Australia's Wetlands – Learning to Love our Stinking Swamps: A National Overview[1]

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It's late August and a flock of Red Knots is completing their 11 000 kilometre journey from the Arctic Circle. After flying across eastern Asia and down through the Indonesian archipelago, they head for the vast mass of wetlands at the southern end of the Gulf of Carpentaria.

These Red Knots are just some of the two million shorebirds from 71 species known to migrate to Australia. Protecting their habitat is no simple matter. Red Knots breed on the coast and islands off northern Siberia and Alaska so they need secure places there. When the Arctic winds howl, however, the Red Knots are far off in the relative warmth of Australia. On the intervening journey, wetlands in Japan, China, Taiwan, Thailand and New Guinea serve as way stations. If the birds cannot find shelter, rest and a sure source of food at every site, then they may never make it back to their breeding grounds.

Like most migratory waders, the Red Knots' first landfall in Australia is likely to be either Eighty Mile Beach or Roebuck Bay in Western Australia, or the south-east corner of the Gulf of Carpentaria. Some birds stay at these sites for the whole summer, but most use them as stop-overs only, before moving further south.

To help build up the body fat needed to power their flight back to the Arctic, the migratory waders head for the most productive ecosystems they can find – the wetlands. They have known about the productivity of Australia's wetlands for millennia. Humans, however are only just realising the immense value of these 'stinking swamps'.

A Community Asset

A recent study estimated the total value of the goods and services provided by the Earth's natural ecosystems as $US33 million million ('The value of the world's ecosystem services and natural capital' by R. Costanza et al., *Nature* 387 (253), 1997). The most valuable terrestrial ecosystems, valued at $US4.9 million million per year, were wetlands, comprising swamps/floodplains and tidal marsh/mangroves. Almost 80% of the economic value of these wetlands came from their role in controlling floods, providing protection from storms, and cycling nutrients and waste.

The treaty for protecting wetlands of international significance, the Ramsar Convention, includes marine waters down to six metres in its definition of wetlands. When estuaries, seagrass/algae beds and coral reefs were added, the Nature study estimated that wetlands provide up to 40% of the planet's goods and services.

A little closer to home, the value of wetlands as breeding and nursery areas for fish is increasingly acknowledged by the fishing industry. It has been estimated, for example, that every hectare of mangrove forest in Moreton Bay generates $8380 worth of fish. Farmers and graziers are also realising the value of wetlands for controlling floods and keeping the rivers flowing during droughts. There are other less direct benefits to primary production. Along the Murray River, the ibis that roost in the red gum forests of Barmah and Gunbower perform a pest control service for the surrounding properties valued at $675 000 per year.

[1] This paper was first published in *Habitat* 1997

Undervalued, Under Threat

But for wetlands in the agricultural regions of Australia, we have realised their value too late. State of the Environment: Australia 1996 reports that 'the extent and condition of Australia's wetlands have deteriorated greatly since European settlement by draining, changes to water regimes and increase sediment and nutrient inputs'. One third of Victoria's natural wetlands are gone, as are 70% of some coastal wetland types in NSW and 70% of the wetlands on the Swan coastal plain around Perth. Drainage has reduced wetlands in south-east South Australia to just 11% of their former area and 63% of lowland wetlands in Tasmania are disturbed.

Wetlands are victims of gravity. Being at low points in the catchment means that all the land and water management problems upstream eventually show up in the wetlands. They have also had a public relations problem, being traditionally viewed as 'wastelands', breeding grounds for mosquitoes, or places to be 'reclaimed'. Being physically inaccessible to most people didn't help this image problem.

While the tide may be turning, it hasn't turned yet. Coastal wetlands are still being reclaimed for housing, excavated for marina developments, and in the longer term face the possibility of rising sea levels due to climate change. This is perhaps the greatest threat to the wetlands of the Great Barrier Reef, already suffering from unprecedented levels of nutrients flooding out from a poorly managed mainland. The spread of mosquito-borne diseases, such as Ross River fever, also raises the risk that wetlands will be filled in or sprayed with insecticide for perceived public health, convenience and tourism benefits.

Along the inland rivers, wetlands evolved with massive winter-spring floods, followed by very low flows in summer-autumn. This annual variation was important. In the dry periods plants died off, decomposed and returned nutrients to the soil, while big floods triggered a flush of invertebrate life and breeding by fish and waterbirds. Now dams and weirs have evened out the annual river flows, eliminating both the biggest floods and the droughts. As a result wetlands are getting both too much and too little water, at the wrong times of year.

When river flows are upset, wetlands become less productive, less diverse, and less effective in providing other environmental services. The whole river system suffers when less of its sediments and nutrients are being filtered out by wetlands.

In the high country there are quite different wetlands, ranging from wet heaths to peat bogs. Here at the top of the catchment, wetlands act as sponges. They help to maintain steady river flows by soaking up water in the wet period and slowly releasing it during the dry. They also provide habitat for threatened species of plant and animals, such as the Corroboree Frog, which are restricted to these unusual habitats. While some highland wetlands are threatened by trampling by stock or bushwalkers, Wingecarribee Swamp on the Southern Highlands near Sydney, faces a more catastrophic threat. It is being mined for peat moss used in the horticultural industry.

In the arid inland, the vast desert lakes such as Lake Eyre are the terminal points of vast catchments. While dry for much of the year, they generate a phenomenal flush of life when full. The remoteness of these places protects them from many outside threats, although it also makes them a focus in an otherwise inhospitable region. Both feral animals and tourists are attracted to these oases, and both bring problems. Others, such as Coongie Lakes, are threatened by oil and gas exploration and mining.

Can the Ramsar Convention help?

