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Wetlands Australia

NATIONAL WETLANDS UPDATE 2006

ANNUAL UPDATE FOR AUSTRALIA'S WETLAND COMMUNITY

A WETLAND WHERE PENGUINS AND SEALS BATHE IN GLACIAL MELT-WATERS BENEATH AN ACTIVE VOLCANO?

Ewan McIvor
Australian Antarctic Division,
Australian Government Department of the Environment and Heritage

On first impressions, a wetland where penguins and seals bathe in glacial melt-waters beneath an active volcano may not sound particularly Australian, or fit your image of a typical wetland. But the subantarctic Heard Island and McDonald Islands group is already listed as one of Australia's important wetlands in *A Directory of Important Wetlands in Australia*.

The Australian external Territory of Heard Island and McDonald Islands (HIMI) sits isolated in the wild and expansive Southern Ocean. The main island, Heard, is dominated by a towering (2 745m high) active volcano known as Big Ben, and is 70% covered by glaciers. The much smaller McDonald Island, located some 40 km to the west of Heard, is also volcanically active and has doubled in size (to around 2.5 km^2) over the last decade. These subantarctic Australian outposts are also a 'hot spot' for conservation values, including significant wetlands.

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Southern elephant seals (*Mirounga leonina*)—a listed threatened species—use the coastal "pool complex" wetlands near Atlas Cove on Heard Island to breed and moult during Spring and Summer. Photograph: Ewan McIvor

2006: MINISTER'S FOREWORD

Welcome to the 2006 edition of Wetlands Australia, highlighting current action on wetlands conservation, management and education across Australia and looking at planned activities from now until 2007.

The Australian Government strongly supports the conservation, repair and wise use of wetlands across Australia. Wetlands are vital to Australia. They protect our shores from wave action, reduce the impacts of floods, absorb pollutants and provide habitat for animals and plants. They purify our water, are important for recreational activities and form nurseries for fish and other freshwater and marine life.

Wetlands are critical to Australia's environment and protecting them often involves collaboration with all levels of government, industry and community members. Newsletters, such as Wetlands Australia, recognise the important work being undertaken to protect our wetlands.

I note that this edition of Wetlands Australia covers a range of important topics, and reports on Australia's participation at an important international forum, efforts to rescue critical wetland sites in the Barmah-Millewa forest, and the importance of the isolated and beautiful Heard and McDonald Islands.

The ninth meeting of the Conference of the Contracting Parties to the Ramsar Convention on Wetlands (CoP 9) was held at Minyonyo near Kampala, Uganda, from 7-15 November 2005. Australia is an active participant at these meetings and our delegates reported on Australia's wetland-related activities and achievements over the past triennium.

CoP 9 focused on a number of the fundamental aspects of the Ramsar Convention, including revisions to Ramsar definitions, budget, and international wetland governance issues. One of the more relevant outcomes for Australia involves new definitions of "ecological character", "change in ecological character", and "wise use" – which will have implications for site nominations, ecological character descriptions, management plans, and wetland management.

The outstanding results of efforts to rescue the Barmah-Millewa Forest icon site on the border of New South Wales and Victoria are summarised in an article on page 6. Monitoring of this site, following the release of 500 gigalitres of water from the Barmah-Millewa Forest Environmental Water Allocation, has shown that Golden Perch, Silver Perch, Murray Cod and other native fish, as well as waterbirds including Ibis, Spoonbills and Egrets, started breeding in late 2005 as a result of higher water levels. This watering event has provided important information that reinforces our understanding of the breeding requirements of our native fish and birds.

I welcome the article on page 1 on the subantarctic Heard and McDonald Islands, which are being considered by the Antarctic Division of my Department for nomination as Wetlands of International Importance under the Ramsar

Senator the Hon. Ian Campbell, Australian Government Minister for the Environment and Heritage. Photograph: Renae Stoikos

Convention. These remote Islands satisfy seven of the nine Ramsar criteria for Wetlands of International Importance through their unique wetlands types and substantial populations of penguins, Southern Elephant Seals, and waterbirds such as Heard Island Cormorant and Heard Island Sheathbill.

This edition also highlights the outstanding work being undertaken under the second phase of the Australian Government's $3 billion Natural Heritage Trust, at a state, regional and national level across the country. Australia's wetlands will benefit in 2006, with many regional bodies looking to begin projects, implement the next stage, or move forward with implementing regional Natural Resource Management plans.

There are many wetland conservation and management activities being undertaken across Australia, and it is only possible to report on a small proportion of these in this edition. I hope that like me, you will find this national update both interesting and informative; and that it inspires you to care for and appreciate our magnificent wetlands.

If you would like to tell your story in the next edition of Wetlands Australia, or have any feedback on this edition, please contact the Inland Waters Section of the Department of the Environment and Heritage on (02) 6274 1111.

Senator the Hon. Ian Campbell, Australian Government
Minister for the Environment and Heritage

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Cover: Moss. Photograph: Bruce Gray

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The HIMI Territory was inscribed on the World Heritage list in 1997 for its outstanding natural universal values, primarily due to the virtually pristine nature of the environment—understandable, when you consider how far it is from any population centres and the extreme weather conditions that must be endured in transit and on arrival. The Territory also forms part of the 65,000 km² HIMI Marine Reserve, declared under the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* (EPBC Act) in 2002 to protect the conservation values of the islands and the surrounding unique and vulnerable marine ecosystems.

Heard Island has a number of small wetland sites scattered around its coastal perimeter, including areas of wetland vegetation, lagoons, pool complexes, rugged rocky shores, sandy shores and the Elephant Spit which forms a sandy tail to the east. Many of these wetland areas are separated by active glaciers. Wetlands have also been recorded on McDonald Island but, due to substantial volcanic activity since the last (and only second ever) visit in 1980, their present extent is unknown.

The Department of the Environment and Heritage is considering nominating the Territory as a Wetland of International Importance under the Ramsar Convention. The HIMI wetland was rated as the most important Commonwealth-managed wetland in *A Strategic Assessment of Nationally Important Wetlands Managed by the Commonwealth —2003*, which found that it satisfied 6 of the (then) 8 Ramsar criteria for Wetlands of International Importance, by:

1. comprising a unique example of a natural wetland type in the Kerguelen Province bioregion (defined using the Interim Marine and Coastal Regionalisation for Australia—IMCRA)
2. supporting substantial populations of species listed as threatened under the EPBC Act (Southern Elephant Seal, Southern Giant Petrel and Heard Island Cormorant)
3. contributing significantly to the biological diversity of the Kerguelen Province bioregion by providing the only terrestrial habitat for a range of wetland plant and animals species
4. providing critical breeding habitat for large colonies of Macaroni, Gentoo, King and Southern Rockhopper Penguins, and breeding and moulting areas for southern elephant seals
5. regularly supporting more than four million waterbirds—well over the minimum 20,000 limit for Ramsar listing—the majority being penguins (the Macaroni Penguin colonies alone are estimated to total two million pairs)
6. supporting the entire world population of two endemic subspecies of bird (the Heard Island Cormorant and the Heard Island Sheathbill), approximately 6% of the global breeding population of Gentoo Penguins, and approximately 21% of the global population of Macaroni Penguins.

As a result of a decision reached at the ninth Ramsar Conference of Parties in 2005 to add a further criterion for wetlands that support non-avian fauna, it is possible that HIMI—through its substantial seal populations—will become even more significant, satisfying 7 of 9 criteria.

The HIMI Territory and the HIMI Marine Reserve are managed by the Australian Antarctic Division (AAD) of the Australian Government Department of the Environment and Heritage. The *Heard Island and McDonald Islands Marine Reserve Management Plan 2005*, prepared by AAD, has recently come into force, providing for protection of the conservation values of the Reserve over the next seven years. It incorporates strict measures to minimise the risk of introducing non-native species, to avoid disturbance to the flora and fauna, and to prevent adverse impacts of waste and pollution. The Plan recognises the important contribution that scientific research at HIMI can make to understanding the effects of climate change, and to sustainably managing the surrounding marine environment. It obliges humans to act as 'thoughtful, responsible and privileged visitors', so the locals can get on with their preening and primping, unhindered.

The Australian Territory of Heard Island and McDonald Islands is approximately 4000 km south-west of Western Australia, and approximately 1000 km north of the Antarctic continent. AAD 2005

For more information, visit the Heard Island website <www.heardisland.aq>, or contact

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‘PLASTIC SURGERY’ FOR FIRE-RAVAGED SUBALPINE BOGS

Murray Evans
Environment ACT

Investigating and assessing one of the burnt bogs. Photograph: courtesy of Murray Evans

Just as gardens were damaged in Canberra’s devastating 2003 bushfires, many key subalpine bogs were also severely burnt, requiring specialised regeneration to repair damage they suffered.

The regeneration involves transplanting divots of unburnt sphagnum moss into bogs severely damaged by fire, in an effort to recolonise the bog. The technique is one of several innovative ways in which the ACT and NSW Governments, with funding from the Natural Heritage Trust, are trying to rehabilitate the ecologically important and sensitive bogs. Two other innovative methods are the use of shade cloth to protect bogs and slow the release of nutrients to feed bog development.

The Sphagnum Moss Bog Restoration Project is underway in the Namadgi National Park in the ACT and, across the border, in the subalpine areas of the Kosciusko National Park. The subalpine bog sites include Cotter Source Bog, Rotten Swamp and the Ramsar listed Ginini Flats Wetland Complex. Sphagnum moss bog experts from the ACT, NSW and Tasmania are assisting restoration efforts by Environment ACT and the NSW National Parks and Wildlife Service. It’s groundbreaking work, much of which has not been attempted before and the teams are using an adaptive management approach to assess what works best in the long term.

EACT ecologist Peter Ormay inspecting what was once a corroboree frog breeding pool (prior to fires). Photograph: courtesy of Murray Evans

The bogs are crucial for water flow through alpine ecosystems and as habitat. The bogs are also important to Canberra’s water supply because they store and slowly release water (helping provide a continuity of water supply) and also purify the water. The sphagnum moss is like a giant sponge covering a peat base and, normally being wet, is little affected by bushfire. However, the very dry 2003 season saw, on average, 75% fire damage to each bog in the region.

In the first days of the 2003 fires, a fire front swept through and did relatively little damage. An assessment by rangers that the bogs were safe proved premature, as a second major front involving crown fires in the tops of trees was so intense that all the bogs were damaged.

The problem is that once the bog’s protective cover of moss is burnt, the peat underneath becomes hydrophobic and rewetting isn’t possible. It therefore becomes critical to prevent the peat drying because, once dry, it erodes, which may lead to loss of part or all of the bog and its habitat. An erosion edge “nibbles into the bog” and the problem snowballs.

To take the strain off the recovering bogs, recovery teams have dug in hay bales along contours and likely erosion channels and smaller ecologs (geotextile ‘sausages’) in shallow grooves. The ‘hay’ bales have usually been bales of rice stalks from the Riverina and both products are designed to decay naturally over time. The aims are to:

- reduce water velocity and erosion;
- help the bogs retain water to prevent the peat drying; and
- enable sphagnum moss and other wetland plants to grow.

While resources have not been available to revitalise every affected bog, recovery teams have concentrated efforts to help the most severely affected bogs, and particularly those most important as water sources and habitat.

This is good news for the endangered Corroboree Frog (the bogs are its main breeding habitat) and also the Broadtoothed Rat, a rare species of herbivore that tunnels in the moss outcrops. The bogs themselves range in size from an average loungeroom upwards to several hundred metres across.

Both Environment ACT and the NSW National Parks and Wildlife Service are looking at ways of accelerating sustainable regeneration of the sphagnum moss bogs but, at present, it is “early days” in determining just which ways are the most effective.

ENVIRONMENTAL WATER ALLOCATION AND THE LIVING MURRAY

Allison Hicks
Murray-Darling Basin Commission

Like most dryland river systems in Australia, the natural environment of the Murray is highly active. It responds to natural fluctuations in flow as time passes. Before regulation, high flows occurred most often in winter/spring, and low flows were typical in summer/autumn. With development came the need to deliver more water during summer and autumn to satisfy peak demand. This is at a time when (under natural conditions) the river system would experience much lower flows.

Regulating the river system, along with other management practices, has led to long-term ecological decline. Scientific advice tells us that if we do nothing, the river's health will get worse. This will affect our irrigation and other industries, our native plants and animals and our communities.

Improving river health

In early 2002, the Murray-Darling Basin Ministerial Council established The Living Murray in response to substantial evidence that the health of the River Murray system was in decline. Following this, Council agreed that The Living Murray should return the River Murray to the status of a healthy working river. The Council's First Step decision marked the beginning of a practical step forward and demonstrated that the Murray's continued existence was underpinned by high-level environmental principles.

The initial focus of the First Step decision is on achieving outcomes at six significant ecological assets complemented by water recovery projects and an environmental works and measures program.

Significant ecological assets

The ecological assets were identified on the basis of their high ecological value. They are important breeding sites for waterbirds, and provide life-cycle habitat for fish, birds, vegetation and a variety of other river and floodplain plants and animals. The assets are:

- Barmah-Millewa Forest;
- Gunbower Koondrook-Pericoota Forests;
- Hattah Lakes;
- Chowilla Floodplain (& Lindsay-Wallpolla Islands);
- Murray Mouth, Coorong and Lower Lakes; and
- River Murray Channel.

Each asset has an Asset Environmental Management Plan (AEMP) that explores the ecological objectives for the asset and identifies the volume and timing of environmental water and structural works needed to achieve those objectives.

Low level flooding of Barmah (Vic) and Moira Lakes (NSW)—4 November 2005. Photograph: Keith Ward. Goulburn Broken CMA.

Water recovery projects will address overallocation of water resources, with the recovered 'environmental water' used to achieve environmental benefits at the significant ecological assets.

The Living Murray Environmental Watering Plan (LMEWP) provides the framework for making decisions on the volume, timing and frequency of water to be provided to each of the assets.

