The saving of Towra Point

Little tern nesting

As we celebrate World Wetland Day in 2010, we look back on our very successful campaign to draw attention to major environmental problems on the Towra Nature Reserve in Botany Bay, Sydney, and recollect how we went about finding a positive solution to both the degradation of the reserve and how to provide a better habitat for migratory wading birds.

Towra Point is not only the most significant wetland in the Sydney region, but is also important at a national and international level.

Towra Point Nature Reserve, which is only 16 kilometres south of the centre of Sydney, at the mouth of the Georges River in Botany Bay, includes important remnant terrestrial vegetation and wildlife habitats, and is surrounded by seagrass beds, mangroves and migratory wading bird habitats. Towra Point Nature Reserve and the adjacent Towra Point Aquatic Reserve (managed by NSW Fisheries) form the largest and most diverse estuarine wetland complex remaining in the Sydney region.

Visitors first encounter 800 metres of saltmarsh that at times can be inundated with either seawater or fresh water, depending on tide height and flooding from heavy rain. Of the twelve species of saltmarsh flora to be observed, glasswort *(Salicomia quinqueflora)* is the most abundant species.

The first plant community that is encountered after leaving the saltmarsh is a swamp oak forest, with stands of tall casuarina. This is the most widely scattered plant community in Towra Point Nature Reserve. Beyond these is a forest of swamp mahogany *(Eucalyptus botryoides)* referred to locally as bangalay trees.

The first littoral rainforest can be seen adjacent to the bangalay forest. It contains several large lilly pilly *(Acmena smithii)* trees. A variety of birds, including rainbow lorikeet, crimson rosella and eastern rosella, can be seen feeding on the purple berries during spring. One of the permanent freshwater ponds in the nature reserve is to be found near the lilly pilly trees. Known as Weedy Pond, it is completely covered by exotic lantana *(Lantana camara)*. It is doubtful whether any of the freshwater plant species have survived.

The forest close to the shoreline consists mainly of tea-tree *(Leptospermum laevigatum)* and banksia *(Banksia integrifolia)*. Many exotic plant species are found in the dune forests with the rampant lantana. The exotic bitou bush *(Chrysanthemoides moniliferum)* also appears to be gaining a hold.

Freshwater wetlands cover only two percent of the nature reserve but they add greatly to its habitat diversity. The most important pond is Mirrormere, about 100 square metres in area

and about 0.5m deep on average. It greatly increases in volume and height during heavy rain periods. Around Mirrormere is a dense stand of paperbark *(Melaleuca ericifolia)*. A stand of swamp oaks borders either end of the pond. The largest pond, Towra Lagoon, contained freshwater until May 1994 when heavy waves overtopped the beach. This occurred when a combination of heavy ocean surges met with floodwaters from Georges River. Dredging Botany Bay has increased the wave height.

There are 400 hectares of mangroves around Towra. This is the largest mass stand in the Sydney region. It comprises the two species found south of Taree with grey mangrove *(Avicennia marina)* being dominant. The other species, river mangrove *(Aegiceras comiculatum),* is a dwarf form seldom reaching 2.5 metres in height and is found in the low-salinity areas.

Mangroves play an important role in the food chain for estuarine animals. One square kilometre of mangroves contributes about 600 tonnes of leaf litter each year to the detrital food chain. The mangrove forest floor also supports large numbers of animals. For example, a survey at Towra Point showed that a square metre of sediment can contain up to 100 animals of 35 species. The most common are crabs and molluscs. Mangrove stands could be classed as the Twilight Zone – the upper limit for crabs and other marine animals, the lower limit for lizards and snakes.

Sea grasses are considered to be second only to coral reef communities in productivity. A survey revealed that 1.5 square kilometres of seagrass yielded 235 million prawns and 95 billion molluscs. Seagrass is the main source of detritus, producing 20 tonnes per hectare per year.

Towra Lagoon - showing pollution and erosion

Access

As the Towra Point Nature Reserve is a special nature reserve, visitors are obliged to obtain permission from the National Parks and Wildlife Service at Kurnell prior to gaining access.

History and nature of Towra Beach Nature Reserve

Towra Point joins the Kurnell Peninsula along the southern and eastern boundary of Botany Bay. The sandstone headland adjacent to Captain Cook's landing place at Kurnell was originally an island. At about the time when sea levels were stabilising, between 9,000 and 6,000 BC, a tombola was formed connecting Kurnell Island to Cronulla mainland. Eventually the Kurnell-Cronulla bay mouth silted up and closed, the Kurnell and Towra peninsulas were born and Botany Bay took its present shape as a large shallow bay.

