



Participants gathered around an old Brolga nest as David Coutts speaks about fox control. Photo: Ray and Cherie Draper

Of great concern is the fact that immature Brolgas comprised a mere three per cent of the population represented at these two major flocking sites. While this is typical of recent estimates for the south-west Australian population, it is in sharp contrast to the northern Australia population where immature birds typically comprise between ten and thirty per cent of the population. It is feared that the ageing south-west Brolga population may crash in the near future if we are unable to increase the rate of recruitment of young birds into the flock.

The new south-west Victoria Brolga research project is now underway and will utilise satellite and VHF radio tracking techniques to track Brolga movements throughout the year. Researchers have been busy practising their Brolga capturing methods on the captive Brolga population at Serendip Sanctuary. They will begin capturing, banding and fitting transmitters to wild Brolgas in the near future. While the project will examine many aspects of Brolga ecology and population dynamics, an improved understanding of Brolga migration and daily movement patterns will provide vital information to guide the location of wind turbines.

After lunch, Trust for Nature's regional manager for the Glenelg Hopkins region, Sue Mudford, led a discussion on the possible reformation of a 'Friends of the Brolga' group. Field day participants compiled a list of possible objectives for the group and a small steering committee was formed. The committee would welcome new members and will meet in the near future to consider the objectives of the group and determine further actions.

The field day culminated in an inspection of a Brolga nesting site on 'Mooramong'. Many of the locals lucky enough to have Brolgas utilising habitat on their land spoke of their frustration at seeing Brolgas fail to raise chicks year-after-year. They also discussed various methods they had used to help 'their' Brolgas and indicated that they wanted to know more about how they could enhance Brolga habitat on their land and increase the success rate for nesting Brolgas.

All of the participants who filled in a feedback sheet indicated that they had learnt a lot about Brolgas and the challenge of conserving them in south-west Victoria. BOCA would like to thank Sue Mudford and Ray Draper (regional Trust for Nature staff), David Coutts (BOCA), Richard Hill (DSE), Inka Veltheim (PhD researcher) and the management of 'Mooramong' for making the day a big success.

Can You Help?

Inka Veltheim is keen to enlist the help of locals and other volunteers in recording observations of Brolgas (particularly those that have been banded) over the next three years. Please record and report **any** sightings (time, place, colour of band, markings on bands) of banded Brolgas. Inka can be contacted via email, inka_veltheim@yahoo.com.au or via Jenny Lau at BOCA National Office on 03 98775342.

The Problem With Plastic

By Jenny Lau

In the North Pacific Ocean there is a subtropical gyre where winds are light and water circulates very slowly. It is twice the size of Britain and it has become one of the largest garbage dumps on earth. Within the gyre there are **six** kilograms of plastic for every kilogram of plankton!

It is estimated that 10 per cent of the 100 million tonnes of plastic produced each year ends up in the sea. While some is blown or washed into water from land, a lot of plastic is dumped direct into the sea from a variety of marine vessels. Some plastic will eventually sink to the ocean floor or be washed up on shorelines but much of it continues to float on the surface of the sea for years.

The problem with plastic is that it does not readily break down. Over time it may break into smaller pieces, but irrespective of the size, fragments of plastic are a threat to wildlife when they are ingested or cause entanglement.

For a young animal, plastic entangled around the neck may reduce their ability to feed properly resulting in malnutrition or stunted growth. As the animal grows, the plastic necklace



Rubbish dumped at Reedy Swamp near Shepparton, 6 January 2009. Photo: Paul O'Connor



"Trash on the Wing": Australian Pelican with a plastic bag entangled around its left wing, Reedy Swamp. Photo: Paul O'Connor

may cause strangulation and death. Plastic that becomes entangled around the body may lead to infection, reduced mobility, amputation of limbs, and death through drowning, starvation or smothering.

Ingested plastic has a number of potential impacts. Large fragments may cause a physical blockage of the digestive system leading to internal injuries and infection. Smaller fragments may fill the stomach giving a false sense of fullness leading to malnutrition, starvation and ultimately death. Chicks are particularly vulnerable as they have high rates of ingestion and low rates of regurgitation. Ingested plastic can alter buoyancy, reducing the ability to catch prey or avoid predators.

Plastic that has been floating in the ocean for a long period of time becomes a sponge for a range of highly toxic chemicals such as polychlorinated biphenyls (PCBs) and other persistent organic pollutants (POPs). These chemicals may reduce reproductive rates, compromise the immune system and cause chronic illnesses that shorten a bird's lifespan.

At least 44% of the world's seabird species are known to ingest plastic but it is likely that many more species are also effected. Albatrosses, fulmars, shearwaters and petrels are known to be particularly vulnerable. Plastics have been found in the carcasses of dead Snow Petrel chicks in Antarctica. When animals die and decay, the plastic remains and may re-enter the marine environment. Over time a single piece of discarded plastic may cycle through many animals as it breaks into smaller and smaller pieces.

It is estimated that plastic waste kills up to one million seabirds and countless other animals each year.

In recognition of the problem, the Australian Government has listed the impacts of marine debris on vertebrate marine life as a key threatening process under the *Environment Protection and Biodiversity Conservation Act 1999*. In a draft threat abatement plan released last year, key actions include improved waste management practices on land and at sea, campaigns to improve public awareness and education, international collaborations to develop effective, coordinated responses and implementation of wildlife research and recovery actions.