For information on the AEMPs and the LMEWP go to: <http://www.thelivingmurray.mdbc.gov.au/implementing>

Reinvigoration at Barmah-Millewa Forest

The Barmah-Millewa Forest is the largest River Red Gum forest in Australia. It covers approximately 66,000ha of floodplain between the townships of Tocumwal, Deniliquin and Echuca. Both the Barmah Forest and the Millewa Forests (as part of the New South Wales Central Murray State Forests) are listed on the Ramsar List of Wetlands of International Importance.

Three bird species listed under the Japan-Australia Migratory Birds Agreement (JAMBA) and six species listed under the China-Australia Migratory Birds Agreement (CAMBA) have been recorded at Barmah-Millewa Forest. The Barmah-Millewa Forest contains 23 species listed under the Bonn Convention on the Conservation of Migratory Species.

The Barmah-Millewa Forest is downstream of Hume Dam and Yarrawonga Weir, which regulate River Murray flows. As a result, the natural pattern of river flows and flooding in the forest has altered significantly. There has been a decrease in medium-sized spring floods and an increase in low level, undesirable summer flooding. These changes to the natural wetting and drying cycles of the forest have resulted in the decline of vegetation communities, and reduced waterbird breeding opportunities. River Red Gum forest is disappearing from higher elevation areas and moving to lower areas that were previously too wet to support them.

The forest supports large breeding colonies of Australian White Ibis. Photograph: David Leslie

Swamp Darling Pea. Diverse plant associations are a key feature of the forest. Photograph: Amy Webb.

Golden and Silver Perch eggs spawned during high river flows. Photograph: Alison King, Arthur Rylah Institute.

From mid October 2005 through to January 2006, up to 500 GL of environmental water is being made available by the Victorian and NSW governments through the Barmah-Millewa Forest Environmental Water Allocation. This will complement River Murray flows that have resulted from recent good rains.

While the Barmah-Millewa Forest Environmental Water Allocation does not form part of the water to be recovered under the Living Murray, it demonstrates the environmental benefits possible with such an allocation.

Already, the forest is showing strong signs of response. More than half the Barmah-Millewa Forest wetland area has been inundated, and vegetation (including the regionally significant Moira Grass) has started to respond.

Careful monitoring has shown that Golden Perch, Silver Perch and other native fish, spawned during flow peaks. This event reinforced our understanding of the spawning requirements of these and other native fish species. Colonies of waterbirds including ibis and egrets have also started breeding following higher water levels in the forest.

The release of the Barmah-Millewa Environmental Water Allocation has also boosted flow levels along the length of the River Murray with additional water available to downstream wetland systems (Werai Forest, NSW). It is also enhancing the release from the Barrages into the internationally significant wetlands of the Coorong and Murray Mouth.

While much is known about how to achieve positive outcomes from environmental flows, there is no single best approach that can be applied free of uncertainty. Flows into the forest will continue to be managed carefully in the coming months to sustain bird and fish breeding and maximise environmental benefits.

*One gigalitre of water is equal to one billion litres or approximately the same volume of water as 1000 Olympic size swimming pools.

The Living Murray is an initiative of the Murray-Darling Basin Commission and is a partnership of the Australian, NSW, Queensland, Victorian, SA and ACT Governments.

Goanna. The Barmah-Millewa Forest provides breeding habitat for a number of species including fish, frogs and reptiles. Photograph: Amy Webb.

A BRIGHTER FUTURE FOR TASMANIAN WETLANDS

Imogen Birley
Australian Government Rivercare Facilitator

This year is set to be a big year for Tasmanian wetlands.

It will see a significant suite of projects implemented across Tasmania that will greatly improve the knowledge, protection and management of important wetlands. Tasmania is home to 10 Ramsar wetlands, and presently has a further 89 listed in *A Directory of Important Wetlands of Australia* (DIWA).

While the Ramsar sites are concentrated in coastal regions, nationally significant wetlands are relatively evenly distributed across the state. This article gives a broad overview of some of the key investments being undertaken to better protect and manage Tasmania's unique wetlands.

The Tasmanian Department of Primary Industry, Water and Environment, with some funding assistance from the Australian Government's National Action Plan for Salinity & Water Quality, has recently completed the first stage of the Conservation of Freshwater Ecosystem Values Project (CFEV). The CFEV project has audited and mapped the conservation values of all freshwater-dependent ecosystems in Tasmania on both public and private land, including of course, wetlands.

An outstanding state government initiative, the resulting CFEV database will soon provide an invaluable regulatory, planning and management tool. The second stage of CFEV, due to start in 2006, will involve ground-truthing the database, and developing specific management tools and recommendations for key high conservation value freshwater ecosystems. Wetlands will feature significantly.

For further information about CFEV, please contact:

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Interlaken wetland, part of the larger Lake Crescent, located in the Northern Midlands of Tasmania, near Tunbridge. The wetland includes marshflats and several rare plant species, and is an important refuge for ducks, especially during drought. Photograph: courtesy of Imogen Birley

Orielton Lagoon, located in SE Tasmania approx. 20km east of Hobart. It is an estuarine wetland of global importance, as an important summer feeding ground for a range of migratory birds. Photograph: courtesy of Imogen Birley

The Natural Heritage Trust (NHT) has funded a much-needed update of the Tasmanian section of DIWA. In 2000, the National Land and Water Resources Audit identified another nearly 300 wetlands for assessment and possible listing on the DIWA. This project will capitalise on the new CFEV database to provide a comprehensive update of the Tasmanian DIWA listings, greatly improving local knowledge of the number and indicative condition of significant wetlands in the state.

The NHT has also funded the development of ecological character assessments for three of Tasmania's Ramsar wetlands—Interlaken, Moulting Lagoon and the Cape Barren Island coastal lagoons. With most Ramsar sites in Tasmania now with draft or completed management plans, developing ecological character assessments will provide a further important layer of knowledge and protection to enhance management strategies. It is hoped that ecological character assessments for the remaining seven Ramsar sites will follow soon on the heels of the first three.

For *further information please contact* Imogen Birley, Australian Government Rivercare Facilitator Tel: 03 6233 3401 Email: <imogen.birley@nht.tas.gov.au>

Tasmania's three Natural Resource Management (NRM) regions will provide a substantial increase in investment to help better protect and manage valuable wetlands. Commendably, all three regions have identified the importance of Tasmania's wetlands and have set short and long-term regional targets for maintaining and improving their protection, condition and extent. In 2006, a range of regional NRM activities will start. Welcome first steps include:

- developing a management plan for Robins Passage-Boullanger Bay system on the Northwest Coast, considered the most significant site for migratory shorebirds in the state;
- implementing priority actions listed in relevant management plans that will protect and improve wetlands;
- funding for incentives to help land managers better protect and manage significant wetlands on private property (for example, through fencing, weed and erosion control, planting native vegetation, restoring natural flow cycles, and covenanting);
- developing and continuing regional, community-based water quality monitoring programs, including monitoring significant wetlands; and
- developing an Index of River and Wetland Condition, to benchmark current condition, and recommending an appropriate monitoring framework for tracking changes.

These activities have been made possible with funding through the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality.

For further information on Tasmanian regional NRM activities, go to <www.nrmtas.com.au> and follow the prompts to each region for contacts and further information on regional strategies and investments.

THE NSW WETLAND RECOVERY PLAN

Kylee Wilton
NSW Department of Natural Resources

Macquarie Marshes, NSW. Photographer: Neal Foster.

The *NSW Wetland Recovery Plan* is a suite of projects developed to deliver long-term and permanent benefits to ecologically significant wetlands through water efficiency projects, water buy-back, and projects to improve wetland management in the Macquarie Marshes and Gwydir Wetlands.

On 11 June 2005, the NSW Government announced the *NSW Wetland Recovery Plan* (the Plan), and the NSW Government's pledge of $13.4M towards the $26.8M Plan. The NSW Government is seeking matching funds from the Australian Government Water Fund.

Among others in New South Wales, the Macquarie Marshes and the Gwydir Wetlands are Wetlands of International Importance, listed under the Ramsar Convention. They are in a critical state, and in some areas are at risk of irreversible decline. This could lead to the collapse of their ecosystems. The Plan will develop specific short, medium and longer-term measures to achieve healthier wetlands and rivers and make human communities more viable. This will be achieved by focussing on water recovery, water application, and research and development, in conjunction with land management practices.

The Plan will increase the sustainability of NSW wetlands and rivers and their associated ecological communities. These factors will combine to increase the resilience of rivers and wetlands as much as possible. The benefits are important on a range of scales—locally, regionally, nationally and internationally, since these are such important wetlands.

The first stage of the Plan focuses on developing Environmental Management Plans for the ecologically significant Macquarie Marshes and Gwydir Wetlands, and implementing infrastructure projects to improve water efficiencies for these wetlands. A fundamental improvement to the quantity and timing of inflows to these wetlands is required in conjunction with more appropriate land management practices. When implemented in tandem, these projects will maximise the environmental outcome from this investment. Even in isolation, each of the projects identified will provide maximum benefit to the wetlands.

The Plan will be fully developed to provide:

- better knowledge and decision-making data;
- environmental improvements to rivers and wetlands ;
- more water and improved flow regimes for rivers and wetlands;
- bio-physical improvements to rivers and wetlands; and
- greater direction to Catchment Management Authorities (CMAs) for management of wetlands in their Catchment Action Plans.

This project capitalises on existing social and institutional structures, such as CMAs, community groups and government partnerships. It also involves new water management legislation and extensive river management expertise. Together, all these factors underpin a major river and wetland restoration project on two important regulated rivers, the Macquarie and Gwydir, in the Murray-Darling Basin.

An interagency group led by the NSW Department of Natural Resources is managing the Plan, assisted by the NSW Department of Environment and Conservation, the NSW Department of Primary Industries, the Central West Catchment Management Authority, the Border Rivers-Gwydir Catchment Management Authority, and the State Water Corporation.

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SPATIAL DATA USE IN WETLAND MANAGEMENT

Cassie Burns
WetlandCare Australia

WetlandCare Australia (WCA) has begun using computerised data mapping to determine priorities for wetland funding and also for threat assessment.

WCA is currently exploring different ways that spatial (or Geographic Information Systems, [GIS]) data can assist wetland management. Spatial data can aid wetland management planning to prioritise wetlands for field assessment work, on-ground works or funding. It can also be used to help determine wetland values, potential threats and wetland change (for example, by area or type).

One such project, entitled S*ustainable Wetlands on NSW Coastal Landscapes*, uses spatial data to determine wetland values and potential threats, prioritising wetlands for on-ground action. The project is funded under the Natural Heritage Trust, through the Hunter Central Rivers Catchment Management Authority (CMA), and the Northern Rivers CMA.

The project team uses previously developed spatial data gained from a range of sources, including the Australian, NSW and local governments and other natural resource organisations, to develop a wetlands map for the coastal zone from Gosford to Tweed Heads in NSW. The final wetland map is a compilation of available wetland data, classified using *A Directory of Important Wetlands in Australia* (DIWA) classification system.

Additional spatial data has been collected and used to determine the wetland values of these mapped wetlands and any potential threats they face. The values and threats information helps determine which wetlands get priority for protection, conservation and condition improvement.

WCA will use wetland priority areas identified during this project in a second *Estuarine Wetland Assessment* project, funded by the NSW Environmental Trust. Priority wetlands will get more detailed field assessments to determine their condition. Wetland Condition information will also be recorded spatially and displayed on maps produced by a GIS.

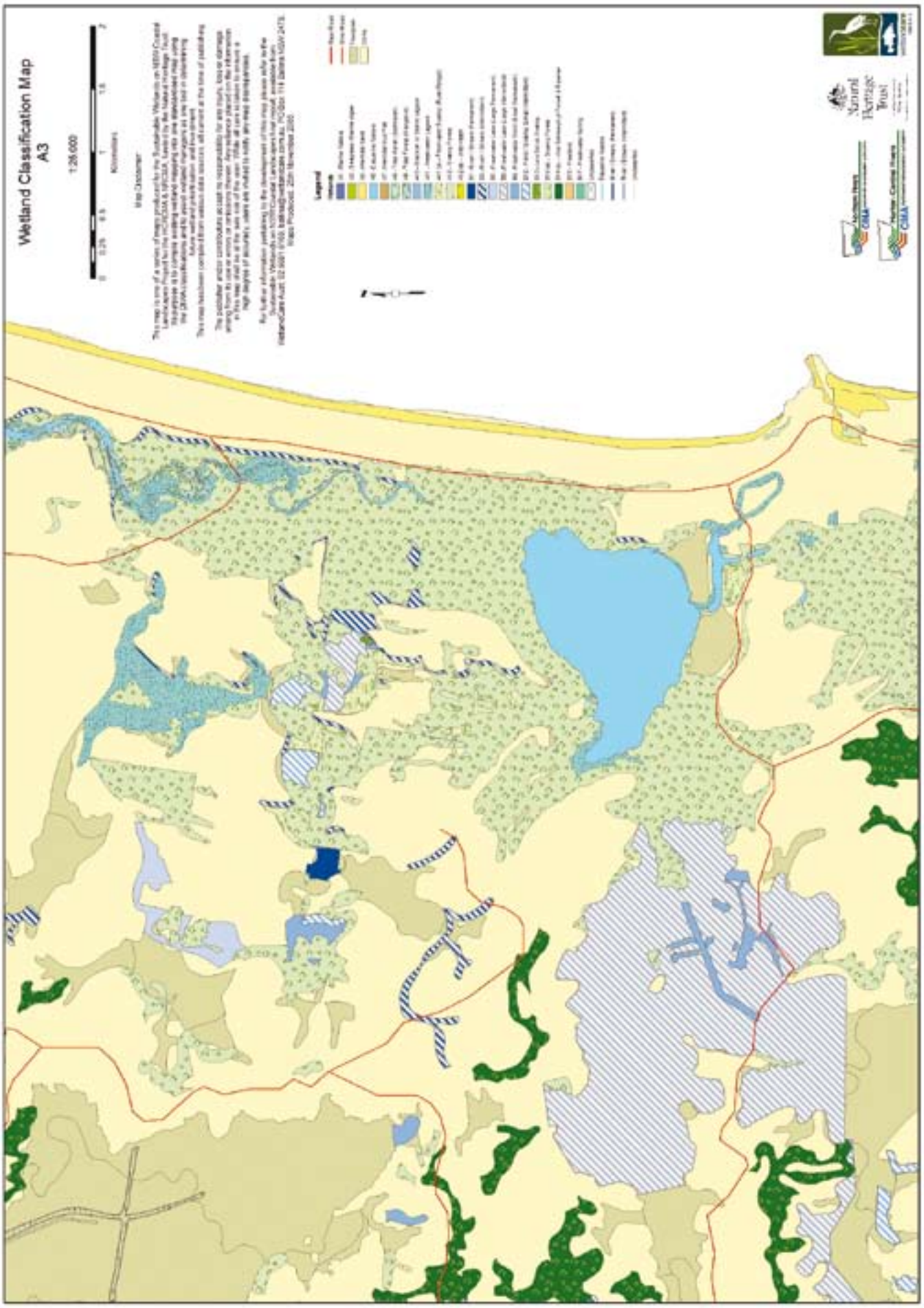
The *Estuarine Wetland Assessment* project will also trial the use of historical parish maps that include detail noted by the original surveyors (some dating back to the 1800s) to determine the degree of change to wetlands over the last 100 years. Information from selected parish maps will be digitised into spatial data and compared to current wetland mapping in the same area.