Two ancient river systems, Cooks River and Georges River that flowed into the sea beneath the present sand dunes near Wanda, became blocked with accumulating sand as the sea level rose. This gradual silting-up forced the Cooks River and Georges River system to take an easier route to the sea via La Perouse rather than continue to maintain an opening in an ever-growing sand barrier near Wanda.

Towra is now a low-lying promontory only three metres above high water level at its highest point and is surrounded by mangroves and saltmarsh. It occupies an area of 440 hectares and is the remnant of a large complex of fresh and salt water marshes and swamps lost to shifting sands of the Kurnell dunes caused by local forest logging.

Towra Lagoon after restoration

History

There are traces of several Aboriginal middens on Towra Point dating back thousands of years. The quantity and variety of shellfish around Botany Bay had attracted the Water People, as the local indigenous people were called.

Towra Lagoon is an item of great cultural heritage value as it was mapped by Captain Cook when he was in Botany Bay in April 1770. It once supported numerous fauna species including

An aerial view taken in 1961 of Towra showing the "Elephant's trunk" sand spit

tortoises but, due to the beach erosion and the subsequent saltwater inundation of the once freshwater lagoon, these species have all but disappeared.

Kurnell Peninsula was first logged by the first European landowner, James Connell, in 1835. By 1868 the forests of blackbutt and ironbark were cut down for houses and bridge construction and the remaining vegetation was cleared for grazing. This caused the sand dunes to move at a rate of approximately nine metres a year from 1885 to 1913. By 1923 sand was spilling into Quibray Bay from the large sand dunes of the ocean front of Cronulla Beach.

The mudflats of Towra Point first came under notice as an industry base after an attempt by pioneer Thomas Holt to cultivate oysters on the seabed of Gawley Bay (now Sylvania Waters) failed in 1870. Pioneer oyster farmers experimented successfully around 1870 with rectangular slabs of sandstone, placing them in rows in the intertidal mudflats in Quibray Bay, Woolooware Bay and Towra Point. By 1920 there were 450,000 stone slabs distributed around Towra. Thus the Georges River Botany Bay oyster industry was born.

There has been conflict with urban development ever since the first manufacturing industry, a clothing mill, was established on the shores of Botany Bay in 1815. The Towra Point wetlands managed to survive because they are located in a secluded part of the Bay. However, in 1966 the Federal Government, looking to expand Kingsford Smith Airport, decided on Towra Point as a potential site for an airstrip. The campaign to oppose the airstrip lasted eighteen months before the government finally decided against using Towra.

The dredging of the seabed of Botany Bay to service large ships and the runway extensions have completely changed the bottom topography, resulting in a new distribution of wave energy throughout the bay with consequent regression of beach fronts.

International recognition

In 1974 Japan and Australia signed a bilateral treaty on migratory wading birds. Representations to the Federal Minister for the Environment on the importance of Towra as a habitat for water birds and other features eventually resulted in the Commonwealth of Australia becoming the registered owner of 270 hectares of land owned by Towra Point Development. Prior to the registration of the transfer of the land, the NSW Government took out an injunction challenging in the High Court the right of the Commonwealth to acquire land at Towra Point. The issue remained unsolved until March 1982 when the land was transferred to the State Government as part of the Commonwealth/State Land Exchange Agreement. It was gazetted Towra Point Nature Reserve on 6 August 1982. After acquisition of additional land, including an addition of 82 hectares in April 1991, the nature reserve comprises an area of 440 hectares. It was the first nature reserve to be established by the Federal Government in any State.

Towra Point habitat was one of only three sites in NSW accorded special protection under the Convention on Wetlands of International Importance (especially as waterfowl habitat), which is commonly referred to as the RAMSAR Convention.

The waters surrounding Towra Point peninsula were gazetted an aquatic


Sand bag wall built to protect the lagoon

reserve on 24 December 1987 and included Quibray Bay, Weeney Bay, Stinkpot Bay and Woolooware Bay. The site was chosen because it is of special ecological significance.

Four species of seagrass are to be found on the seabed, the two most important being strapweed *(Posidonia Australia)* and eelgrass *(Zostera capricom).* The entire seabed in the aquatic reserve was carpeted with sea grasses, but more than one-third has been lost due to erosion.

Aquatic reserves are permanent reserves established to protect biodiversity and representative samples of marine life and habitats. They can also be established to protect important habitat and nursery areas and protected species, or for research and education.

Aquatic reserves are generally small in comparison to marine parks and play a significant role in marine protected area systems.

Currently there are thirteen aquatic reserves declared under the *Fisheries Management Act 1994*. Today there are no less than 43 gazetted RAMSAR sites located across Australia, but Towra Point Nature Reserve was the first!

