



# Helium Balloon Litter Background Paper

June 2015

## Status of this Background Paper

This Paper has been prepared through the Municipal Waste Advisory Council (MWAC) for the Western Australian Local Government Association (WALGA). MWAC is a standing committee of WALGA, with delegated authority to represent the Association in all matters relating to solid waste management. MWAC's membership includes the major Regional Councils (waste management) as well as a number of Local Government representatives. This makes MWAC a unique forum through which all the major Local Government waste management organisations cooperate. This Paper therefore represents the consolidated view of Western Australia Local Government. However, individual Local Governments and Regional Councils may have views that differ from the positions taken here.

This Paper was endorsed by MWAC on **Wednesday 24 June 2015**.

## Executive Summary

The Helium Balloon Litter Background Paper has been developed by WALGA to provide information on the impacts of releasing helium balloons into the environment and identify options for Local Governments looking to minimise litter from balloons.

Historically, balloon releases have occurred as part of community events or special commemorative occasions. It is often seen as an activity which does not have an environmental impact. However, research indicates that releasing helium balloons can have a detrimental environmental impact.

While balloons may eventually break down into smaller pieces in the environment, they do not breakdown quickly or biodegrade. There may also be attachments to the balloons which do not break down. Recent Australian research shows that turtles consume balloon fragments in preference to other types of plastic marine debris. Studies also show that balloons are consumed by marine birds.

Local Governments have the ability to control what activities occur at their events and events held on Local Government property. Council can adopt a position which prohibits the release of helium balloons at Local Government events and include this prohibition when requests to use Local Government reserves are received.

There are a number of alternative options to releasing helium balloons that can be promoted by Local Government. These include special plantings, fixed streamers, flags, banners, bunting and dancing inflatables, kites and pinwheels, bubble blowing, lighting candles and coloured lights.

WALGA is seeking legal advice as to whether the provisions of the *Litter Act 1979* apply to the release of helium balloons.

## Background

Helium balloons are a common sight at community events and special occasions. Unfortunately balloons released into the air end up scattered in the environment as litter. Littered helium balloons present a negative impact on the environment and wildlife, particularly birds and marine animals.

CSIRO has conducted a national marine debris project to determine the sources, distribution and ultimate fate of marine debris, including the exposure of marine wildlife to debris. The vast majority of debris along Australia's coastline was found to be plastic. However balloons were also present and demonstrated to be a concern for wildlife. Two studies in 2010 and 2012 around North Stradbroke Island, near Brisbane, identified the type of marine debris ingested by adult and juvenile short-tailed shearwaters. The study found that the birds disproportionately selected balloons, rubber and hard plastics for consumption<sup>i</sup>.

Between 2006 and 2011 CSIRO investigated the prevalence of marine debris ingested by turtles in Queensland<sup>ii</sup>. The study provides evidence for the disproportionate ingestion of balloons by marine turtles. The two marine turtle species studied did not significantly differ in their probability of ingesting debris but smaller turtles feeding in the pelagic zone (mid ocean level) were significantly more likely to have ingested debris (54.5% of pelagic feeding turtles had ingested debris, whereas only 25% of benthic (bottom ocean level) feeding turtles were found with debris in their gastrointestinal systems). The two species also exhibited different selectivity ratios for ingesting debris, with pelagic feeding turtles showing a trend for rubber items such as balloons. Of the 41 pieces of rubber found inside all turtles, 32 pieces (78%) were fragments of balloons.

When helium balloons are released into the environment, they rise to the height of about 8 km and undergo "brittle fracture" in the low temperature, where the rubber shatters into long strands and scatters over the ground or water below (see Figure 1)<sup>iii</sup>. The balloon fragments resemble jellyfish or squid, which may be the cause for the ingestion selectivity in turtles.



Figure 1: fractured balloon<sup>iv</sup>

Over 25 years the Ocean Conservancy's International Coastal Cleanup has found over 1.2 million balloons, roughly 0.7% of the total amount of debris collected worldwide<sup>v</sup>. Although helium balloons and other rubber items make up only a small fraction of the total amount of debris collected, that turtles may be selectively ingesting balloons and other rubber provides support to Local Government policy makers wishing to address mass balloon releases.

## *Turtles at risk in WA*

Six species of turtles are found in WA waters<sup>vi</sup>:

- Green (listed as Vulnerable)
- Hawksbill (listed as Vulnerable)
- Loggerhead (listed as Endangered)
- Flatback (listed as Vulnerable)
- Leatherback (listed as Endangered)
- Olive Ridley (listed as Endangered)

Green turtles feed throughout the entire Great Barrier Reef. Shark Bay is probably the most southern major foraging area for turtles from the north-west shelf population of green turtles in Western Australia. While adult green turtles feed mostly on seagrasses and algae, immature green turtles are carnivorous. Immature green turtles spend five to ten years feeding in the pelagic zone, eating jellyfish, plankton and fish-egg cases<sup>vii</sup>.