Spatial data is proving an important tool for assisting wetland managers in planning and implementing wetland protection, conservation and condition improvement. Many methods for using spatial data in wetland management are currently under development and it is becoming increasingly apparent that spatial data and GIS will play a significant role in the future of wetland management.

If you would like any further information on any of the WetlandCare Australia projects mentioned above, please do not hesitate to contact Senior Project Officer, Cassie Burns on 02 6681 6169 or <cassieburns@wetlandcare.com.au>.

Opposite page: Example of wetland classification map, Cudgen Lake area, Tweed River catchment. Photograph: courtesy of Cassie Burns

Left: Cassie Burns, Senior Project Officer, completing wetland assessment work in the Belongil Wetlands, Byron Bay NSW. Photograph: courtesy of Cassie Burns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VICTORIA'S INDEX OF WETLAND CONDITION

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Alpine Bog Wetland. Photograph: Bruce Gray

Victoria has developed a uniform, statewide method for wetland condition assessment to help NRM practitioners better evaluate the effectiveness of their actions for managing wetlands. The process of developing the method has shown that extensive stakeholder input is vital.

The Victorian Department of Sustainability and Environment (DSE) has developed an Index of Wetland Condition (IWC) as a provisional method for assessing wetland condition in Victoria. The National Action Plan for Salinity and Water Quality (NAP) and the Natural Heritage Trust (NHT) helped fund the project. This article describes the way the index was developed and discusses some of the challenges involved and work for the future.

The project was conducted as a multi-regional project of statewide interest, because natural resource management agencies across Victoria will use the Index. The project was also of scientific interest, as it required expert knowledge of condition assessment and wetland ecology. DSE formed an expert panel, with scientific wetland experts and natural resource management (NRM) practitioners to advise the project team and steering committee. Several rounds of information sessions and workshops were organised across Victoria to keep stakeholders informed and encourage input into the development of the IWC.

The development of the IWC was based on two frameworks: a policy and NRM framework and an ecological framework.

The policy and NRM framework reviewed the drivers for developing the IWC, examined who would use the IWC and how it would be used. It also reviewed the practical requirements of NRM managers. The ecological framework provided the structural basis for the IWC, established the reference benchmark for assessing condition and examined issues related to change in condition and temporal and spatial variability.

The Index has national relevance. Across Australia, NAP and NHT require natural resource managers to determine how appropriate, effective, and efficient national policies, strategies and programs are in improving water quality, addressing salinity, and repairing the natural environment. This involves monitoring natural assets and evaluating management responses. Aquatic ecosystems, particularly wetlands, are nationally recognised natural assets. In Victoria, a standard method for assessing wetland condition was needed to help natural resource managers address NAP and NHT monitoring and evaluation requirements for wetlands and to facilitate catchment condition and State of the Environment reporting.

Initially, the project focussed on defining the term 'condition' and establishing the scope of the project. Wetland condition was defined as the state of the '*biological, physical, and chemical components of the wetland ecosystem and their interactions*'. The project team, advisers and stakeholders agreed the Index would be designed for use at individual wetlands which were naturally-occurring (not artificial) and 'inland' (not having a marine hydrological influence).

It was also important to identify how the IWC would be used in the wider context of NRM. Its primary use is in assessing wetland condition in a catchment region and setting and evaluating resource condition targets. The IWC will also help identify wetlands facing threats and help assess management options by comparing the relative effectiveness of different strategies in improving wetland condition. Information about wetland condition is only one of several types of information that direct management decisions about wetlands.

Practical considerations are important for NRM agencies. Constraints on budgets and staff expertise mean that a condition assessment method needs to be relatively rapid, cost-effective, easy to use, and not require repeated visits to a wetland for data collection. Ideally, condition assessment should be able to be undertaken at any time of year, providing the flexibility for managers to meet program timelines. This means that condition assessment should not rely on the wetland being in a particular phase in the hydrological cycle (filling, full, drying, dry).

The ecological framework for the IWC examined wetland drivers (geomorphology and climate), the wetland catchment and the ecology of wetlands to identify wetland characteristics and key components on which to base the

IWC measures. It also looked at the agents of change and temporal and spatial variability in wetlands. The IWC aims to detect human-induced change in wetland condition as opposed to natural change. The ecological framework also established the reference against which condition is assessed as the condition of the wetland at the time of European settlement.

The policy and NRM framework and the ecological framework established a set of requirements for the Index that dictated its structure and guided the evaluation of potential condition measures. The IWC is designed as a hierarchical index. The sub-indices form the top-level of the hierarchy and are based on the wetland catchment and the fundamental characteristics of the wetland: physical form, hydrology, water properties, soils and biota. The key components form the next level in the hierarchy, followed by the actual measures. Measures may be based on the components of a wetland ecosystem or the threats or impacts on the components.

The project focused on the conceptual framework that underpins the IWC and the selection of suitable measures. There has been minimal testing of the Index to date. The next phase of IWC development will focus on its provisional use combined with testing for accuracy and practicality. Use of the IWC in Victoria will require statewide coordination, training, information management and analysis. Testing will require the design of a suitable program and analysis of results. It is proposed to review the method within five years.

The project faced challenges in two main areas. The first set of challenges arose because the large number of stakeholders involved were required to reach a common understanding about terms and concepts which are commonly used in NRM but are often ill-defined. These include the understanding of what 'condition' is and how a 'measure of condition' will be used. A common understanding of these concepts enabled stakeholders to reach general agreement on the scope and practical requirements of the IWC.

The second set of challenges related to the nature of wetlands in Victoria (their spatial and temporal variability), the general lack of data and limited scientific evidence for the way changes in condition occur in wetlands, and how changes relate to human activities and natural drivers. These factors constrained the use of some potential measures and required untested assumptions about others. Also, ecological considerations were often difficult to reconcile with the practical requirements of the IWC. For example, measures which require frequent data collection over a period of time were not adopted because they clashed with the practical need for a rapid assessment technique based around a single wetland visit.

Developing a condition assessment method for wetlands requires extensive stakeholder consultation, and considerable attention is required to establish a conceptual framework to underpin the method. Once this framework is established a logical process can be followed to derive a set of measures and identify the advantages and shortcomings of particular measures.

More information on IWC development and the measures included can be found in the 'Index of Wetland Condition. Conceptual framework and selection of measures' and 'Index of Wetland Condition. Assessment of wetland vegetation' project reports, which are available on the DSE website <http://www.dse.vic.gov.au/dse/index.htm>.

Alpine Bog Wetland. Photograph: Caitlin Barry

GREAT BARRIER REEF

Coastal Wetlands Protection Programme—Pilot Programme

Bob Smith
WetlandCare Australia

Background

Wetland conservation and management in catchments adjacent to the Great Barrier Reef have received a boost with the Australian Government funding the Great Barrier Reef Coastal Wetlands Protection Programme (GBRCWPP) over the next five years. The programme was announced following concerns about potential damage to the Great Barrier Reef from wetland clearing and drainage, resulting in increasing levels of sediment, pesticides and nutrients reaching the Reef Lagoon.

The GBRCWPP is part of the Queensland Wetlands Programme, which has been established to develop and apply measures for the long-term conservation and management of wetlands throughout Queensland. A $2 million two year pilot programme under the GBRCWPP has been implemented to develop and manage early on-ground activities to conserve and manage priority wetlands. The implementation of the pilot programme is being undertaken by a consortium lead by Conservation Volunteers Australia on behalf of WetlandCare Australia, Australian Centre for Tropical Freshwater Research and CSIRO.

An Independent Reference Group has been established to prioritise wetlands and assess pilot programme proposals, providing recommendations to the Australian Government Minister for the Environment and Heritage. The Investment Strategy for the Queensland Wetlands Programme provides general principles to guide investment decisions under the Queensland Wetlands Programme and is consistent with the intent of the Bilateral Agreement between the Australian Government and the Queensland Government and the objectives of the Reef Water Quality Protection Plan (the Reef Plan). These principles are listed below and have been used by the Independent Reference Group as part of the assessment process:

- scientific analysis of natural resource conditions, trends, problems and priorities;
- addressing the causes rather than symptoms of problems;
- consistency with other planning processes and legislative requirements;
- setting targets consistent with the National Framework for Natural Resource Management (NRM) Standards and Targets and the goal of the Reef Plan;
- strategic, prioritised and achievable actions necessary to address the objectives of the programme and achieve the targets;
- continuous development, monitoring, review and improvement of the proposal; and
- progressing the implementation of strategies within the Reef Plan.

Goorganga wetland retains many of its original values but is under threat from aquatic and woody weed invasion as well as feral pig damage. Photograph: courtesy of Bob Smith

Horseshoe Lagoon suffers from aquatic weed infestation and permanently high water levels from irrigation tailwater.
Photograph: courtesy of Bob Smith

In particular, the pilot programme will support projects that deliver permanent protective measures such as conservation agreements.

The pilot programme's desired outcomes are to:

- improve water quality and biodiversity within wetland systems;
- create an awareness of the key issues and engagement within the community;
- help protect wetlands and their values; and
- help prevent further wetland degradation.

Anticipated outputs from the pilot programme include:

- management actions (e.g. weeds, riparian vegetation, grazing, drainage etc);
- education, training, and support of private landholders and/or NRM Boards and staff;
- conservation agreements, possibly in perpetuity, with farmers and local government participation, either voluntary or under government legislation;
- incentives—public good aspects to payments, a bidding system or conservation agreement, short term rather than long term payment, a possible auction approach; and
- wetland rehabilitation.

The pilot programme will focus on the priority catchments identified in the Reef Plan taking into consideration wetland priorities identified by the Queensland Environment Protection Agency (EPA); agreed NRM priorities under the National Action Plan for Salinity and Water Quality and Natural Heritage Trust; and outcomes supporting Biodiversity Hotspots and Natural Resource Management Regional Plans. Existing wetland priorities, and whether an area has local, state, national or international significance, have also been considered when identifying priority wetlands.

Progress to Date

The five NRM Regional Bodies along the GBR Coast have assisted in engaging local stakeholder groups to identify candidate sites. Five proposals have been approved and are currently being implemented:

- Horseshoe Lagoon;
- Healeys Lagoon;
- Cungulla;
- Goorganga; and
- Lagoon Creek.

The Independent Reference Group has recommended a further ten proposals for funding.

Four more candidate proposals are being developed and will be considered in early 2006. Works at all sites are expected to be finished by July 2007, after which a review will evaluate the success of the pilot programme.

GBRCWPP contact details:

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TOWARDS AN AUSTRALIAN WETLAND INVENTORY

Geoff Larmour
Inland Waters Section
Australian Government Department of the Environment and Heritage

Australia is moving closer to having a national inventory of wetland assets.

The Australian Wetland Inventory (AWI) has so far been developed under the direction of the national Wetlands and Waterbirds Taskforce, with involvement and support from the Australian Government and all states and territories.

A Working Group was formed at a Wetlands Inventory workshop in November 2003 to develop a 'Framework for a National Wetland Inventory'. The springboard for discussions was Ramsar Resolution VIII.6, A Ramsar Framework for Wetland Inventory, and the Taskforce has been adapting and developing this generic structure into a framework to suit our situation in Australia.

Mandate and drivers

The Ramsar Convention promotes developing and using national inventories to support the wise use of wetlands. Similarly, Commonwealth, state and territory policies also recognise the need for wetland inventory. At a more practical level, the emerging requirements of regional National Resource Management (NRM) planning and investment and Local Government Authorities highlight this need.

One of the realities of natural resource management is that knowledge of the distribution and values of wetlands is needed to inform decision making and prioritise activities and investment. The AWI therefore aims to provide a standardised approach and methodologies that will guide and inform inventory work, and deliver consistent and comparable data on wetlands across Australia.

Elements of the AWI framework

Taskforce discussions have developed a vision for the national inventory, identified a range of potential uses, articulated its principles and a preferred option for data structures, and considered ideas about potential delivery mechanisms for the AWI.

Nymphaea waterlily among Eleocharis spike-rush. Photograph: Roger Jaensch

Vision

The AWI will document the location and extent of Australia's wetland assets and their associated core values by collection (of new data) or collation (of existing data). These data will be publicly accessible and will guide wetland conservation, wise use, management and restoration.