Wildlife of Towra Point Nature Reserve

Wading birds are among the world's most travelled migrants. They have an endless summer, crossing the equator twice a year as they travel to and from their breeding grounds in the Northern Hemisphere.

During their non-breeding cycle, wading birds, which include plovers, sandpipers, curlews and snipe, descend on the Southern Hemisphere in huge flocks. Some two million of these birds – many weighing as little as 30 grams – make an annual round trip of 25,000 kilometres to Australia.

Rainbow lorikeets feed on the trees in Towra Point Nature Reserve

Reaching Australia in September, the birds feed mainly on invertebrates that live in mudflats. In April they head north again to breed in the Russian far east and Alaska.

Some of the birds that feed on the intertidal flats around Towra Point migrate over 12,000 kilometres from as far away as Siberia, China and Japan. These include the endangered golden plover *(Pluvialis dominica)* and the little tern *(Sterna albifrons)*. Towra Point is also used by many non-migratory waders, such as the endangered pied oyster-catcher *(Haematopus longirostrus)*.

The little tern nests on low areas of sand and shingle. An island adjacent to Towra Point is one of the major remaining nesting sites for little terns in New South Wales.

Wading birds in the Towra Point area are active, small to medium-sized birds. The smallest is the red-necked stint, only 14 centimetres long and a summer visitor from north-eastern Siberia and north-western Alaska. The largest is the eastern curlew, with a length of 61 centimetres. It is a regular spring and summer migrant from north-eastern Siberia.

The population of waders at Towra includes resident and migratory species. Nearly all are seasonal visitors.

The following species have been observed using Towra Point for feeding or other activity: eastern curlew, whimbrel, bar-tailed godwit, grey-tailed tattler and pied oystercatcher.

The Australian Littoral Society (ALS) conducted a major survey in 1977 recording 163 species of insects and 37 species of spiders, considered to be an underestimate of the actual diversity on Towra Point. ALS also recorded eight species of reptiles and four species of amphibians. Included was the eastern long-necked tortoise which is intolerant of saline conditions and apparently is endemic to the freshwater Mirrormere Pond.

Pied oyster catcher

Senator Robert Hill MP, Federal Minister for the Environment, being briefed by the Society's Regional Councillor, Bernie Clarke with Bruce Baird MP, Federal Member for Cook. Towra Point Nature Reserve on 30 July 1996

Eight reptile species were identified by ALS, including three snake species, namely, the red-bellied black snake, marsh snake and small-eyed snake. There is little doubt that a more detailed study would expand this list.

A study of Botany Bay by NSW State Fisheries found that 47 commercial species of fish caught offshore spend their nursery and growing period within Towra Aquatic Reserve.

Following a concerted conservation campaign, commercial trawling was banned in Botany Bay in 1994 to preserve and protect the juvenile fish and crustacea from exploitation.

All amateur fishermen are required to be licensed to fish in and around Botany Bay.

The Wildlife Preservation Society's involvement in Towra

In 1996 Patrick Medway the President of WPSA, attended the International Convention of RAMSAR in Brisbane, Queensland, to mark its 25th anniversary. He met many people vitally concerned with preserving our wetlands and the wildlife that they support. Of particular interest was the growing need to protect the migratory wading birds and their fragile habitats on all sites such as Towra Point.

The Society's Vice-President, Clive Williams, had long been urging the Council of the Society to become involved in a project to galvanise the members into some vital wildlife preservation action. Patrick believed that restoring Towra Point would be such a project. He was convinced from talking to conservationists around the country that the Society should take a lead role and establish a focus on an area of major concern where Australian wildlife and its habitat were in real peril.

Bernie Clarke, an active member and Scientific Advisor of the Society, was well-known as a campaigner for the preservation and conservation of all things to do with Botany Bay. Patrick asked Bernie to accompany him on a boat trip on Botany Bay to see at first hand the state of this very important area of historic, scientific and environmental significance – Towra Point Nature Reserve.

They were horrified by what they saw. The neglect of the area, the beach erosion, the pollution and rubbish washed up onto the beach and mangrove area, and the disturbance by boat owners, was terrible.

The Society clearly had a long way to go to stop the pollution and to redress the neglect by the management of the National Park Service.

In 1989 the National Parks and Wildlife Service (NPWS) had written a draft Plan of Management for Towra Point, but it had never been implemented through lack of funds.

Bernie and Patrick contacted the Federal Minister, Senator Robert Hill, asking him to visit the reserve. On 30 July 1996 Robert Hill visited the bay and reserve and, after an impassioned plea by Patrick and Bernie, promised to assist with a Federal Government grant of $200,000 to review the management of the reserve and enable steps to be taken to mitigate the erosion on Towra Beach.

