## The Natural History Society of South Australia Inc.

The Natural History Society of South Australia is dedicated to the preservation of Australia's native flora and fauna. The Society is comprised of a small band of enthusiastic members who dedicate their time and resources to actively promote, by example, the preservation of the native flora and fauna of Australia in their native habitat; promote the collection and dissemination of scientific knowledge; record and maintain the Australian natural and cultural heritage; promote the establishment of geological marine and wilderness reserves, national parks and conservation parks; organise, develop, stimulate and coordinate public demand for ecologically sustainable use of the environment; and promote non-destructive scientific research.

#### **Cullen Reserve**

The Natural History Society of South Australia acquired the Reserve in 1968 when local fisherman Dick Cullen wanted to sell some land for which he had no further use and it was Rick Cawthorne, a local land agent, who suggested he give it to the Natural History Society. Rick Cawthorne had previously enlisted the aid of the Society over local fishermen illegally using wallabies as bait for cray fishing. The Society had written to the appropriate Environment Minister and had the practice stopped.

Cullen Reserve consists of twenty nine hectares of recovered bushland, adjacent to Lake Fellmongery in Robe South Australia. There is an old well on the Reserve close to Lake Fellmongery, which it is understood from local historical information was used to water the horses that carted wool to the Lake for washing. Once title to the land had been handed over by Dick and Ida Cullen, the Society began to revegetate the land that had been used for trap shooting and as a dump.

The once degraded block now has a covering of local acacias, casuarinas and eucalypts all grown from seed collected from the site and replanted there. These seedlings originally had to be protected from rabbits with a wire mesh fence. There is an extensive ground covering of muntries (*Kunzea pomifera*) on the Reserve and the Society recently became aware of a rare and endangered orchid, the Little Dip spider orchid (*Caladenia richardsiorum*), on the Reserve. Society members visit the Reserve annually to remove weeds and maintain fences with the guidance of the local Environment Officer from Mount Gambier. They have also had a "Trees for Life" group visit for weeding.



Wombat burrow at Cullen Reserve

The Natural History Society is in contact with the local council to put in walking tracks for tourism in the area. Many local birds visit the Reserve, including red capped robins, blue wrens and yellow robins. Visits to the Reserve are encouraged and the Society welcomes donations for its upkeep.



Red capped robin

## Moorunde Wildlife Reserve

In January 1967 the Society lobbied the Minister of Agriculture to take measures to protect Southern hairy-nosed wombats from extermination by setting up a wildlife reserve in the Nullarbor. This was not successful, but it made Jack Conquest aware of the Society's interest in native wildlife and he asked what the Society was going to do about the starving wombats in the Blanchetown area.

Blanchetown is on the River Murray in the mallee area of South Australia. A number of our members went with Jack to a sheep station, which carried the largest concentration of wombats in the area, and during a two day expedition many unhealthy and dying wombats were seen. There were several carcasses of recently dead wombats. The paddocks of the station were almost completely denuded of ground-cover vegetation. In December of the same year members of the Society witnessed an air-borne dust storm as a result of a severe drought over much of this region of South Australia.



Wombat at sunset on Moorunde

At this point it is worth noting that the Southern hairy-nosed wombat is different from the common wombat in that it prefers to live in the semi-arid areas, making its burrows under the hard limestone shelf found throughout many regions of the mallee. These burrows can reach up to one hundred metres under the ground and they are the wombats' temperature control system by keeping out of the sun during the day and coming out only at night or during cooler days. Research has shown that it is humidity that most regulates wombats' emergence from their burrows. During drought conditions wombats appear above ground more often as they are hungry and need to warm up in the sun.

The Society decided that the owner of the sheep station should be asked if he would be willing to sell part of the station for the establishment of a reserve. It was hard times with the drought, so he agreed that he would be willing to sell 3,000 acres at a price of \$4 per acre. It was decided that an appeal would be launched to raise the necessary money.

The Duke of Edinburgh supported the campaign through his message of congratulation to the Natural History Society. Much voluntary assistance was received for establishing the Reserve. Perhaps the most significant was clearance of vegetation for fencing around the Reserve. The naming of the Reserve was in recognition of the post of Moorunde established by Edward John Eyre to administer the area as resident magistrate, which he named after the meeting place of three aboriginal tribes in the area.

#### Fencing and watering Moorunde

A five wire fence with strainers of railway irons and star droppers reaching five miles along the northern and eastern boundaries of the Reserve was built by contractors to separate the property from the rest of the sheep station, with much of the work done voluntarily by members and friends. The eastern fence was in more difficult terrain and wire netting was added to deter sheep.



Dragon lizard at Moorunde

Instead of piping water from the nearby Murray-Adelaide pipeline, as agreed to at the inaugural public meeting, the Society decided to build water collection points with galvanised iron from which rainwater was collected and stored in several tanks. From these the water was piped to a ballcock-regulated cistern and from there to a small pond constructed of cement and limestone rocks to blend in with the surroundings. Rainfall gauges were also installed at the same time. As a result rainfall data on the Reserve has been collected going back to 1967. More gauges have since been installed making a total of five at widely spread locations on the Reserve and it is often surprising how much variation in rainfall there is over the 2,020 hectare area. The higher level is usually recorded amongst the more heavily wooded areas.