Uses and needs

Broadly, the AWI will:

- inform policy decision-making (direction) by delivering consistent information on the definition, status and values of wetlands;
- fulfil international obligations, (e.g. Ramsar Convention, Convention on Biological Diversity, Agenda 21);
- fulfil policy obligations at Commonwealth, state/territory, regional and local levels, including identifying and delineating wetlands of special significance;
- establish a consistent basis for wetland classification, assessment, and informing priorities for management and monitoring;
- support regional natural resource management planning and investment, including national NRM monitoring and evaluation under the Natural Heritage Trust;
- provide an integrated and coherent information base for increasing awareness about the status and values of wetlands;
- provide support for statutory planning and decision-making processes;
- provide data for State of the Environment reporting and resource auditing;
- provide a platform for delivering national data and information while reducing duplication across Commonwealth, state, regional and local governments; and
- provide input for identifying knowledge gaps and potential funding for wetland management.

These are necessarily focused on government needs, and the Taskforce recognises there are a range of other AWI applications, eg. it would be a primary source of information for establishing a representative system of freshwater reserves, or finding sites for a waterwatch or frogwatch group to collect samples.

Principles

- An AWI should provide, as a minimum, a spatially referenced index of wetlands data (including inventories, mapping, scale, custodians and contacts);
- The minimum scale of wetland mapping for AWI will be 1:250,000 for the whole of Australia, with finer detail for significant wetlands. Scale to be revised to 1:100,000 within a specified term (yet to be determined);
- An AWI should include original data rather than derived data, although subsequently derived data may be linked;
- An AWI, including supporting state inventories, does not need to include all data. However where the data is not within the database, the point of truth for the data should be established; and
- Data to be used in an AWI will fall under three broad categories:
  - "base data", data that is detailed and site specific and maintained within the database;

– "layer data", complete datasets available as information "layers" (eg a digital coverage) that are maintained by others external to the database; and

– "metadata", external data that is identified in the database using metadata and, ideally, linked to the database where it exists in digital format and is readily available.

Data structure

The preferred option for the AWI would encompass information gathered at different levels, as shown below, and would aim to incorporate data from:

- national wetland databases, eg. the Australian Wetlands Database;
- state and territory inventories;
- regional and local inventories; and
- Datasets produced by CRCs, Universities, other research organisations and wetland management groups.

This would involve providing "Specific guidance to jurisdictions" on the details of State Wetlands Inventories to ensure consistency and allow for summarisation of data and aggregation of data from different agencies and organisations.

We need consistency and compatibility built in at every level, and intend exploring options to make an inventory database system available to those at the regional/local level that will suit their needs for detailed management-oriented information, but will allow for aggregation of information to the next level where required.

Delivery

The preferred delivery method is yet to be discussed in detail by the Taskforce, with a whole raft of data access and management issues yet to be canvassed and worked through. However, the most obvious method for delivery would be via the Internet, with an interface to access the data via text-based and spatial queries. Ideally there would also be multiple entry points which could be linked to increase accessibility to the information.

Further development of the AWI

At their most recent meeting in November 2005, senior executive members of conservation agencies from all jurisdictions on the Natural Resource Policies and Programs Committee agreed to the further development of the AWI, based on the Taskforce's discussions.

Discussions will continue within the Taskforce and more widely across government agencies responsible for land and water management. We also recognise the need for consultation with regional and local bodies and researchers to determine the roles that these groups can play in contributing to, and end-user needs in accessing, wetland inventory information.

We aim to develop the inventory framework and database design so that it can capture activities funded under national NRM programmes, data generated by wetland monitoring and evaluation and description of ecological character.

An Australian Wetland Inventory is a significant undertaking that will take time to develop and implement, and will need the continued support of all interests to make it viable. It is an important step forward for the conservation and management of wetlands in Australia.

Ginini Flats Wetland Complex, ACT. Photograph: Caitlin Barry

THE BEAUTIFUL BUNGAWALBIN:

Receiving a helping hand from WetlandCare and the community

Megan Westlake and Gary Owers
WetlandCare Australia

The Bungawalbin and two threatened bird species have a chance for a new lease on life thanks to WetlandCare Australia (WCA) projects in northern New South Wales.

Throughout 2005 WCA has worked with local community groups and farmers to help restore and better manage areas of the Bungawalbin Catchment, a region of high conservation value and home to the endangered Black-necked Stork and the vulnerable Comb-crested Jacana. There are fewer than 100 Jacana in this wetlands pocket of NSW and the Stork is even rarer, explaining their endangered and vulnerable status in NSW.

The Bungawalbin Catchment covers 1,770 km^2 on a tributary of the Richmond River 4km south east of Coraki. The catchment sustains up to a third of the NSW breeding population of Black-necked Stork, previously known as the Jabiru. The Comb-crested Jacana is listed as vulnerable in NSW under the *Threatened Species Conservation Act 1995*.

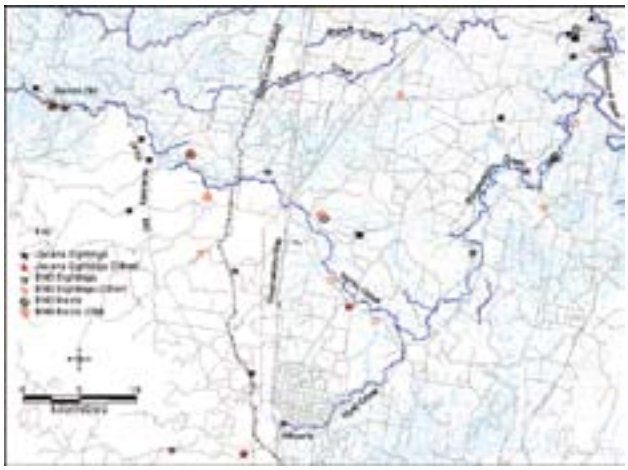
Three projects are underway in the Bungawalbin:

1. The NSW EPA Environmental Trust Lower Bungawalbin Riparian Restoration Project

This project has provided $93,000 over three years to help redress environmental problems in the area, including stream bank erosion, turbidity, weeds, the loss of riparian vegetation, and declining water quality in the lower Bungawalbin and Sandy Creeks.

The Bungawalbin Catchment Management Group instigated the project and WCA provides management and oversight. The project engages local landowners with property fronting Bungawalbin Creek between Yarringully Nature Reserve and the Richmond River, and Sandy Creek between the Coraki-Ellangowan Road and the Bungawalbin Creek confluence.

The project has been particularly successful in building fencing to restrict stock access to the region's fragile riparian zone. Fencing was constructed and weeding undertaken by a dedicated Green Corps team for the first six months, aided later by contractors and available EnviTE bushland regeneration teams. So far 8,000m of riparian fencing has been completed, with a further 5,600m supplied and awaiting



Map of Black-necked Stork and Jacana sightings showing Bungawalbin Catchment.

construction. Funds remain for another 2,000 m with an additional 500m being planned. The community has been kept informed by regular local media articles, a public meeting, and a weeds field day. All of these activities are designed to raise awareness of the importance of healthy riparian vegetation and improved water quality.

The main challenge has been to convince landowners of the benefit of fencing and re-vegetating stream banks. Fencing off stream banks can sometimes be perceived as a loss of grazing land and stock water supply. However, fencing has prevented stock losses from cattle falling into creeks. Drowned stock are a significant economic loss to farmers, while bogged cattle take up a farmer's time and escaped cattle can cost both time and money.

2. The Myer Foundation's Wetland Health Project

The Myer Foundation provided $27,000 to address community concerns about poor water quality in the lower Bungawalbin and Sandy Creeks. The Bungawalbin region contains areas of extensively drained backswamps (a type of coastal floodplain swamp). These backswamps have become

EnviTE team and landholders working to restore the Bungawalbin Catchment
Photograph: Garry Owers, WetlandCare Australia

The Bungawalbin Catchment. Photograph: courtesy of Gary Owers

acidified from exposing and draining the underlying, naturally occurring acid sulfate soils of the area. These areas channel poor quality water into the creeks during flood. Water quality problems include acidity, toxic metals, and a phenomenon called "anaerobic black water". Black water has the potential to strip all oxygen from the water and rapidly kill all gilled aquatic organisms, while acidic water can both kill and cause chronic effects such as red spot disease (epizootic ulcerative syndrome) in fish.

Black-necked Stork
Photograph: Justine Graham, Staff WetlandCare Australia

The Bungawalbin Catchment Management Group initiated the project in 2004. Initially managed by Southern Cross University, it was transferred to WCA in January 2005. The Kookami Swamp was a priority target in this catchment because it is a significant source of 'poor water quality', and very little was known about the wetland and its ecological character.

A network of artificial drains were dug into the swamp, which discharges into Sandy Creek. Because virtually nothing was known of how the swamp functions and what was causing the decline in water quality, it was considered essential to get reliable information. The project therefore sought landowner permission to carry out vegetation and elevation surveys. The surveys aimed to map the micro relief of the swamp and determine the effect of groundwater manipulation. By installing weirs and raising groundwater levels, the oxidation of potential acid sulfate soils should slow, while raised groundwater should encourage wetland pasture species to colonise. Wetland pasture species can tolerate periods of flooding, thereby reducing black water discharge and improving water quality in Sandy and Bungawalbin Creeks and the Richmond River.

The main challenge of the project was the size and remote location of the swamp, with access only by four-wheel drive vehicle during dry periods. A minor flood at the beginning of the project and a major flood towards the end prevented access and delayed completion. The flat terrain and lack of trees and shrubs also left the area prone to strong winds, making accurate surveying difficult as equipment was buffeted by wind. The one thing that was not a challenge during the project was the landowners. All landowners were aware of the downstream and on-farm environmental issues and were keen to change their management in order to improve the environment.

3. The Black-necked Stork and Comb-crested Jacana Project

This project was developed by the Bungawalbin Catchment Management Group and handed over to WCA for implementation. The NSW Government's State Wetland Advisory Committee (SWAC) and the NSW Department of Infrastructure, Planning and Natural Resources (DIPNR) provided $18,000 over six months to support the project.

During the project all Black-necked Stork and Comb-crested Jacana sightings, and nest sightings, were mapped. Landholders received information and fact sheets explaining the importance of the two species and their habitat requirements. Site visits and surveys followed involving landholders who were keen to participate and, with their co-operation, wetland management plans were developed to protect and enhance habitat. Ground works were undertaken on one property using an EnviTE team to assist with tree planting. Four hundred trees and herbs were planted in an area adjoining a large dam used by Black-necked Stork and, hopefully, Jacana.

The Bungawalbin is a naturally rich and diverse wetland. It is home to some unique Australian wildlife and also provides benefits to its nearby and downstream communities. The benefits derived from these projects will continue to play an important role in creating healthier and more sustainable wetland and river systems throughout the Bungawalbin Catchment. But perhaps the biggest factor for continuing success is that by gaining active community support and increasing the insight and participation of locals in sustainable land use practices, the people who live by the catchment have a real stake in protecting and directing its future. In conjunction with rehabilitation projects, a healthy future for the Bungawalbin and all its inhabitants is on the cards.

Fencing to restrict stock access to the region's fragile riparian zone.
Photograph: courtesy of WetlandCare Australia

SHOREBIRD CONSERVATION PROJECT—A NEW PHASE (2005–2007)

Bianca Priest
WWF-Australia

WWF-Australia (World Wide Fund for Nature) is developing a national Shorebird Conservation Toolkit to help protect and enhance shorebird habitat across Australia. The Toolkit project has received funding from the Australian Government Natural Heritage Trust, in recognition of its value for shorebird conservation projects.

The Toolkit builds on the success of the national Shorebird Conservation Project (2001–2005) by capturing information, resources and lessons learnt from more than 31 on-ground and community-driven shorebird conservation projects undertaken during the past four years. The Toolkit will assist NRM facilitator networks, conservation groups, community groups, local government, and state conservation agencies with information and resources to develop and implement their own shorebird conservation projects.

In particular, the Toolkit aims to provide information and resources that enables users to:

- understand and appreciate shorebirds, their habitat and conservation needs;
- locate important shorebird sites in Australia and access population estimates;
- develop site survey and monitoring programmes;
- identify and assess site management needs, and implement and evaluate management actions;
- write grant applications, site communication plans and media releases;
- access existing resources such as signs, brochures, case studies, posters, images, presentations, designers, printers and media;
- identify and advocate conservation options internationally and nationally; and
- access organisations with knowledge and expertise in practical shorebird and wetland conservation.

The Toolkit will be produced as part of a new collaboration between WWF-Australia, the Hunter Wetland Centre, The WET Program (Sydney Olympic Park Authority), Banrock Station Wine and Wetland Centre, Regional Ecosystem Services (comprising MainStream Environmental Consulting, Water's Edge Consulting and Jennifer Hale Consulting), Wetlands International-Oceania, and Wetland Care Australia. As a result of this collaboration, these organisations have agreed to form the Wetland Management Solutions Network (see article on page 21).

The Toolkit will be available in early 2006. For further information, or to request a copy, please contact Bianca Priest, National Coordinator—Shorebird Conservation Project on <bpriest@wwf.org.au> or 03 6225 1394 / 0413 300 797.

Angalarri River, Northern Territory. Photograph: Roger Jaensch

WETLAND MANAGEMENT SOLUTIONS: BUILDING REGIONAL AND LOCAL CAPACITY FOR WETLAND MANAGEMENT

Christine Prietto
Hunter Wetlands Centre Australia

A unique partnership for wetland conservation has begun in Australia.

This partnership links a group of four related projects that will map a new approach to the provision of information and training for wetland management.

The concept was launched in a joint ministerial announcement on 19 October, 2005, as part of the National Competitive Round of funding under the Natural Heritage Trust.

Wetland Management Solutions (WMS) is a coalition of wetland management organisations (non-government organisations) and experienced professionals. Together they will offer a comprehensive portfolio and blend of wetland management expertise that will be made available to regional and urban Australia to support the on-ground management of inland and coastal wetland assets.