Senator Hill was no doubt aware of the significance of this site, since it was fully protected by three international agreements, protection not given to the other Australian RAMSAR sites at that time.

The Minister for the Environment, The Hon Bob Debus MP, with Patrick Medway (Chairman of the Steering Committee) and Bernie Clarke at the official launch of the Plan of Management, December 2000

Senator Robert Hill sent the promised Federal funds to the State Government in 1997 and the money was handed over to the NPWS to develop the Plan of Management.

The NPWS formed an advisory committee to revise the plan of management, and the Society was represented on this committee by Patrick Medway and Bernie Clarke. The Society encouraged the formation of a "Friends" group for Towra Point Nature Reserve in 1997.

The then NSW Minister for the Environment, the Hon Pam Allan MP, officially launched the new 'Friends of Towra Point Nature Reserve' at the reserve on Saturday 8 February 1997 before a crowd of 135 conservation supporters.

This new conservation group grew out of a series of successful meetings between the Society and the Sutherland Shire Environment Centre and the National Parks and Wildlife Service on how to provide future support for Towra Point Nature Reserve.

The 'Friends Group' continues to assist the NPWS officers responsible for the reserve in all aspects of management, including bush regeneration, exotic weed removal, tree planting, protection of the Towra Lagoon and its associated wildlife, with an emphasis on providing protection for the migratory wading bird population and their habitat protected under the international RAMSAR agreements.

In 1999 the Friends Group won the coveted National Parks Foundation Award – Excellence in Conservation - against strong competition from many other conservation associations across New South Wales.

Peter Stevens, District Manager of NPWS, assisting Pam Allen MP, Minister for the Environment, in planting new native trees on the Towra Point Nature Reserve - 8 February 1997

In September 2000, the Society held the Earth 2000 Conference. At a dinner afterwards to honour the guest speaker, Professor Jared Diamond from the USA, Patrick Medway was amazed when Bob Debus lent over and whispered 'I have the money for Towra!' The Councillors of the Society present at the dinner were very excited and went into a huddle at the end of the table to discuss the details of what the Minister had said. The Minister added that he sat on a special committee for the Environmental Trust that is used to assist in rehabilitation works around the state. The main source of funding for this trust comes from fines imposed on polluters and others convicted of damaging the environment in some way. The Minister told Patrick that he had recommended that at least $1 million be set aside in this Trust to pay for the rehabilitation of Towra Beach.

After much work and many frustrations in getting the management plan accepted by NPWS, the new management plan for the beach habitat was completed and officially launched by the then Minister for the Environment, the Hon Bob Debus MP, in December 2000.

Throughout 2001 and 2002 the Friends struggled to implement the Plan of Management and to address the serious erosion along Towra Beach. Much work was carried out in preparing the Environmental Impact Statement for the beach erosion repair work.

In 2003 the Friends group was awarded a National Heritage grant to fund an extensive exotic weed removal campaign across the reserve. Conservation Volunteers Australia provided valuable assistance in this important conservation work.

Following the development of the Plan of Management and funding by the Minister for the beach nourishment work for Towra Beach, the Steering Committee, now chaired by Patrick Medway, met and prepared the vital Environmental Impact Statement in 2003.

Formal approval was given to commence the renourishment work on the beach on 15 June 2004 and commenced immediately.

Dredging work being carried out on the restoration of Towra Beach

Bernie Clarke and Patrick Medway on Towra Beach

Towra Beach after restoration work was completed. This beach is now an extended habitat for migratory wading birds

Friends of Towra Point Nature Reserve on a working bee - 7 March 2003

The beach nourishment work was finished on 31 October 2004 and planting of native trees on the new dunes commenced.

Towra in 2010

Today, a significant feature of Towra Point Nature Reserve is a peninsula of sand known as the Elephants Trunk. This protective arm of sand is known locally as Stinkpot Bay. This bay is now ringed with mangroves and provides an important food source for local birds and fish.

The Towra Lagoon has been mainly re-vegetated with indigenous native plants by the Friends of Towra over recent years. The restored beach area now protects the lagoon from salt water invasion during high tides and storms. This beach restoration work was the result of a major effort by the Wildlife Preservation Society of Australia and the National Parks Service from 1996 to 2004 and is a credit to 'people power'.

It is now essential that all development in and around Botany Bay and Kurnell Peninsula take full account of the need to protect the Towra Point Nature Reserve, Australia's first internationally recognised wetland for migratory wading birds.

Towra 12th March 2004

Towra 6th August 2004