#### Management of the Reserve

From the outset the Society adopted a policy of minimum human interference on Moorunde. In 1988 this was formally incorporated into a management plan for the Reserve. This has meant that any recovery of vegetation has been through natural regeneration, rather than through human-assisted planting or seeding. A few attempts were made to plant seedlings in the early years but these failed. Natural seeding has met with greater success and, since the fencing out of cloven-hoofed stock over the past forty years; the re-establishment of many plants has been noted. Many that were severely pruned to a mushroom shape by sheep, particularly sheep bush and native hops, have returned to their former habit that extends to ground level thus providing cover for wrens and other small birds.



Wombat at Moorunde

Over the forty years since the exclusion of sheep, the Society has observed the recovery process, recording on film the gradual re-establishment of many plants. Mosses and lichens were the first recolonisers since they can live on bare soil, deriving their nitrogen from the atmosphere and beginning the process of returning the soil to humus. These plants have not returned on the adjacent station where sheep still graze. There are many species of mosses and lichens on Moorunde and in aerial survey photos we can see that the Reserve is visibly darkened compared with the neighbouring property and the fence line is clearly visible. It is believed that this is due to the lichen and moss cover that is largely absent on the adjacent property.

Many of the plant species indigenous to the Moorunde area may only re-establish after a significant and sustained rainfall that may come only once every ten or eleven years. Some of these plants are eaten by rabbits, which are not excluded by the boundary fence. Hence very few new native pines, whose tender shoots are particularly attractive to rabbits, were established until poison baiting reduced the rabbit numbers. The use of poison baits was against the policy of non-interference in natural processes, however, in 1995, in response to a local council directive, the Society had to bait with 1080 for the first time. It was estimated that over 5,000 rabbits were killed that year. Apart from the legal obligation, it was obvious that rabbits were causing a substantial stress to the native vegetation of Moorunde. The baiting program has been continued each year ever since. Calici virus has reduced, but not eliminated, the need for baiting. Foxes, goats and cats also occur on Moorunde and further management dilemmas arise over the problems caused by these introduced pests.

The re-establishment of several other plant species such as sheep bush and native hops occurs after a wet year. Amongst the more remarkable recoveries has been two greenhood orchid species (*Pterostylis biseta and Pterostylis nutica*), which we first found on the Reserve in 1980, fourteen years after the sheep were removed. In 1995 over 2,000 plants of these species were counted on the Reserve. They grow on the shady southern side of bushes where mosses and lichens keep the soil moist and there is some leaf litter. The mosses also provide a nitrogen source that sustains termites. Moorunde is now rich in such microfauna as termites and other insects that are in turn food for other species such as echidnas and birds.

The Society has deliberately avoided removing fallen wood on the Reserve as it also provides food for termites. Wood can also provide scratching posts for wombats and protects seeds and seedlings of other plants that can then recolonise an area.



Wombat burrow on Moorunde

The water collection points described above are a source of dilemma for the Society as they think that wombats never use this water as any droppings or other evidence of their visits has ever been recorded. As this is the only surface water on the Reserve, it seems likely that these remarkable animals have evolved without the need for water and may be able to obtain all they need from their food. However, they have sometimes been seen licking dew from the rocks in the early morning. The water points are used by a variety of birds, red and grey kangaroos and emus that are attracted to them in such numbers that the areas immediately adjacent to the ponds become quite bare and dusty. National Parks officers have suggested that the Society should take the water points out. However, if they were to do this, kangaroos and emus would only be able to obtain access to free water in the hostile environment of local stock water troughs or from the River Murray several miles away. Moorunde is after all a wildlife sanctuary for the protection of all locally indigenous native species, not just for wombats.

The Society has conducted a long running wombat population study on the Reserve using a chart recorder wired up to flaps with micro switches at twenty one burrow entrances in a warren to record wombat activity. After the wombats stopped digging up the wires they were able to get data that allowed the Society to estimate wombat numbers across the whole Reserve. One of the immediate and unexpected effects of fencing the Reserve off was that wombats are rarely seen out during daylight hours on Moorunde, although from observations the Society knows that they are present in very good numbers. It is estimated that the number of wombats on Moorunde has increased from about two hundred in 1968 to about six to eight hours on the adjacent sheep station, particularly during autumn and winter before the winter rains allow the grasses to regrow.

Moorunde supports a greater standing crop of grasses than adjacent properties, thus it seems that the removal of sheep as the wombats' main niche competitor, other than rabbits, meant that the wombats on Moorunde were fed well enough that they no longer need to supplement the energy they obtain from food by basking in the sun.



Experimental warren recorder flaps

The Society has taken the view that the Reserve is for the wombats. Hence it has been their approach that any activities, including research projects, should be totally non-invasive. Grazing exclosures are one example of an approach that has allowed them to monitor grazing pressures on the Reserve. Exclosures are fenced off areas that are used to exclude either rabbits, or kangaroos and wombats, or both.