The partners in Wetland Management Solutions are:

- The Hunter Wetlands Centre Australia;
- The WET Program (Sydney Olympic Park Authority);
- Banrock Station Wine and Wetland Centre;
- Regional Ecosystem Services (comprising MainStream Environmental Consulting, Water's Edge Consulting and Jennifer Hale Consulting);
- WetlandCare Australia (WCA);
- World Wildlife Fund Australia (WWF-Australia); and
- Wetlands International—Oceania (WI-O)

The restructuring of natural resource management (NRM) in Australia has raised the challenge of providing the NRM regional groups and their stakeholders with high quality wetland management related advice and information. The coalition partners believe that collaborating to meet this challenge will improve wetland asset management at the local scale.

Through this innovative partnership, WMS will collaborate on developing and delivering practical wetland management tools and products suitable for regional NRM bodies, local governments, communities and landholders across Australia.

WMS comprises four complementary project elements summarised below. While the partner organisations will manage separate but complementary national wetland projects, they will also maintain a coordinating committee to maximise the contribution of individual projects to the national spread of advice, information and training.

The four projects are:

1. Building a national, self-funding, wetland management training program

(Hunter Wetlands Centre Australia, WET Program of Sydney Olympic Park Authority, Banrock Station Wine and Wetland Centre and Regional Ecosystem Services, comprising MainStream Environmental Consulting, Water's Edge Consulting and Jennifer Hale Consulting)

This three year project will develop a national wetland management training programme designed to support skills acquisition by regional NRM and catchment bodies, and their stakeholders. The training will be delivered primarily by developing and delivering targeted training products at established wetland centres and other suitable venues.

Project Contact: Bill Phillips <mainstream@mainstream.com.au>

2. WetlandLink (WCA)

This three-year project will pilot the provision of targeted wetland management information to landholders on the NSW coast in collaboration with the relevant Catchment Management Authorities (CMAs). The Wetland Care information will support and add value to existing land management incentive programs run by the CMAs.

Project Contact : Liza Schaeper <Liza.Schaeper@irpec.com.au>

3. Shorebird conservation 'toolkit' (WWF Australia)

This two year project will build on the success of the national Shorebird Conservation Project (2001–2005) by capturing information, resources and lessons learnt from more than 31 on-ground and community-driven shorebird conservation projects undertaken during the past four years. The toolkit will target conservation practitioners such as facilitator networks, conservation and community groups, local government and state conservation agencies.

Project Contact: Bianca Priest <bpriest@wwf.org.au>

4. Enhancing recognition and management of important wetlands in remote regions (WI – O)

This three year project will support priority, remote NRM regions across Australia in terms of their international and nationally important wetland assets. Working closely with the regional bodies, WIO will transfer skills on recognition and management of these assets through one-to-one, on-site consultation at regional centres and important wetland sites.

Contact: <Roger Jaensch roger.jaensch@wetlands-oceania.org>

Over the coming three years the Wetland Management Solutions partners will develop and pilot test a range of information transfer approaches, progressively scaling up toward a full national roll-out of training options tailored to address regional and local issues and needs. The partners will cooperate in developing information and education products, approaches and tools for wetland management at the local scale. For more information on WMS contact one of the project contacts listed above.

A UNIQUE NATIONAL COLLABORATION TO CONSERVE SHOREBIRDS

Alison Beard
Migratory and Marine Species Section
Australian Government Department of the Environment and Heritage

The Australian Government is finalising a new conservation plan for migratory shorebirds.

Shorebirds travel huge distances each year across many countries and visit many habitats to support their feeding, resting and breeding. For the migratory shorebirds seen in Australia, this journey is along the East Asian-Australasian Flyway. Conserving these species requires the involvement and coordination of a diverse array of interested parties, including Government agencies, non-government organisations, research groups, industry, community groups and volunteers from many countries.

At the time of publication, the Australian Government, in consultation with interested groups and individuals, was finalising a *Wildlife Conservation Plan for Migratory Shorebirds*. The Plan aims to build on existing conservation achievements, and provide a coordinated approach for conserving migratory shorebirds into the future.

What is the Plan?

The Australian Government Department of the Environment and Heritage has been preparing the Plan, which provides a framework for national action to support conservation of migratory shorebirds across the East Asian-Australasian Flyway. It also sets out the research and management actions necessary to support migratory shorebird survival.

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), identifies, as a matter of national environmental significance, the migratory species that Australia protects under various international agreements and conventions. The EPBC Act provides for developing and implementing Wildlife Conservation Plans to protect, conserve and manage listed migratory species. The species must not be considered "threatened" (threatened species are covered by other provisions), but considered to benefit from a nationally co-ordinated approach to their conservation.

East Asian-Australasian Flyway

The Plan is supported by a background paper that outlines the conservation activities underway in Australia. It also provides information on the biology and population status of, and threats to, migratory shorebirds covered by the Plan.

What are the proposed objectives?

The proposed objectives of the *Wildlife Conservation Plan for Migratory Shorebirds* are to:

1. increase international cooperation for migratory shorebirds and ensure that countries in the East Asian-Australasian Flyway work together to conserve migratory shorebirds and their habitat;
2. identify, protect and sustainably manage a network of important habitat for migratory shorebirds across Australia to ensure that healthy populations remain viable into the future;
3. increase biological and ecological knowledge of migratory shorebirds, their populations, habitats and threats in Australia to better inform management and support the long-term survival of these species; and
4. raise awareness of migratory shorebirds and the importance of conserving them, and increase the engagement of decision-makers and the community in Australia in activities to conserve and protect migratory shorebirds and their habitat.

What are the proposed actions under the plan?

The Plan proposes many actions. These include support for developing a multilateral Partnership, and leading the development of a new Flyway Action Plan for 2006–2010. The Partnership has been developed under the auspices of the World Summit on Sustainable Development, and is also a regional initiative under the Ramsar Convention on Wetlands. The Partnership is specifically for the conservation and sustainable use of sites of international importance for migratory waterbirds in the East Asian-Australasian Flyway.

The Plan also proposes developing, at a national level, a population monitoring protocol, communication strategy, and criteria for determining sites of national significance. It encourages mapping important sites and sub-sites for shorebirds. It calls for preparing supplementary administrative guidelines on significance under the EPBC Act, and developing guidelines for site managers (including local government, state/territory government and private land owners). Finally, it aims to promote engagement of community members in migratory shorebird conservation activities.

What are the existing activities?

The Plan builds on a wide range of conservation efforts being delivered and implemented by interested agencies, organisations and community members. The successful implementation of the Plan relies on the continued involvement of these groups, and the use of existing materials, in collaboration with the proposed new actions.

The Plan is informed by the Asia-Pacific Migratory Waterbird Conservation Strategy and its component Action Plan for the Conservation of Migratory Shorebirds in the East Asian-Australasian Flyway. Under this existing framework, the East Asian-Australasian Shorebird Site Network was established to

provide an international mechanism for migratory shorebird conservation. There are currently eleven Australian sites in the Network (see information box 1).

A number of tools that provide valuable information to assist in migratory shorebird conservation have also been recognised in the Plan. These include the Australian Wetlands Database (including nationally and internationally significant wetlands), the migration research programme and colour flagging protocol, and the Feathers, Friends and Flyway website.

How is the Plan being developed?

As this is the first Wildlife Conservation Plan prepared under the EPBC Act, the Department has undertaken a series of comprehensive consultation phases with a range of interested stakeholders over the past two years. Consultation has included preparing an issues paper in early 2004, followed by a preliminary draft Plan. This draft was discussed at a series of public forums throughout Australia from May to August 2005, and was presented to the Natural Resource Management Ministerial Council (NRMMC) Wetlands and Waterbirds Taskforce. Following the public forums, a draft of the Plan was available for a three month formal consultation phase, which closed in mid-November 2005.

Comments received during public consultation have been considered and a final draft Plan presented to the Threatened Species Scientific Committee (TSSC), which advises the Minister for the Environment and Heritage on Recovery Plans, Threat Abatement Plans, and Wildlife Conservation Plans. At the time of publication, the Minister was considering the advice of the TSSC in relation to the Plan.

Further information

The draft Plan and associated Background Paper can be downloaded from the following website <www.deh.gov.au/biodiversity/migratory/waterbirds/shorebird-plan/index.html>.

For further information about the Plan, please contact the Migratory and Marine Species Section or visit the migratory waterbirds website <www.deh.gov.au/biodiversity/migratory/waterbirds/index.html>.

For further information about the EPBC Act and Migratory species, please visit <www.deh.gov.au/epbc/species/index.html>.

Red-necked Stint. Photograph: Clive Minton

Great Knot. Photograph: Clive Minton

Eastern Curlew. Photograph: Clive Minton

Information box 1: The Australian sites of the East Asian-Australasian Shorebird Site Network

There are currently eleven sites included in the network:

1. Kakadu National Park, NT
2. Parry Lagoons, WA
3. Thomson Lake, WA
4. Moreton Bay, QLD
5. Koorgang Nature Reserve, NSW
6. Corner Inlet, VIC
7. The Coorong, SA
8. Orielton Lagoon, TAS
9. Logan Lagoon, TAS
10. Western Port, VIC
11. Port Phillip Bay, VIC

CHEETHAM WETLANDS—FACING A NEW INVASION: URBAN ENCROACHMENT

Libby McIntyre
Revive CVA

The area surrounding the 420 ha Ramsar-listed Cheetham Wetlands, on the western shores of Port Phillip Bay, is experiencing a residential explosion. The rapidly expanding City of Wyndham is on its doorstep, with the Sanctuary Lakes project the largest of these nearby residential developments.

Only 20km south-west of Melbourne, the wetlands are highly vulnerable to the inevitable impacts of the fast-growing residential encroachment, in a region which has been planned to accommodate the growing population of Melbourne's west.

Some of these threats include:

- impact on water quality from stormwater treatment and drainage and hard pollution;
- a number of invasive weeds, particularly Boxthorn;
- feral animals such as the Red Fox;
- domestic animals allowed to wander;
- disturbance of migratory shorebirds and their habitat from human activities such as walking dogs and riding trail bikes;
- local residents not being aware of wetland values and the importance of this site; and
- the *possible* installation of a new bike path around the edge of the wetland which will allow on-lead dog walking through the Ramsar listed site. This is likely to result in further disturbance for shorebirds.

The wetlands, which combine natural and artificial lagoons, are designated as Crown Land for conservation purposes and are managed by Parks Victoria. However, there are a number of neighbouring land management agencies (including the City of Wyndham and Melbourne Water) and stakeholder groups (such as the Victorian Wader Study Group, Birds Australia, the Point Cook Residents Association and most recently, the National Shorebird Conservation Programme) with a vested interest in managing the wetlands for a range of conservation purposes.

The wetlands currently support significant populations of seven species of shorebirds, including the Red-necked Stint (*Calidris ruficollis*), the Sharp-tailed Sandpiper (*Calidris acuminata*) and the Double-banded Plover (*Charadrius bicinctus*), along with nationally significant populations of the Common Greenshank (*Tringa nebularia*) and Marsh Sandpiper (*Tringa stagnatilis*).

Cheetham Wetlands is one of 10 sites chosen as a Revive Focus project to receive on-ground assistance from 2004 to 2006. The major aims of the project are to:

BHP Billiton Science Award Students removing Boxthorn at Cheetham Wetlands
Photograph: courtesy of Libby McIntyre

- engage the local community in 'hands-on' conservation works to change attitudes in relation to wetlands and their value;
- restore habitat for the endangered Orange-bellied Parrot (*Neophema chrysogaster*) and many species of migratory and other wetland birds;
- improve water quality by removing weeds and allowing natural regeneration of endemic species; and
- reduce litter and, in conjunction with Birds Australia, help record data provided from sand pad surveys to monitor human use/activity.

Mayar Magar (left) and Cliff Robinson carry out plant maintenance in the Pallarenda Nursery. Seedlings are grown from native seed collected at the Town Common. Photograph: courtesy of Libby McIntyre

Revive Our Wetlands teams have been working one day a week on this site since November 2003 and have achieved some exceptional results. Volunteer team members are people from the broader Melbourne region who want to make a positive contribution to the environment. They say being part of a regular program on the same site has made it absolutely worthwhile. Many of the volunteers make such comments as '*We are really enjoying the project and feel we are achieving something*' and '*I loved getting away from the city although I could still see it!*'

The majority of work has involved removing invasive weeds such as Boxthorn and Boneseed to allow natural regeneration of the saltmarsh species that the Orange-bellied Parrot and other species feed on. The improvement in habitat has been immediate, with a Parks Victoria ranger saying that '*the Revive volunteer teams have progressed our Weed Management Action outcomes by up to three years in just over 12 months*'.

Volunteers Take Ownership—The "Common Interest Project"

Over the past five years, thousands of volunteers around the nation have continued to join forces with BHP Billiton employees to help repair and protect wetlands through the Revive our Wetlands Program. The program was established by Conservation Volunteers Australia (CVA) and BHP Billiton in 2000 and is the largest national wetland rehabilitation program in Australia.

In July 2000, the pilot programme for Revive our Wetlands was launched at the Townsville Town Common Conservation Park, located adjacent to the town. The community took up the challenge to restore the site. From this beginning, a three-way partnership between Revive, the local community and Queensland Parks & Wildlife Service was developed to implement the project. Named the *Common Interest Project*, its main aims are to address the environmental degradation of these important wetlands, including native habitat decline and loss of biodiversity. It has been a very successful project, with regular volunteer teams on site two days a week—the program has achieved significant environmental and social outcomes.

The Town Common Conservation Park comprises 3 500 ha with up to six different ecosystems, all of which have been heavily affected by exotic plants and feral animals. It is an important wetland for the Spring-Autumn migration of birds from Asia and for the north-south migration of colonial birds within Australia. It provides important habitat for 26 species of birds listed under the Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA and CAMBA, respectively) and is the feeding ground for the Clamorous Reed-warbler (*Acrocephalus stentoreus*).

