

### What significant work has the CMA done?

- Significant works include implementing **Land and Water Management Plans** in collaboration with local irrigation companies; delivering **\$30 million** in collaboration with Lachlan CMA and the Australian Government to protect Grassy White Box Woodlands; establishing **Traditional Owner River Restoration Teams**; engaging nearly **6,000 landholders** in NRM; rehabilitating over **83,000 ha** of native vegetation (**1,200 Property Vegetation Plans** in place); and improving nearly **5,000 ha** of riverine and wetland environments; and sustainably managing **450,000 ha** of soil.

### How much is invested in NRM in the region?

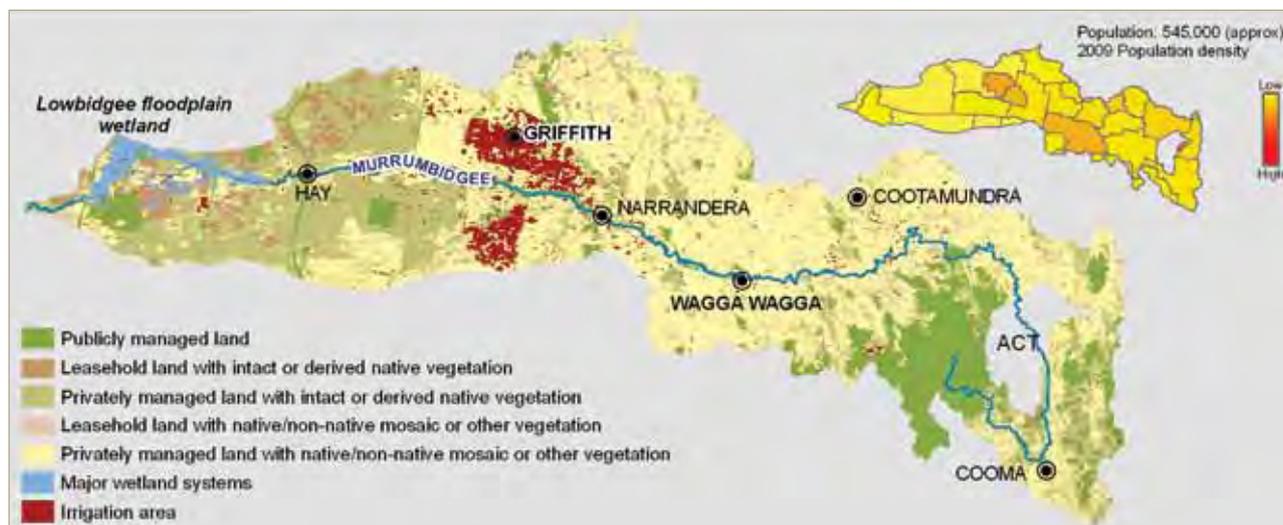
- Overall, over **\$132 million** invested through the CMA (2004–10).
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$33 million** invested under the Commonwealth's Caring for our Country program (2008–10); over **\$24 million** under joint Commonwealth–NSW Government Rivers Environmental Restoration program (2006–10); over **\$32 million** under various Commonwealth–State–Private–CMA-funded WaterSmart projects (2005–10).

### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a high level of effectiveness in implementing the region's catchment action plan, with a particular strength in prioritising investments.

### What are some of the key NRM and planning strategies in the region at the moment?

- Guide to the Murray Darling Basin Plan (Australian Government)
- Murrumbidgee Catchment Action Plan (NSW Government)
- Land and Water Management Plans (Australian Government and NSW Government)
- 4 Water Sharing Plans – gazetted (NSW Government)
- Biodiversity Strategy (NSW Government)
- Community Strategic Plans (NSW Local Government)
- Lower Murrumbidgee Floodplain NRM Plan (Murrumbidgee CMA and Community)



## 11 Snapshot of the Murray CMA region

### What do we value in this CMA region?

- **Agriculture and soils** – these account for 75% of the region's land use (irrigated industry, dryland cropping and grazing and forestry). The region has the state's highest unit value of agricultural production (\$/ha), and is among the state's largest producers of vegetables and rice.
- **Water** – the Murray River supports important wetlands and floodplain forests, reed swamps and lakes (including one Ramsar-listed wetland). Access to and use of surface- and ground-water drives a significant part of the region's economic and social infrastructure.
- **Biodiversity** – The region is heavily cleared, the majority of the catchment is under reserved and high priority for inclusion in the National Reserve System. It is home to many threatened species, including nationally significant Murray Cod, Superb Parrot and Southern Corroboree Frog.