From these it has been concluded that rabbits are a primary competitor for wombat food on Moorunde. Kangaroos also place considerable pressure on the feed available on the Reserve, particularly in seasons when feed is in short supply. The invasion of weeds such as horehound and stemless thistles is a continuing management problem. To keep these in check regular monthly working bees are held and as a result the Reserve is one of the most weed free in the state.

The efforts made by the members of the Natural History Society of South Australia to publicly raise the funds needed to purchase a reserve to conserve the Southern hairy-nosed wombat was a landmark in Australian wildlife conservation. Plant recovery since the sheep were fenced out on Moorunde Wildlife Reserve thirty three years ago has been slow but spectacular. The slowness of recovery is not surprising given that the Reserve is located on an area of low rainfall. At the same time as the vegetation recovery there appears to have been an improvement in the numbers of the Southern hairy-nosed wombats.

It is the fortieth anniversary of Moorunde Reserve this year.

## Lake Short

In recognition of the work done by the Society, another parcel of land near to Moorunde was given to the Society in 1992 by the South Australia Lands Department to be managed as a wildlife reserve. Remarkable recovery of vegetation on this Reserve has been achieved after the sheep were fenced out.



Glen Taylor by the new sign at Lake Short Reserve ca 1992

In 1993 the Natural History Society of South Australia Inc took over management of Lake Short as a sanctuary and wildlife reserve. This ephemeral lake is situated near Blanchetown in the mallee and being in an area of very low rainfall fills only infrequently. The Lake was originally designated as a water reserve by the government since it is sometimes a rare lake in an otherwise parched environment. However, a Lands Officer visiting such reserves discovered that the area he thought was a water reserve had sheep grazing on it. He arranged for the area to be given over to the Natural History Society based on their efforts on Moorunde Wildlife Reserve. Just as the Society became aware of this arrangement, the Lake flooded in a rare November downpour in 1992. The Lake was filled to its edges covering over thirty four hectares to a depth of several metres in the middle. It had water birds, including pelicans, and there were even fish in it for a while (put there by locals). When the water finally dried out several months later some Society members noticed some seedlings of swamp box, the local eucalypt, sprouting. Since there were still sheep using the area, the few seedlings were protected with wire netting surrounds. A larger area was fenced off a few months later with the aid of a grant from Bushcare and several other clusters of seedlings were noted and protected. After another year more seedlings were noted and protected.

The next year the Society fenced off the whole Reserve and immediately began to see more and more eucalypt seedlings. Now, eleven years on, the Reserve is covered with over 2,000 seedlings and those that were originally protected have already grown into trees of five metres or more. This shows the importance of the rare flooding events to such areas in the mallee.

In 2006 the Society again added to the land for wombat protection by acquiring a further 4,900 hectares of land adjacent to Moorunde. This was again made possible by generous donations from their members and from like-minded societies, such as the Wildlife Preservation Society of Australia. The expanded Moorunde Reserve now encompasses 6,900 hectares and it is estimated it contains around 2000 wombats as well as many other native fauna and flora species.

The Natural History Society is proud of this regeneration feat due to the efforts of many members and volunteer helpers. Visitors to the Reserves are encouraged and any donations towards their upkeep are welcome.

The Natural History Society of South Australia can be contacted through their website at <u>www.nathist.on.net</u>

## The Wildlife Preservation Society of Australia Community Conservation Award for 2007

At the 99<sup>th</sup> Annual General Meeting of the Wildlife Preservation Society of Australia, Dr Clive Williams announced that the Community Wildlife Conservation Award for 2007 was awarded to the Natural History Society of South Australia Inc.

# Acceptance speech by Peter Clements, President of the Natural History Society of South Australia

I am very honoured to accept this award on behalf of the Natural History Society of South Australia. The Society, which was re-established in 1960 after having a brief twelve month existence in 1857, has maintained a goal of practical conservation in that all of our efforts go towards the establishment and maintenance of wildlife reserves of which we now have five. As a result of a fundraising campaign in 1967/68, after a severe drought hit South Australia, the Society was able to purchase 2,000 hectares of habitat of the Southern hairy nosed wombat near Blanchetown. This became Moorunde Wildlife Reserve, which has been maintained through a purely volunteer effort ever since. We estimate that in 1968 there were approximately two hundred wombats; and the latest count is around six hundred on Moorunde. In 2006 we were offered the chance to extend the Reserve with the sale of adjacent sheep property, which had significant numbers of wombats on it. We were keen to protect the habitat since the wombats depend on limestone shelves under which they build their up to one hundred metre-length burrows. The purchase was made possible by many generous donations. including one from the Wildlife Preservation Society and we have now been able to extend the reserve to a size of 6,900 hectares or nearly seventy square kilometres and we estimate that there are nearly 2,000 wombats on the new combined reserve. The generosity of donors has been extraordinary and the support from many like-minded societies such as yours has been invaluable in achieving this wonderful goal for the protection of wildlife habitat. We thank the Wildlife Preservation Society for this national recognition of the work of a lot of supporters in bringing this about.



Peter Clements accepts the award on behalf of the Natural History Society of South Australia, Dr Clive Williams (Vice President of the Wildlife Preservation Society of Australia) and Ian Cohen MLC