The project has provided more than 5 000 volunteer days in five years. Weeds have been the major focus, and volunteers have made an immense effort to eradicate these in a number of areas on the site including: Barramundi Island, Pink Lily and Jacana Lagoon and the Freshwater bird hide. The project has restored valuable native habitat for migratory and colonial birds, passed on valuable new skills to local volunteers in wetland conservation, increased awareness of the importance of wetlands and heightened community ownership of this important local asset.

This has been a wonderful opportunity for people to make a difference in their own area. Volunteer teams have worked on weed control, seed collection, plant propagation, revegetation, fencing, flora and fauna surveys and track work—all of which have continually improved the natural biodiversity of the Common. Several volunteers have helped since the program's inception and are now very experienced in a range of wetland conservation skills.

The *Common Interest's* success has been built on considerable commitment of volunteers. Volunteers enjoy the satisfaction of knowing that areas have been rehabilitated and natural biodiversity returned.

As regular volunteer Dave Bailey put it, they "*see indigenous grasses and animals return to an area once devoid of native vegetation and choked by exotic weeds—it is very gratifying and fulfilling and to do this with other volunteers, both local and sometimes international, it adds to the overall enjoyment*".

With continuing support from volunteers, BHP Billiton, the Queensland Parks & Wildlife Service, Townsville City Council and traditional owners, the Common is an icon of community action to preserve the wetland for Townsville and now has important regional and national significance.

The Town Common project facilitated by CVA, was rewarded after five years of solid work when it received the Environmental Excellence Award from Townsville City Council in the Community Group category; the award was presented on World Environment Day 2005.

QUEENSLAND WETLANDS RECEIVE NEW RECOGNITION

Mr Greg Miller
Manager—Coastcare

Four Queensland wetlands have been nominated to help safeguard shorebirds migrating from as far as Siberia and Alaska.

The Queensland Environmental Protection Agency (EPA), in association with Wetlands International (WI), has nominated four wetlands to the Australian Government Department of the Environment and Heritage (DEH) for listing with the East Asian-Australasian Shorebird Site Network (EAASSN). These sites are: Great Sandy Strait, Shoalwater Bay, Bowling Green Bay and Currawinya National Park.

The goal of the network is "*to ensure the long term conservation of migratory shorebirds in the East Asian-Australian Flyway through recognition and appropriate management of a network of internationally important sites.*"

The EAASSN was developed under the Asia-Migratory Waterbird Conservation Strategy: 1996–2001 and its 2001–2005 extension period. Listing an EAASSN site is voluntary and does not limit wetland access, requires no specific management plans (existing management plans are sufficient), no financial or reporting commitments, is non-punitive and is intended to enhance the public awareness of wetlands and wetland issues. This network recognises the significant wetlands forming links in the chain of wetlands supporting the annual flights of migratory shorebirds from Australia and New Zealand along the Asian coast and up to breeding sites in the Russian Far East and Alaska.

Queensland has many wetlands that offer refuge to migrating shorebirds, however, these four wetlands were selected as being outstanding examples of the EAASSN wetlands and join our other EAASSN representative, Moreton Bay in the network.

All nominated sites are internationally significant being partly or wholly within Ramsar sites, while at a national level they are included in *A Directory of Important Wetlands in Australia*. Two are within the Great Barrier Reef Marine Park (GBRMP) and, at the state level, contain Marine Parks and National Parks.

The sites are widely separated in Queensland with Currawinya being 900km from the east coast and Shoalwater Bay being 500km north of the Great Sandy Strait and 500km south of Bowling Green Bay. As a result, the wetland characteristics also vary considerably. Although these sites are significant for species other than migratory shorebirds this article will refer only to the sites' EAASSN shorebird values.

A summary of each site's characteristics:

Great Sandy Strait

Great Sandy Strait is large, covering a 93,160ha, shallow, tidal strait that abuts the World Heritage Area of Fraser Island to the east, and is 70km long and 15km across at the widest point. Marine vegetation includes nine species of mangroves covering 15 500ha, six species of seagrass beds over 12 300ha and 2800ha of salt marshes and extensive non-vegetated mud, sand and salt flats within an estuarine and marine channel network. The site supports more than 50,000 wader birds including (approximately) the following proportion of flyway populations: 23.8% of the Eastern Curlew (*Numenius madagascariensis*), 19.7% of the Lesser Sand Plover (*Charadrius mongolus*), 9.8% of Bar-tailed Godwit (*Limosa lapponica*) and several other species with more than 1 % of the flyway population. Great Sandy Strait supports the second largest wader population in Queensland after the southern Gulf of Carpentaria area and slightly more than Moreton Bay.

Shoalwater Bay

Shoalwater Bay covers 22,310ha and is also a Ramsar site within the GBRMP. Some of the site also receives additional protection because as Department of Defence land unauthorised entry is prohibited. The site's biodiversity is enhanced by its location on the boundary of tropical and subtropical regions. Migratory species significant at a flyway level include the Whimbrel (*Numenius phaeopus*) (12.9%), Eastern Curlew (7.5%), Grey-tailed Tattler (*Tringa brivipes*) (7.5%), Terek Sandpiper (*Tringa terek*) (6.0%). Several other species, the Great Knot (*Calidris tenuirostris*) and Bar-tailed Godwit, exceed 1% of the flyway population. A total of 26 bird species listed under the Japan-Australia Migratory Bird Agreement (JAMBA), and 27 listed under the China-Australia Migratory Bird Agreement (CAMBA), occur within the site.

Bowling Green Bay

The Bowling Green Bay EAASSN site includes Cape Bowling Green, Bowling Green Bay Dugong Protection Area and EPA National Parks. The marine and estuarine areas are within the GBRMP. Consequently, these various protection areas, while covering the entire site, also overlap each other in some locations. Migratory wader species with more than 1% of the flyway species include the Red-necked Stint (*Calidris ruficollis*) (1.5%), Bar-tailed Godwit (1.4%), and Black-tailed Godwit (*Limosa limosa*) (1.3%). Also within the site, on Cape Bowling Green, are breeding roosts for 2 000 to 3 000 white-winged Black Tern (*Sterna leucoptera*) and occasionally similar numbers of Little Terns (*Sterna albifrons*). Around 50% of both JAMBA and CAMBA listed species occur within the site.

Currawinya National Park

Currawinya National Park, covering 151 300ha, differs from the previous sites considerably. The site was selected to emphasise the significance of inland sites for some migratory "shorebird" species. Currawinya NP is situated 900km from the east coast, within an arid region (average annual rainfall of 276mm). This site contains many scattered ephemeral wetlands, a few springs and two large water bodies, freshwater Lake Numulla and nearby saline Lake Wyara. These lakes can be considered permanent wetlands except in extreme droughts that occur a few times in a century.

In response to random droughts, the bird populations exhibit boom and bust episodes typical of the central region of Australia. This site consistently supports up to 100,000 waterbirds, with highs of 280,000, from 59 species. Extreme drought reduces the site's waterbird population to very low numbers. Sharp-tailed Sandpipers (*Calidris acuminata*) recorded in this site represent 1.25% of the flyway population.

An aerial view of Currawinya. Photograph: courtesy of Greg Miller

In periods of high water levels, many bird species from the coast breed in this site. Examples of these species include Australian pelican (*Pelecanus conspicillatus*), Red-necked Avocet (*Recurvirostra novaehollandiae*), Royal Spoonbills (*Platalea regia*), Yellow-billed Spoonbill (*Platalea flavipes*) and White-necked Heron (*Ardea pacifica*).

Conclusion

The EAASSN establishes a framework to raise public awareness of significant shorebird sites with the East Asian-Australasian Flyway, both nationally and internationally, promotes conservation of these sites and encourages stakeholder co-operation in achieving these goals. The EAASSN initiative supports shorebird conservation strategies; development of action plans for shorebird species-groups and networks at a national and international level to achieve this. These four sites represent a wide variety of wetland characteristics and will enhance wetland and shorebird management within Queensland, Australia and internationally within the East Asian-Australasian Flyway.

RIVERS, WETLANDS & FLOODPLAINS—TRASH OR TREASURES

Sue Jones
Co-ordinator, Sustainable Floodplain Communities Association

A new group has been formed to help protect our rivers, floodplains and wetlands and the people who rely on them for their livelihood.

The Australian Floodplain Association, or AFA, will link and assist landholders (mainly graziers and dry land farmers) and their communities with scientists, government and conservation groups in an effort to sustainably manage riverine floodplain environments. The AFA held its inaugural national conference on 21–22 September 2005 at Dubbo NSW. The theme of the Conference was *Rivers, Wetlands & Floodplains—Trash or Treasures.*

The main purpose of the conference was to highlight the values of rivers, wetlands and floodplains. It also highlighted the needs of floodplain communities and the impacts and threats they now face. It brought together scientists and landholders to share knowledge and understanding of numerous river systems.

There was a wide cross-section of speakers from several states including landholders, scientists, politicians, natural resource managers and community members, with many important contributions coming from the floor. The quality of the presentations and the passion of the speakers was quite exceptional. Unfortunately, the picture coming from most of the speakers was not a good one, with many showing in graphic detail the damage being done to our floodplains and wetlands by poor management. There were a few 'good news' stories, which highlighted the need to better protect the few free flowing rivers and streams we still have.

While farmers and graziers are often all too keenly aware of floodplain issues, there hasn't really been a body, until now, which brought them together with the scientists and officials who could help assess and act on issues.

A number of important issues were identified at the conference including, water, river, floodplain and wetland management. Agreement was also reached to form the *Australian Floodplain Association,* comprising the individuals and their affiliated organisations that depend on, or are committed to providing natural river flows for ecologically healthy and sustainable floodplains and wetlands.

Some of the issues raised during the conference included:

- protecting unregulated flows and free flowing rivers and streams;
- water planning to be undertaken at a catchment/basin scale;
- implementing the Murray-Darling Basin Cap on rivers and their floodplains;
- scrutinising and managing current, and a moratorium on additional, levee banks and on-farm storages for irrigation and water harvesting;
- acquiring water for floodplain environments (including purchase of extractive licenses);
- water savings from government funded water use efficiency projects to be exclusively dedicated to the environment;
- including the terms floodplain and overland flows in all water acts, legislation and policies;
- recognising connectivity between rivers and floodplains in both legislation and policy;
- developing emergency rescue packages for already stressed areas;
- recognising floodplain graziers as having legitimate water needs; and
- acknowledging the conservation value of rivers, floodplains and wetlands.

The conference proceedings are available. If you would like a copy of these or would like more information on the Association, please contact Sue Jones on 02 6824 2097 or email: <jones.j11@bigpond.com>.

NSW RAMSAR MANAGERS NETWORK UPDATE

Robyn Molsher
Conservation Ecologist, Department of Environment and Conservation, NSW, Dubbo

The NSW Ramsar Managers Network (RMN) is a group of private landholders and government representatives involved in managing Ramsar wetlands in NSW (see Wetlands Australia Newsletter, Issue 13, 2005). Established in 2003, the RMN aims to support private and community Ramsar site managers by better linking them to information and resources within government. The group has been seeking to raise the awareness of the value of wetlands and the Ramsar Convention in NSW, and to assist land managers to maintain the ecological character of Ramsar wetlands on private land. The main issues which the RMN addressed during the past two years are:

1. *Water*—adequate and appropriately managed shares are required;
2. *Funding*—increased support and access to funding for identified management actions; and
3. *Weeds*—greater support required for the control of Lippia, Alligator Weed, and Water Hyacinth.

Update on activities since the last edition of Wetlands Australia

- The NSW Wetlands Recovery Plan was launched in late 2005. The Plan consists of a suite of projects developed to deliver long-term and permanent benefits to ecologically significant wetlands through water efficiency projects, water buy-back, and projects to improve wetland management in the Macquarie Marshes and Gwydir Wetlands. The NSW Government has committed $13.4 million to the Plan and is seeking matching funds from the Australian Government Water Fund (see article page 9).
- The NSW RMN and relevant stakeholders met in Dubbo in October 2005 to provide an update on recent actions they have undertaken to assist the Ramsar Convention to achieve its potential on private land. Twenty-six representatives from the private and community owned Ramsar sites in NSW, plus officials from the NSW Department of Environment and Conservation (DEC), the NSW Department of Natural Resources (DNR), Forestry NSW, the Australian Government, WWF-Australia, and Catchment Management Authorities (CMAs) attended. Both Directors-General from DEC and DNR were also able to attend.
- The NSW Riverbank Fund was also announced in late 2005. The Fund is a new $105 million environmental fund set up by the NSW Government to buy water for stressed inland wetlands and rivers during the next five years, including the Lowbidgee Floodplain Wetlands and the Macquarie Marshes, Narran Lakes, and Gwydir wetlands Ramsar sites (http://www.environment.nsw.gov.au/education/nswriverbank.htm).
- Natural Heritage Trust funding was received to continue the NSW Ramsar Wetlands Communication Program. This important work seeks to raise the awareness of the value of wetlands and Ramsar within the NSW community and across government. Funding was also received to carry out projects such as weed control, erosion control, community capacity building.

Marshwort Nymphoides crenata. Photograph: Roger Jaensch

Lalngang Creek, Northern Territory. Photograph: Roger Jaensch

Since the RMN was established in 2003, more than $132 million has been committed to improve the condition of wetlands in NSW.

For further information, please contact the RMN Coordinator (Robyn Molsher, DEC, (02) 688 35338 robyn.molsher@environment.nsw.gov.au) or the RMN Chair (Eric Fisher, Macquarie Marshes, Kipsy1@bigpond.com).

RAMSAR EDUCATION AWARD FOR AUSTRALIAN WETLAND CENTRE

Christine Prietto
Representing Hunter Wetlands Centre Australia

The team at the Hunter Wetlands Centre Australia.
Photograph: courtesy of Cristine Prietto

In November 2005 I attended the 9th Conference of Contracting Parties (COP) to the *Convention on Wetlands of International Importance, especially as Waterfowl Habitat* (the Ramsar Convention) in Kampala, Uganda as a non-government observer representing the Hunter Wetlands Centre Australia (HWCA), formerly Shortland Wetlands Centre.