### What are the key NRM challenges in the CMA region?

- Balancing growing differences in societal values at local, state and national scales and helping water-dependent communities and industries adapt to a future with less water.
- Environmental water management, soil salinisation and landscape scale biodiversity conservation and management (primarily through landholder stewardship rather than regulation or establishment of formal reserves).

### What is the condition of key elements in the landscape?

- Overall hydrological condition of rivers is moderate, overall macroinvertebrate condition is poor to moderate, overall fish assemblage condition is very poor.
- Groundwater management areas (GWMAs) are generally in good to very good condition.
- Overall soils are rated in good condition, and land managed within its capability is rated as fair, with increasing or stable trends across all indicators.
- Overall native vegetation extent and condition is poor, with intact native vegetation covering 25% of the region primarily in the west and eastern regions.

### What significant work has the CMA done?

- Significant works include engaging over **38,000 landholders** and community members in NRM; actively managing, restoring and replanting over **63,000 ha** of native vegetation; engaging over **800 landholders** to improve soil condition and reduce erosion; improving nearly **1,500 km** of riparian corridors; and delivering nearly **37,000 ml** of environmental water to **114 wetlands** to reinstate wetting and drying cycles.

### How much is invested in NRM in the region?

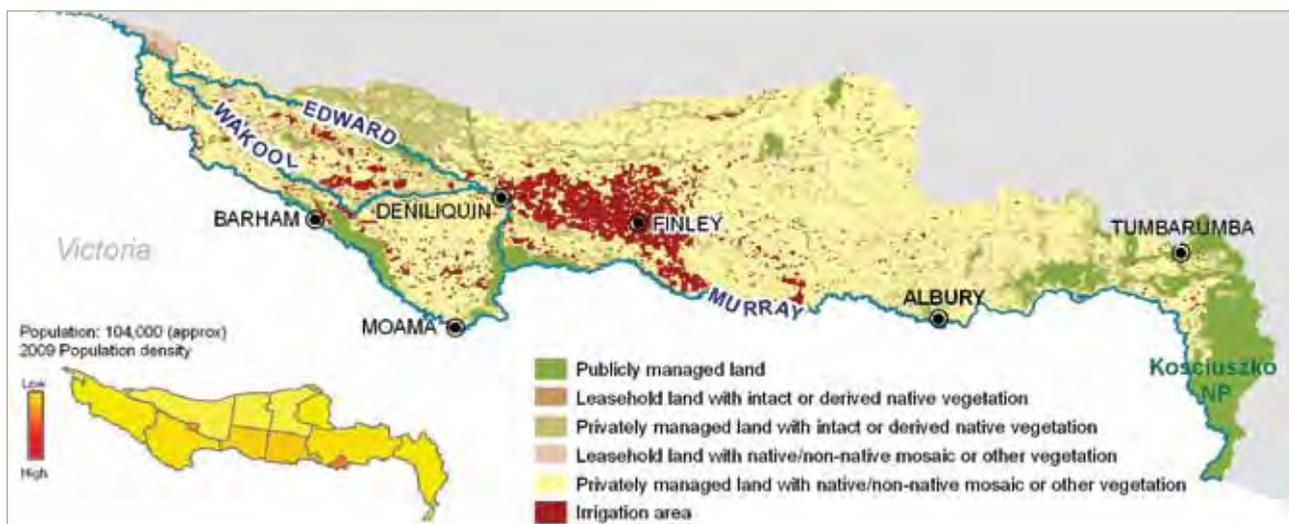
- Overall, over **\$123 million** is invested through the CMA (2004–10).
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$25 million** invested under the joint Commonwealth–State-funded Living Murray Program (2008–10); over **\$1.8 million** invested under the Commonwealth's Strengthening Basin Communities program (2009–10).

### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a significant improvement from its first audit, now having a high level of effectiveness (previously fair) in implementing the region's catchment action plan, with particular strengths in prioritisation and adaptive management.