References: Moore, C. J. (2008) *Synthetic polymers in the marine environment: A rapidly increasing long-term threat*. *Environmental Research* 108: 131-139.

UNEP (2006). *Ecosystems and biodiversity in deep waters and high seas*. UNEP Regional Seas Reports and Studies No. 178. UNEP/IUCN, Switzerland.

www.environment.gov.au/biodiversity/threatened/publications/pubs/draft-tap-marinedebris.pdf

Plastic bags – not so convenient

While plastic bags represent a small percentage of the total weight of plastic litter, several features make them particularly insidious and a great threat to wildlife.

Vast numbers of lightweight, high density polyethylene (HDPE) shopping bags are used each year (in 2005 Australians used an estimated 3.92 **billion** plastic bags) and they can take up to 1000 years to break down. Plastic bags are easily blown into rivers and seas, and in the water they bear a strong resemblance to prey such as jellyfish. In Australia between 50 and 80 million bags enter the litter stream each year, so the cumulative environmental impact is enormous.

Unfortunately, the Federal Minister for Environment, Heritage and the Arts, Peter Garratt, has backed away from a pledge to introduce a levy on lightweight HDPE bags. In contrast, the South Australian Government has shown great leadership by phasing out the use of HDPE bags. From 4 May 2009, SA retailers will only be able to supply compostable bags, greengrocer bags, heavy boutique-style bags, 'green' bags and paper bags. Hopefully other governments will follow suit.

At a personal level, we can all help to reduce the plastic menace by considering our options as consumers. We can reduce our use of plastic bags by switching to reusable bags, avoid products with excessive plastic packaging, think twice before buying products that contain lots of plastic (particularly if they have a short life span), recycle plastics wherever possible and take great care when disposing of plastic bags and other plastics that cannot be recycled.

Birds and balloons

This section of the article was developed in response to a letter from Joan Vincent (Bairnsdale) in which she questioned whether balloons, particularly those released en masse to mark special occasions, pose a threat to birdlife.

Unfortunately very little research has been conducted on the issue. Many of the balloons that are released or escape from the clutch of a small hand end up in the ocean where it is difficult to monitor the impact of balloon debris on wildlife. What is certain is that the issue is highly controversial.

The level of threat is thought to depend on the material used to make the balloon and whether the balloon has attachments such as ribbons and plastic disks. The majority of balloons are made of biodegradable latex while others are made from mylar (plastic covered with a thin layer of aluminium).

Most 'lighter-than-air' (helium) balloons used for mass releases, such as at sporting events, are made from latex and are tied with a knot. According to the balloon industry, these balloons reach heights of anywhere up to ten kilometres and

shatter into tiny pieces under the conditions of low temperature and pressure. The industry states that the small fragments degrade over time (at the same rate as an oak leaf) and pose little threat to wildlife.

Those opposed to mass balloon releases argue that it can take more than twelve months for fragments to degrade and that these fragments pose an unacceptable risk to wildlife. No matter how small the fragment, at some level of the food chain there will be an animal small enough to eat it. As they degrade, latex balloons often shred to produce 'tentacle-like' appendages. Shredded balloons look like jellyfish, making them particularly attractive to birds and turtles. Many marine animals have been found with balloon fragments in their digestive tracts.

A percentage of lighter-than-air balloons do not reach the altitudes needed to burst them. Partially inflated, intact balloons return to earth, with many landing in rivers and oceans. These too resemble a floating jellyfish. A partially inflated, intact balloon can completely block an animal's digestive tract causing slow death by starvation.

Most weather balloons are also made from latex. The US National Weather Service and Australia's Bureau of Meteorology (BOM) release around 75,000 and 30,000 weather balloons, respectively, each year. The BOM's balloons are tied with cotton string that has a breaking strain of less than 10 kilograms. While the BOM retrieves as many of its ozone-type radiosondes (the measuring instruments attached to the balloons) as possible, the vast majority of radiosondes and weather balloon debris are never retrieved.

There is widespread agreement that balloons made from mylar and those with synthetic attachments are a big threat to wildlife. These objects can persist in the environment in almost 'mint' condition for many years. Animals can become entangled in ribbons and may ingest balloon fragments and plastic ties. In one account, the Australian Seabird Rescue group (ASR) found a Giant Petrel close to starvation with a string hanging from its mouth. After dosing the bird with olive oil, an orange balloon with a plastic disk and 30cm of synthetic ribbon was retrieved from the bird. Without intervention from the Rescue group, the bird would have died of starvation.

The risk of balloons to wildlife is gaining some recognition. In the UK, the Marine Conservation Society has a campaign entitled 'Don't Let Go' to raise awareness of the environmental risks associated with balloons.

In 2000, after five years of lobbying by members of the ASR, the release of more than 20 lighter-than-air balloons (a mass release) was made illegal in NSW. Similar legislation was passed by the ACT Government in 2002.

Balloons are specifically listed as an element of harmful marine debris under the *Environment Protection and Biodiversity Conservation Act 1999*. BOCA is investigating whether the Australian Government has the capacity to legislate against mass balloon releases, otherwise, each State and Territory must be lobbied to introduce its own legislation to ban mass balloon releases.

References: www.mcsuk.org/mcsaction/pollution/balloons
www.balloonartists.com.au/environment.htm
www.fourthcrossingwildlife.com/WhatGoesUp-LanceFerris.htm



Members of the Australian Seabird Rescue used olive oil to remove a balloon fragment from Northern Giant Petrel. Photos: Australian Seabird Rescue