HWCA, in the Hunter Region of NSW, was selected as co-winner of the inaugural Ramsar Award for Education, sharing the prize with Ms Reiko Nakamura, manager of the Ramsar Centre Japan and the initiator of the highly regarded Asian Wetlands Symposium.

HWCA was recognised for its pioneering role in the integration of communication, education and public awareness activities with restoring and managing Shortland Wetlands and its success in building links with other wetland centres in Australia.

Our prize includes a sculpture, a cash prize of $5000 USD and a small jewel brooch especially designed by an artist in Geneva for the Ramsar Prize. Our prize money will help us to improve the interpretation material at our site. We will of course continue our close association with the Ramsar Convention and will proudly promote our award wherever and whenever possible.

The Ramsar Convention is an inter-governmental convention focused on the conservation and wise use of wetlands. The convention holds a Conference of the Contracting Parties every three years to allow its 150 member countries to review and promote the Convention. The Ramsar Prize, awarded at each COP, is a relatively new initiative for the 34 year old Ramsar Convention. Past award winners have included wetland scientists, site managers and private sector organisations supporting wetland conservation. This year the introduction of a new education category highlights the increasing recognition of the value of education and what it contributes to wetland conservation efforts worldwide.

In receiving this award in front of an international audience HWCA was in august company. Receiving the award alongside highly regarded wetland scientists such as Dr Shuming Cai of China was truly an honour. Although HWCA is a relatively small organisation in the scheme of things, it provides an excellent example of the contributions which can be made by local communities working in their local wetlands. It also confirms that contributions towards meeting objectives of an international agreement like the Ramsar Convention can be delivered on many levels.

The Hunter Wetland Centre's award belongs to all the people who have been a part of the organisation over the years, members, staff, sponsors and volunteers. The award recognises 20 years of work by many people to restore a small area of wetland and to create a place where people can enjoy a direct wetland experience while learning about the values of wetlands.

Wetlands are wonderful teachers. During those years that Shortland Wetlands was being transformed from football grounds surrounded by degraded wetlands to a Ramsar listed wetland, our people learned many things. As managers we have had on-the-job training and been able to build our own capacity to understand and manage for the values of our patch of wetlands and to translate the language of the wetlands for visitors to the site. We have shown leadership in involving ordinary people in wetland restoration work and become an advocate for wetlands in our region and beyond.

Our award secures recognition for other initiatives like ours worldwide but also for wetland centres in general. There are more than 400 wetland centres worldwide and around 20 such facilities in Australia so it is wonderful to be able to represent this group. It is widely agreed that there is a big job to be done to turn around the loss of wetlands, nationally and internationally. Education initiatives of all shapes and sizes can help with that job, but education needs to be recognised as a broad range of strategies from awareness building to capacity building. Most importantly education needs to be sufficiently funded and integrated into on-ground work. Wetland centres have an important role to play in this endeavour. We look forward to working with other Australian wetland centres to improve the integration of education into wetland conservation work over the next decade.

RAMSAR COP 9: A SHORT REPORT OF AUSTRALIA'S PARTICIPATION

Bruce Gray
Inland Waters Section
Australian Government Department of the Environment and Heritage

Delegates gather for the conference. Photograph: courtesy of Bruce Gray

Lake Victoria. Photograph: courtesy of Bruce Gray

Australia recently participated in the ninth Conference of the Contracting Parties (CoP 9) to the *Convention on Wetlands of International Importance, especially as Waterfowl Habitat* (the Ramsar Convention). The Conference was held on the shores of Lake Victoria at Munyonyo near Kampala, Uganda from 8–15 November 2005.

These meetings are held every three years and each of the Convention's 150 member countries, plus the international organisations involved in the Convention, come together to coordinate international action on wetlands and to formulate international wetlands policy.

CoP 9 was the first of the Convention's meetings in Africa and as such it represents a significant achievement for Uganda as the host country.

The Australian delegation, headed by Mr Tony Slatyer from the Australian Government Department of the Environment and Heritage, was quite small. It included representatives from Australian Government Departments, the NSW Department of Environment and Conservation, and three Aboriginal elders from the Paroo region of north western NSW. Ms Chris Prietto, who heads one of Australia's community-managed Ramsar sites (the Shortland Wetlands in NSW), and a number of other Australians also attended the CoP.

Australia played a number of key roles at the CoP. First and foremost, Chris Prietto was co-winner of the inaugural Ramsar Award for Education (see article page 29). Secondly, Tony Slatyer, the head of Australia's delegation, was elected to the influential role of vice president of the meeting, and later went on to serve as president of the CoP.

Australia successfully co-sponsored two Resolutions (one on methods for identifying traditional cultural values of Wetlands of International Importance, and another on integration across various international treaties and conventions); and two regional initiatives: the Asia-Oceania migratory water birds Partnership (see article page 22-23) and a regional Ramsar capacity building initiative in the Pacific. Australia pursued significant textual revisions on a third decision aimed at securing Ramsar funding in 2006–2008 for an out-posted Ramsar regional support officer for the Pacific. We also delivered our national report.

Working closely with New Zealand and the Pacific Island countries, we were extremely influential in shaping a number of the CoP's major decisions, including agreements on Avian Influenza, the sustainable use of fish resources and the budget for the Ramsar Convention over the next three years.

The traditional elders from the Paroo delivered a first class presentation on the values of the Paroo River Wetlands—a site which is being considered for nomination as a Wetland of International Importance under the Ramsar Convention.

The conference also agreed on revised definitions for several of the Convention's key terms, including ecological character, change of ecological character, and wise use. Australia again played a key role in shaping these decisions. The issue of wetlands and their socio-economic and cultural values was divisive at the last CoP in Valencia, Spain in 2002; and again occupied the thinking of many of the participants at this CoP.

One of the fundamental issues was whether wetlands should be listed as "internationally important" on the basis of cultural and socio-economic values, including their built heritage values. Australia argued quite successfully that wetlands should be nominated on the basis of their ecological values and that cultural values, while extremely important, were not appropriate nomination criteria. This was an important point because during the negotiations the Convention's definitions for *ecological character* and *wise use* were being revised to incorporate concepts such as "sustainable development", "ecosystem services", and "benefits for humans"—and if we had been unsuccessful we may have been obligated to protect the economic livelihoods of those enterprises that derive an income from the use of wetland resources, which was clearly not the original intention of the Convention.

During the CoP, a ninth criteria for nominating Ramsar sites was also agreed: a site which contains 1% of the world population of non-avian species can now be listed as a Wetland of International Importance. This is particularly

Images from Cop9 of nearby Ugandan environs and members of the Australian delegation in action.
Photographs: courtesy of Bruce Gray

important for Australia, which has an unusually large number of endemic species.

The next meeting of the Ramsar Convention is planned for 2008, which the Republic of Korea has generously offered to host.

Further information:

- Daily reports of CoP 9, including text and images, are available via the Earth Negotiations Bulletin at <www.iisd.ca/ramsar/cop9>.
- The Ramsar CoP 9 Avian Influenza Resolution is available via the Ramsar web site at <www.ramsar.org/res/key_res_ix_23_e.doc>.
- Other Ramsar CoP 9 Resolutions will become accessible over the next month or so via the Ramsar web site at <www.ramsar.org>.
- For further information on wetlands management in Australia and the Ramsar Convention, please contact Inland Waters Section or visit the wetlands website: <www.deh.gov.au/water/wetlands/about.html>.
- For further information about Australia's Ramsar sites, the EPBC Act, and the protection and wise use of Wetlands of International Importance in Australia, please visit: <www.deh.gov.au/water/wetlands/publications/index.html> and <www.deh.gov.au/water/wetlands/epbc/index.html>.

Rush (sedge) *Dapsilanthus ramosus*. Photograph: Roger Jaensch

NSW RAMSAR WETLANDS COMMUNICATION PROGRAM UPDATE

Peggy Mucci, Project Officer
NSW Ramsar Wetlands Communications Programme
The Hunter Wetlands Centre Australia

The NSW Ramsar Wetlands Communications Programme (RWCP) is an innovative approach aimed at increasing awareness, appreciation and value for wetlands and the Ramsar Convention as a key tool for the conservation and wise use of wetlands, across a range of land tenures.

The RWCP targets key audiences throughout NSW using a range of communication tools including a website/link, media campaign, brochures, site tours, presentations to schools, a presence at key events and many other activities. RWCP is an initiative of the NSW Ramsar Managers Network (RMN), which is a group of private and government wetland managers working towards a sustainable future for Ramsar Wetlands in NSW.

The RWCP is funded through the Australian Government's Natural Heritage Trust and co-ordinated by the Hunter Wetlands Centre Australia (HWCA).

While the RWCP primarily supports private Ramsar Wetlands in NSW, it is expected to benefit all Ramsar Wetlands in NSW and wetlands generally. This is reflected in the suite of communication activities found at<www.wetlands.org.au/WhoCaresAboutOurWetlands>. Of the eleven Ramsar Wetlands in NSW, four are private or community owned and managed. These are:

1) Fivebough and Tuckerbil Wetlands (near Leeton);

2) Wilgara Wetland (part of the Macquarie Marshes Ramsar Site near Quambone);

3) Gwydir Wetlands (near Moree); and

4) Shortland Wetlands (part of the Hunter Estuary Ramsar Wetlands near Newcastle, owned and managed by Hunter Wetlands Centre Australia).

The RWCP is based on key findings and outcomes identified in the *Who Cares About Our Wetlands?* research report (The Hunter Wetlands Centre Australia Dec 2004). This research report was developed as the first phase of the RWCP and was instrumental in identifying existing levels of awareness and the understanding that target audiences have for the Ramsar Convention and wetlands in general. This helped identify appropriate communication activities to feed into the design of the RWCP.

The aim of the RWCP is to:

> *Increase awareness, appreciation and value in NSW for wetlands and the Ramsar Convention, as a key tool for the conservation and wise use of wetlands, to key target audiences.*

The communication objectives for the RWCP are to:

1. Communicate the function and important role wetlands play in the total landscape and environment, to further increase the awareness, understanding and appreciation of wetlands among key target audiences;
2. Communicate the significance and role of the Ramsar Convention as a key tool for conservation and wise use of wetlands within NSW, including the four Private Ramsar Wetland sites; and
3. Communicate the relationship and significance between wetlands and the Ramsar Convention, for increased recognition, appreciation and priority among key target audiences.

Key communication activities

Since the launch of the RWCP on 6 February 2005 key activities have included:

- Sixty two media spots achieved including a number of TV stories;
- Consultation: Catchment Management Authority visits and governmental and wetland agency site tours;
- NSW Ramsar Brochure developed;
- Wetlands Network Email Newsletter: a bimonthly email newsletter with updates on the NSW Ramsar Wetlands Communication Program. If you would like to receive the Wetlands Network Email Newsletter send a request to <ramsar@wetlands.org.au>;
- Production of a NSW Wetlands video which showcases the importance of wetlands and is designed to be shown, for example, during presentations, on school tours within private Ramsar sites, and at visitor and wetland centres;
- Presentations on the importance of wetlands and the Ramsar Convention at relevant conferences and forums including: Central Coast Landcare Forum, Hunter Weed Forum, Floodplain Graziers Conference, and the National Wetlands Innovation Forum;
- Road Show to schools and community groups within the four Private Ramsar site regions. The first of the two Road Shows have been completed with positive feedback from participating schools; and
- Ramsar wetlands website (update of the NSW Department of Environment and Conservation "Rivers and Wetlands" website).

Key communication activities planned for the near future:

- Education links through updating wetlands teaching resources;
- Continuing the Wetlands Road Show to school and community groups within the Hunter and Fivebough and Tuckerbil regions;
- TV campaign promoting importance of wetlands leading into World Wetlands Day—2 February 2006;
- World Wetlands Day events; and
- Encouraging TV programs to take on wetlands stories.

The final stage of the RWCP will be an evaluation stage with results to be compared to baseline data collected during the *Who Cares About Our Wetlands?* research report. This will help determine the level of increase in awareness within key target audiences and importantly which communication activities were most effective in each of the key target audiences. The results will provide reference for future communication activities.

More Information on Ramsar and Wetlands in NSW
<www.ramsarwetlands.nsw.gov.au>
<www.wetlands.org.au/WhoCaresAboutOurWetlands>
Peggy Mucci, Project Officer,
NSW Ramsar Wetlands Communications Program
ph: (02) 49516466 or email: <ramsar@wetlands.org.au>

MANAGING THE BROADWATER, NEAR MACLEAN, LOWER CLARENCE RIVER, NORTH COAST NSW

The Broadwater. Photograph: courtesy of Adrienne Farago

Adrienne Farago
NSW Department of Environment and Conservation

Many people would not immediately think of a large shallow estuarine lake that supports over a dozen commercial fishers as a wetland. However, The Broadwater, a 2,800ha off-stream tidal waterbody averaging less than 1m in depth, is the largest estuarine wetland in the Clarence River estuary. In 2003, a NSW Department of Environment and Conservation (DEC) desktop review determined that this submerged Crown land may well meet the criteria for listing as a wetland under the Ramsar Convention on Wetlands of International Importance. DEC was concerned to ensure two things:

- that any possible nomination was considered with proper public consultation; and
- that any potential management conflicts were considered and addressed prior to any possible nomination.

DEC therefore formed a working group of stakeholders, comprising local and state government agencies, recreational and commercial fishers, local conservation groups, the local Aboriginal Land Council and, once a representative group was formed, local landholders. The goal of the Broadwater Wetland Working Group (BWWG) was to "assess community support for nominating The Broadwater Wetland to the Ramsar Convention and, if agreed, undertake the nomination of The Broadwater to the Ramsar Convention". The BWWG has had an independent chair, Julian Prior from the University of New England (UNE).