### What are some of the key NRM and planning strategies in the region at the moment?

- Guide to the Murray Darling Basin Plan (Australian Government)
- The Living Murray Plan (Australian Government)
- Land and Water Management Plans (Australian Government and NSW Government)
- Murray Catchment Action Plan (NSW Government)
- Draft Murray Regional Strategy (NSW Government)
- 3 Water Sharing Plans – gazetted (NSW Government)
- Riverina Red Gum Regional Employment and Community Development Fund (NSW Government)
- Biodiversity Strategy (NSW Government)
- Community Strategic Plans (NSW Local Government)



## 12 Snapshot of the Western CMA region

### What do we value in this CMA region?

- **Biodiversity** – the region contains significant areas of relatively undisturbed rangeland ecosystems and under-represented IBRA regions of high priority to be included in the National Reserve System.
- **Agriculture** – the region contains around 630 pastoral and agricultural holdings (predominantly grazing), which employ around 26% of the region's population.
- **Mineral resources** – mining activity is increasing although the decline in mining in the late 1990s significantly affected the urban communities, particularly Cobar.
- **Water** – the region contains the Paroo River, the last free-flowing river in the Murray Darling Basin, three Ramsar-listed wetlands and 50 nationally important wetlands. It also contains several high-priority groundwater-dependent ecosystems.

### What are the key NRM challenges in the CMA region?

- Declining social capital required to manage extensive rangeland landscapes, and equitable water sharing between water users.
- Ground-cover retention and management, total grazing pressure management and invasive native scrub management.
- Retention of in-stream aquatic habitats and barriers to fish migration.
- Property scale biodiversity management and fire regime management, soil management in cropping areas, wind erosion and pest animals (particularly goats and pigs).

### What is the condition of key elements in the landscape?

- Overall native vegetation extent and condition is good and under low pressure, with intact native vegetation covering 90% of the region; however, most vegetation communities show some degree of modification through grazing and invasive native scrub (27 species are listed in the region).
- Overall hydrological condition of the region's rivers is moderate, and macroinvertebrate and fish assemblage condition is poor (with fish assemblages in the Paroo River rated as good).
- Land managed within its capability is rated as good, with stable trends across all indicators.
- Goats, pigs and foxes are widespread invasive fauna species and Parkinsonia (*Parkinsonia aculeata*), Mesquite (*Prosopis spp.*) and several cacti and annual species threaten significant areas of pastoral land and biodiversity values, as well as several annual species across all land types.

### What significant work has the CMA done?

- Significant works include engaging over **600 landholders and managers**; **large-scale collaborative projects** with community groups and government agencies; establishing an **Aboriginal Reference Advisory Group**; developing an **Indigenous Knowledge System**; addressing total grazing pressure over **600,000 ha** of land; protecting over **22,500 ha** of high conservation value areas; rehabilitating over **16,000 ha** of rangeland ecosystems; completing **21 wetland management plans** completed; implementing over **68,000 ha** of enterprise-based conservation; and installing over **1,000 km** of riparian fencing.

### How much is invested in NRM in the region?

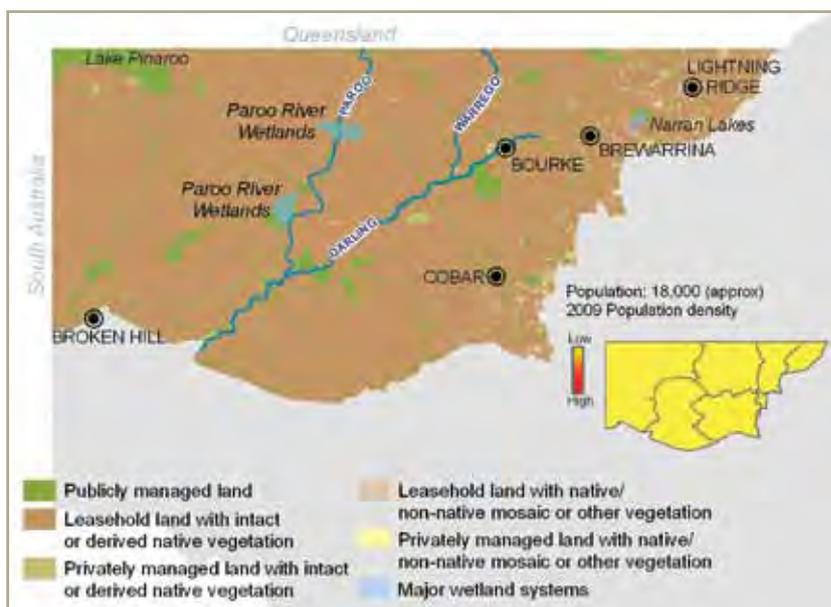
- Overall, over **\$43.9 million** invested through the CMA (2004–10).
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$1.5 million** invested under the joint Commonwealth–NSW Government Rivers Environmental Restoration program (2006–10).

### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a medium level of effectiveness in implementing the region's catchment action plan, and performed consistently with the state-wide trend of stronger performance in engaging communities and delivering projects.

### What are some of the key NRM and planning strategies in the region at the moment?

- Guide to the Murray Darling Basin Plan (Australian Government)
- Western Catchment Action Plan (NSW Government)
- 1 Water Sharing Plan (NSW Government)
- NSW Biodiversity Strategy (NSW Government)
- Community Strategic Plans (NSW Local Government)



## 13 Snapshot of the Lower Murray Darling CMA region

### What do we value in this CMA region?

- **Biodiversity** – the region contains relatively undisturbed ecosystems and the Willandra Lakes World Heritage Area. Under-represented IBRA regions are of moderate priority to include in the National Reserve System and 95% of the catchment is covered by native vegetation, albeit modified by grazing.
- **Agriculture** – a high proportion of the region supports agricultural industries (predominantly grazing, with around 5% cleared for cropping and irrigated horticulture), and a further 3.5% is approved for clearing under previous native vegetation legislation.

### What are the key NRM challenges in the CMA region?

- Diminishing employment opportunities.
- Saline groundwater accession, over-extraction of water for consumption purposes and reduced water allocations for efficient irrigation practices.
- Fragmentation in riverine ecosystems (between river channels, floodplains, lakes and wetlands) including in-stream structures that impede flood flow and recession.
- Ground-cover management, total grazing pressure, wind erosion, and pest animals and weeds.

### What is the condition of key elements in the landscape?

- Overall native vegetation extent and condition is good and under low pressure, with intact native vegetation covering 90% of the region; however, most vegetation communities show some degree of modification.
- Groundwater management areas (GWMAs) are generally overall in good condition; however, there is minimal use of groundwater due to high groundwater salinity.
- Overall soils are rated in good condition, and land managed within its capability is rated as fair, with increasing or stable trends across all indicators except for wind erosion and soil structure decline, which are improving.
- Overall, the Lower Murray Darling Hydrological Index shows impacts of regulation and diversion. While improvement in native to alien fish abundance ratios in the Darling River and in biomass ratios in the upper and lower Murray has been achieved, monitoring indicates that the CAP Riverine Health Target is unlikely to be met by 2015.
- A very high percentage of samples exceed total phosphorous guidelines along the Darling River but only a low to moderate percentage do so along the Murray and lower Murray.

### What significant work has the CMA done?

- Significant works include implementing **eleven agreements** with traditional tribal groups covering over **346,000 ha**; reinstating fish passages and movement over **500 km** in the lower Darling River; protecting and rehabilitating over **14,500 ha** of riparian native vegetation; reconnecting nearly **2,000 ha** of wetlands with floodplain and river systems; re-establishing connectivity of **1,968 ha** of wetlands; establishing over **194,000 ha** of private conservation reserves; improving cropping practice over **80,000 ha** of land; improving over **2 million ha** of native vegetation: and controlling pest animals and plants over **2.5 million ha** of land.

### How much is invested in NRM in the region?

- Overall, over **\$49 million** is invested through the CMA (2004–10)
- In recent years, examples of significant NRM investment co-ordinated outside of the CMA include: over **\$54 million** invested under the NSW Government's Darling Anabranch Pipeline Scheme (2006–ongoing).

### What did the NRC audit tell us about the performance of the CMA?

- The CMA demonstrated a fair level of effectiveness in implementing the region's catchment action plan, and performed consistently with the state-wide trend of stronger performance in engaging communities and delivering projects.

### What are some of the key NRM and planning strategies in the region at the moment?

- Guide to the Murray Darling Basin Plan (Australian Government)
- The Living Murray Plan (Australian Government)
- Lower Murray Darling Catchment Action Plan (NSW Government)
- Draft Murray Regional Strategy (NSW Government)
- 1 Water Sharing Plan – gazetted (NSW Government)
- Biodiversity Strategy (NSW Government)
- Community Strategic Plans (NSW Local Government)