For these and many other threats, the Ramsar Convention (on Wetlands of International Importance) provides much less protection than it should. It was one of the earliest international

environment conventions, and broadly aims to promote the conservation, wise use and reservation in nature reserves of wetlands, not just those listed under the Convention.

Australia has a special relationship with the Ramsar Convention, being the first signatory to it and the site of the world's first Ramsar wetland (Coburg Peninsula in the Northern Territory). We also have the fourth largest area of Ramsar listed wetlands in the world (five million hectares) after Canada, Botswana and the Russian Federation.

Yet our wetlands, both Ramsar and others, are not in the condition they should be, and the convention is no magic bullet. The problem is that the Ramsar convention provides moral obligations only, not legally binding ones. Given the poor state of wetland conservation world-wide, the benchmark for developed countries like Australia is set very low.

While Australia is considered something of a leader in Ramsar circles, there are countries taking more innovative approaches, particularly by providing national legislative protection for wetlands. The South African Government is currently considering a Wetlands Conservation Bill to directly apply the Ramsar Convention by prohibiting detrimental activities in wetlands and controlling activities detrimental to their catchments. The United Kingdom lists all its Ramsar sites as 'Sites of Special Scientific Interest' under the Wildlife and Countryside Act.

The Importance of Management

Of the 49 Ramsar listed wetlands around the country, less than ten are covered by plans of management. A few wetlands are indirectly affected by plans of management for the national parks, catchments or lakes that surround them, but these plans are not necessarily directed towards protecting the full range of wetland values. For most of the remainder, plans of management are 'in preparation' and have been for years.

As a result, many of these wetlands of international significance are continuing to suffer from rising saline ground water (e.g. Kerang wetlands in Victoria), by dredging and mining for sand and coral (Moreton Bay in Queensland) or from overgrazing (Eighty Mile Beach in Western Australia). Declaring the Ramsar sites is easy, managing them well is another matter entirely.

The importance of management was acknowledged at the Ramsar Conference at Kushiro, Japan in 1993. Guidelines on Management Planning for Ramsar Sites were adopted, and they spell out very clearly the format and range of issues which should be covered in a plans of management for wetlands. The Federal Government should be driving the preparation of these management plans, and ensuring they are implemented with vigour.

Safe Havens for International Travellers

While the Ramsar Convention seeks better management of all wetlands, it places particular emphasis on those of international importance. While Australia has a relatively area of wetlands on the list already, there are still more which qualify for listing.

During the summer period, 80% of the birds visiting Australia are found in three main regions: the north-west coast between Broome and Port Hedland, the coast between north-east Arnhem Land and the Gulf of Carpentaria, and the south-east coast between the Eyre Peninsula and Corner Inlet in Victoria. While a number of the major wetlands in these priority regions are Ramsar-listed, there are many notable exceptions: the south-east corner of the Gulf of Carpentaria, Arafura Swamp in North-east Arnhem Land, Port Hedland Saltworks, Clinton Conservation Park in St Vincents Gulf, Northern Spencer Gulf to name a few.

Outside this priority band, there are other wetlands which easily pass the international significance test: Lake Eyre in South Australia, where more than 100 000 shorebirds have been recorded at peak periods; Shark Bay, a World Heritage area whose wetlands support dugongs as well as waterbirds; and the Great Sandy Strait in Queensland, the complex of sand and mud flats, seagrass beds, mangroves, salt flats and salt marshes near Fraser Island.

At the Brisbane Conference of the Parties in 1996 another major initiative was launched: the East Asian-Australasian Flyway. It aims to provide safe passage for the two million shorebirds that migrate along east Asia and the western Pacific each year. By providing a network of shorebird reserves for the migrating flocks, the people of this sector of the globe can maintain natural patterns that have been in place for centuries.

An initial list of 23 sites were included on the network, and were nominated by the Ramsar countries in the region at that time: Australia, Japan, China United Kingdom, Philippines, Cambodia, Indonesia and New Zealand. The priority tasks for the future, are to encourage further countries in the region to become parties to the Ramsar Convention, and to fill in the gaps along the Flyway. Already there has been some success with Korea signing up in July 1997. We now have the responsibility to add more Australian sites to the Flyway list. Again, the south-east Gulf of Carpentaria is a top priority.

Keeping our Wetlands House in Order

The great value of the Ramsar Convention has been in recognising the importance of wetlands domestically as well as internationally. Not all our wetlands are of international importance, but they are vital parts of our environmental and economic infrastructure. The Directory of Important Wetlands (1996) identified over 24 million hectares of important wetlands in Australia, and by far the largest share falls in Queensland (47%). Next in line was South Australia (17%) and the Northern Territory (12%).

To date, none of these States or Territories have a wetlands policy. Only the Federal Government and NSW have adopted wetlands policies. These policies encourage protection, cooperation and better management of wetlands, but they do not require it. Problems like invasive weeds, nutrient pollution and inappropriate river flows cannot be dealt with on an ad hoc basis. They require the kind of considered, strategic and well coordinated response that State-wide policies within strong nationally consistent standards can bring.

Wetlands are superb indicators of the overall health of a region, and degraded wetlands are a sign that land and water management is unsustainable. As a result there are no quick fixes for our wetlands, but the rewards of tackling the problems on a catchment basis are immense. If we save our wetlands, then we will have saved our dry lands and our rivers too.

Priority Actions for Saving Australia's Wetlands

- Plans of management for all Ramsar sites and their catchments.
- Additional wetlands of international importance added to the Ramsar list.
- No further excisions of wetlands from the Ramsar list.
- A wetland policy for every State and Territory.
- Better representation of wetlands in the protected area system.
- Prevent mining and other damaging developments in wetlands of international importance.
- Community education to raise awareness of wetland values.