The Broadwater. Photograph: courtesy of Adrienne Farago

The main tool used by the BWWG has been a Plan of Management (PoM) for The Broadwater. Most of the PoM has been written by two honours students from UNE (Kate McPherson and Rosanna Chell) under Julian's supervision. This document aimed to identify any potential management conflicts and facilitate consultation. As a stand alone document, the PoM is useful in directing and coordinating site management, regardless of whether the Group proceeds with a Ramsar nomination. The PoM is also, in effect, an interim Ramsar Plan of Management under the requirements of the Ramsar Convention and the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999*.

Some landholders in the catchment have been concerned about the possible implications of a Ramsar nomination, and the BWWG therefore decided to proceed with the PoM first, prior to consulting more broadly on a possible Ramsar nomination.

The PoM is now complete, and was on public exhibition during November 2005. The PoM addresses ecological, socio-economic and cultural values; and management issues associated with both water quality and the aquatic ecosystem, and the adjacent terrestrial vegetation. It expresses a number of management objectives, and management actions covering ecological character and values (in accordance with the group's understanding of the Ramsar requirements); monitoring; and management partnerships.

The 'ecological character' of The Broadwater—the term used by the Ramsar Convention to describe the nature of wetlands—is described as:

- supporting a high diversity of riparian and aquatic habitats;
- being a wetland type representative of both estuarine wetlands and wetlands of the NSW North Coast bioregion;
- being a refuge for fauna during adverse conditions; and
- being important habitat for animals at important or vulnerable stages of their lifecycle.

The wetland comprises all stages of wetland vegetation succession from the aquatic ecosystem to the adjacent terrestrial vegetation. It contains sub-tidal aquatic beds (seagrasses, marine meadows such as water couch and open water systems); estuarine waters; inter-tidal mud, sand and salt flats; inter-tidal forested wetlands (mangrove swamps); freshwater lagoons and marshes within the coastal zone (swamp forests—spike and pin rush swamps and water couch meadows); and non-tidal freshwater forested wetlands.

The Broadwater. Photograph: courtesy of Adrienne Farago

The Broadwater. Photograph: courtesy of Adrienne Farago

The Broadwater provides breeding and nursery grounds for a number of birds (including birds listed under both the Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA and CAMBA); fish (including a wide range of highly valued commercial and recreational species); and invertebrates. The Broadwater is an important location for the Aboriginal community, and has European cultural values closely linked with the history of agricultural settlement and the character of the agricultural landscape.

The Broadwater is in relatively good condition. However, the PoM process identified potential threats such as sedimentation, eutrophication, acid sulfate soils, physical disturbance (eg of seagrass), pollution (both diffuse and point source, for example from drains and sewerage outlets), unsustainable levels of fishing or grazing, and from pest plants and animals.

The BWWG made several management recommendations, many focussing on survey, monitoring, research and coordination; and on supporting sustainable 'best practice' in the surrounding industries.

The BWWG is consulting with the NSW Department of Lands on forming a reserve trust under the *NSW Crown Lands Act 1989* to manage the Crown Land reserve. Such a trust would be responsible for implementing the PoM, and could also be responsible for further investigation and consultation on nominating The Broadwater as a Wetland of International Importance under the Ramsar Convention.

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A RAMSAR PROMISE KEPT

Tim Wilson
South Australian Department for Environment and Heritage

In South Australia, Tim Wilson is busy working to keep a promise on a Ramsar site that turned 20 last year.

Tim is the Senior Ramsar Officer for the *Coorong and Lakes Alexandrina and Albert* Ramsar site. The site includes part of the Murray River channel, two lakes, the Coorong lagoons and barrages which prevent saltwater incursion into the vital water basin which supplies drinking water for Adelaide and water for irrigation.

Back in 1985 when the site was listed, Australia undertook to maintain the ecological character of this Ramsar-listed site. The site continues to meet the Ramsar criteria for listing, a measure of its significance. However, by the standards of the time, a six-page document was deemed sufficient to characterise the area and its assets.

Following the establishment of the first Ramsar Management Plan for the area in 2000, Tim joined as the designated Senior Ramsar Officer. Previously, National Parks Rangers and visiting scientific officers from the South Australian Department for Environment and Heritage managed the site. That has changed. Tim's office is on Hindmarsh Island, 5km from the Murray mouth, in the heart of the site. His task has been overseeing a detailed ecological character description of the site (as described in the *Wetlands Australia Update, Issue 13, 2005*).

The task is massive. The site itself covers more than 140 000 ha with six different wetland types, which have been classified and described as 'components' in the ecological character description. These include freshwater lakes and streams, salty ephemeral lakes and coastal lagoons. Within each component there are several Ramsar wetland types. The site's complexity has made the task of describing its ecological character a lengthy and challenging process.

Developing a complete ecological character description, reflecting its present and past condition, has been difficult due to the absence of good data. Little detailed data was systematically collected prior to 1985 (the reference date for the description). Although information on river flows, birds and some other ecological parameters is available, flora and fauna data in general is scarce. To overcome this problem, consultants have used more recent biological survey data, which identifies the presence of species such as frogs, fish and plants, to develop a better estimate of the ecological character of the site, as it was in 1985.

A key outcome of the description is the development of Limits of Acceptable Change (LAC). These LACs describe what is considered the appropriate variation in the population size of a species, the spatial extent of a wetland type or the variation in a physical parameter such as turbidity or salinity. The LACs will inform future management of the site in two major ways: firstly, by providing a benchmark for monitoring and responding to change and secondly, by providing information to assist in assessing development proposals.

Tim says that one of the most satisfying aspects of the project has been encouraging local Aboriginal elders to contribute to the project. The Ngarrindjeri people had several concerns, for example they have an outstanding Native Title claim on areas which include the Ramsar site and they were concerned that participating in the ecological character description project might harm their claim.

Samphire, Coorong, South Australia. Photograph: Wendy Harris

Noonameena Point, Coorong, South Australia. Photograph: Wendy Harris

With a lot of work and a great deal of good will on both sides, Ngarrindjeri elders are making a substantial contribution to describing the ecological character of the site.

"We have run two separate streams of data and knowledge collection, with one specifically for the Ngarrindjeri," Tim said.

"Much of what they have said supports the scientific data but also adds their own unique perspective on the importance and life of the site. It has been a significant step to have their involvement. We have worked hard to get their help and they have put themselves out too, so it's been a significant contribution on both parts."

Both knowledge streams will be merged in the final document. Compared to its 1985 predecessor, the current ecological description is already 238 pages. It will grow some more this year as comments from the consultation process are included as well as insights from the Ngarrindjeri.

Once the ecological character description is published, work will begin on preparing a new management plan—work not readily possible until now because the baseline had not been established. The management plan will underpin the methods used to keep that 20 year old promise and maintain the living diversity in a vital part of Australia's Ramsar site network.

The other side of the story:

CULTURAL VALUES AND WETLAND ASSESSMENTS IN CENTRAL WESTERN NEW SOUTH WALES

Peter Peckham and Robyn Molsher
Department of Environment and Conservation, NSW
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Background

All wetlands and other natural features are important to Aboriginal people, not just the well-known culturally significant ones, because these natural features form part of their culture and identity. Aboriginal people see themselves as being part of the land and not owning it, and their "Country" is their place of origin, spiritually and culturally. Allowing wetlands to degrade and lose function affects their very culture and is an important issue for Aboriginal communities and those managing these wetlands.

The overall objective of this project was to improve the capacity of Aboriginal people to participate in and contribute to wetland and river management processes in New South Wales (NSW).

In the past, wetland management policies and planning have been ineffective in representing the views of Indigenous Australians in NSW. References to Aboriginal culture are generally vague and achieve little effective representation for Aboriginal people. Vegetation and water reform have often failed to incorporate Aboriginal views on natural resource management, and this particular wetland project was seen as a first step toward improving the way Aboriginal cultural considerations can be used to influence and inform water management in NSW.

Specific objectives of the project included:

- improving understanding of the Aboriginal values of an "ordinary" wetland and a "significant" wetland;
- providing a case study of how even "ordinary" wetlands contain significant Aboriginal values;
- showing how Aboriginal knowledge can be used to better understand ecological processes;
- teaching site identification to Aboriginal students and assisting cultural renewal processes;
- identifying water management issues for Aboriginal people; and
- recommending actions to improve Aboriginal involvement in water management.

Above: Students learning about cultural site identification at the Macquarie Marshes Nature Reserve.
Photograph: Robyn Molsher

Left: Part of an "ordinary" wetland in central western NSW.
Photograph: Robyn Molsher

Note: while government agencies can designate a wetland as "Significant" (that is, of State, national and even international importance), many other wetlands are not so rated. This project looked at a known significant wetland and, separately, a non-rated ("ordinary") wetland. In each case, the Aboriginal values and knowledge associated with those wetlands was compared.

Project description

A preliminary assessment was made of the Aboriginal values of two wetland systems in central western NSW. These were:

1. an "ordinary" wetland (the Gum Cowal wetland) approximately 60 km west of Narromine, near the Bogan River; and

2. a "significant" wetland (the Macquarie Marshes Nature Reserve) approximately 100 km north of Warren.

The Gum Cowal wetland is described as "ordinary" because it does not appear to have any remarkable cultural features and is located on private land used for grazing.. In contrast, the Macquarie Marshes Nature Reserve is listed as a Wetland of International Importance under the Ramsar Convention, and has well known cultural values. Both surveys were considered preliminary assessments of the cultural values of the wetlands and are not intended as comprehensive cultural mapping exercises.

Scientific values (Aboriginal site surveys, threatened species records) and social values (oral histories) were assessed for each of the two wetlands.

Results

The "Ordinary" wetland (the Gum Cowal wetland)

Archaeological and social value assessments indicated that this wetland was significant to Aboriginal people, both in the past and present. The low density but high diversity of artefacts indicated that the wetland was important traditionally for food and trade, especially when resources on the Bogan River were stressed. The few living knowledge holders with an association with the wetland remember Aboriginal people camping there on their way to Big Pine Camp and Dandaloo Mission.

The "Significant" Wetland (The Macquarie Marshes Nature Reserve)

A total of 84 cultural sites were identified in six survey days in and around the The Macquarie Marshes Nature Reserve, including hearth sites, artefacts, mounds, and scarred trees. The relatively high density of sites found in these surveys shows the Marshes traditionally supported a significant Aboriginal population. Aboriginal site distribution gave information on past water levels. The Aboriginal site surveys also facilitated cultural renewal processes involving young Aboriginal students.

Conclusion

This project provides a case study of how even "ordinary" wetlands contain significant Aboriginal values, both past and present; and the importance of documenting this information before it is lost. It also highlights the value of Aboriginal information in understanding the ecological functioning of the system (such as the past condition of the site and its water regime). In order to manage wetlands and rivers more effectively, all available information needs to be considered, including traditional, historical and contemporary Aboriginal knowledge.

CATCHMENTS TO COAST

International Conference
9 – 14 July, 2006
Cairns, Queensland
Australia
www.catchments.org.au

The **Society of Wetland Scientists** and **Australian Marine Sciences Association** invites you to their joint annual meeting in the tropical city of Cairns in July 2006.

Catchments to Coast is an international conference, the major focus of which will be the vital role and value of wetlands within the terrestrial and marine environments. Importantly, the joint conference provides an international platform for showcasing the need for, and benefits of, a multidisciplinary approach to the complex issues associated with the land-sea interface.

The conference will be supplemented by a range of more specific wetland and marine science topics of current interest, including estuaries, aquaculture, migratory species, hydrological/geological processes, biogeochemistry, ecotoxicology, ecosystem-based management and protected areas.

The conference brings together the annual meetings of two major scientific societies:

1. The Society of Wetland Scientists is the largest professional body of wetland scientists and managers in the world, with more than 4000 members; and
2. The Australian Marine Science Association is the major national professional association for marine scientists from all related disciplines.

The joint conference allows the development of international linkages around the connection between catchments and coasts.

All conference details, including paper submission, registration, and program details can be viewed on the conference website: <www.catchments.org.au>.

For further enquiries contact the conference organiser, Sally Brown, on <Sally.Brown@uq.net.au>.

Mangrove, saline flats associated with the Moresby River, QLD. Photograph: Roger Jaensch

WATERBIRDS FLOCK TO NEWLY WATERED HATTAH LAKES

Sam Leone
Murray Darling Basin Commission

Thousands of waterbirds are flocking to the Hattah Lakes near Ouyen in Victoria as the latest environmental watering trial continues.

Hattah Lakes was listed under the Ramsar Convention as a Wetland of International Importance in 1982, and is one of six Significant Ecological Assets identified in the Murray-Darling Basin Ministerial Council's The Living Murray Initiative.

This financial year, around 3000 megalitres (ML) of water from the River Murray is being pumped into Lakes Lockie, Little Hattah and Yerang.

The water has been provided from the Victorian Department of Sustainability and Environment's Environmental Water Allocation to benefit flora and fauna and address River Red Gum health.

The trial builds on the emergency River Red Gum watering program of the 2004–2005 financial year during which 1200 ML of water, including 369 ML of donated irrigation water, was delivered to the southern arm of Chalka Creek, which feeds the Hattah
Lakes system.

Funding for the trial has been provided under the Australian Government's National Action Plan for Salinity and Water Quality (NAP), the Victorian Government's Our Water Our Future initiative and Rural Water Reform package, and the Australian and Victorian Government's Emergency River Red Gum
Watering package.

Most of the money will pay for pumping with local contractors employed to deliver the water. Pumping began in mid-September 2005 and 3000 ML was delivered to the Lakes by mid November 2005.

The large, water-stressed River Red Gums around Lake Lockie are getting their feet wet for the first time in three years, providing a tremendous boost to their health. Hattah-Kulkyne National Park rangers have reported that around 25 species of waterbird, including up to 5000 Grey Teal, were now present on
Lake Lockie.

For more information go to <www.malleecma.vic.gov.au/>.

Lake Hattah. Photograph: Damian Wells

Lake Yelwell and Lake Yerang from the air. Photograph: Clare Mason

Aerial Photos of the Hattah Lakes (Lakes Brockie, Bulla, Arawak and Hattah).
Photograph: Clare Mason