Hawksbill turtles are found around the north-west shelf of Western Australia, with significant nesting areas within the Dampier Archipelago and the Montebello Islands. Lower density nesting is known from the Lowendal Islands, Varanus, Barrow, and Muiron Islands and the mainland. This is one of the largest hawksbill turtle populations remaining in the world. Pelagic feeding immature turtles mostly eat plankton but adult hawksbill turtles do eat jellyfish, octopus and squid<sup>viii</sup>.

Loggerhead turtles are found in tropical and subtropical waters. The major nesting areas for the Western Australian population include the Muiron Islands, Ningaloo Coast south to Carnarvon and islands near Shark Bay, including Dirk Hartog Island. Juvenile loggerhead turtles are carnivorous, feeding primarily on benthic invertebrates. They rarely eat jellyfish<sup>ix</sup>.

Flatback turtles are endemic to Australia and have major nesting sites during mid-summer in the Kimberley and Pilbara regions. The Flatback turtle is carnivorous, feeding mostly on soft bodied prey such as sea cucumbers, soft corals and jellyfish. Flatback turtles lack a pelagic life stage, remaining in the surface waters of the continental shelf. They feed mainly on benthic organisms in subtidal, soft-bottomed habitats<sup>x</sup>.

The Leatherback Turtle is a pelagic feeder, found in tropical, subtropical and temperate waters, including south-western Western Australia. The leatherback turtle is carnivorous and feeds mainly in the open ocean on jellyfish and other soft-bodied invertebrates<sup>xi</sup>.

The Olive Ridley turtle is found Joseph Bonaparte Gulf in Western Australia. Adult Olive Ridley turtles feed on jellyfish but little is known about the pelagic feeding immature turtles<sup>xii</sup>.

Leatherback, Flatback and Green turtles are most likely to be at risk of balloon ingestion feeding on jellyfish in the pelagic zone.

### *How are helium balloon releases regulated in Australia?*

Currently no Local Governments in WA have formal policies restricting the release of balloons. However, recently the Town of Victoria Park adopted a Council position to:

- Not organise the release of balloons at public events organised by the Town
- Not endorse the organised release of balloons at outdoor events held on reserves with the Town
- Include information regarding Council's position on balloon releases in reserve booking information.

Some examples of Balloon release regulation from other States include:

- Sunshine Coast Council has banned the release of all helium balloons within the Local Government district through the [Local Law No. 3 \(Community Health and Environment Management\) 2011](#).
- In NSW it is illegal to release 20 or more gas-inflated balloons under the [Protection of the Environment Operations Act 1997- Amendment \(Balloons\) Act 2000](#). Released balloons must not have any attachments.

## Legal Position

The *Litter Act 1979* makes provisions for the abatement of litter and illegal dumping in Western Australia. Under the Act litter includes all kinds of rubbish, refuse, junk, garbage or scrap and any articles or material abandoned or unwanted by the person in possession thereof. Materials become litter when they are deposited on land or waters, which could be interpreted to mean that helium balloons released into the air are not litter until they land.

The specification in the Act is as follows:

### **Part IV – Prevention of Litter**

#### **23. Littering, offence**

*Any person who deposits litter, or causes litter to be deposited, on any land or on or into any waters commits an offence unless the litter is deposited —*

*(a) on private land by consent; or*

*(b) in an appointed area; or*

*(c) in a place or receptacle set aside or provided for that purpose; or*

*(d) on land adjacent to private land by arrangement with, or at the invitation of, a public authority with a view to the litter being collected and removed by the public authority.*

#### **Penalty:**

*(a) for an individual, a fine of \$5 000;*

*(b) for a body corporate, a fine of \$10 000.*

An authorised officer (which includes members of Council or Local Government staff in the district of the Local Government) may issue an infringement for littering offenses.

Keep Australia Beautiful recently sought advice from the State Solicitors Office (SSO) and were advised that the authorised officer must be certain the balloon actually did fall to the ground/water and be linked to an actual event. Research by the SSO indicates that balloons shattering into miniscule pieces may create a reasonable doubt as to whether or not they did fall to the ground. Consideration must also be given to the public interest in prosecuting such offences

The circumstances Local Governments may issue infringements for balloon littering are currently unclear. WALGA is seeking legal advice to determine what opportunities are available to Local Government seeking to infringe balloon littering.

## Recommendations for Local Government

Given the negative environmental impact of littered balloons, it is recommended that WA Local Governments adopt a formal Council position regarding organised helium balloon releases.

The following are ways that Local Governments could reduce balloon litter:

1. Not undertake the organised release of helium balloons at public events held by Local Government
2. Prohibit the organised release of helium balloons at events held on public reserves
3. Promote that Local Government does not support helium balloon releases in reserve booking information, and as a condition of use
4. Promote greater awareness in the community of the impact of balloons and other litter in the environment
5. Encourage alternatives to the release of helium balloons.

## Alternatives to Helium Balloons

There are a number of more sustainable alternatives to helium balloon releases that Local Governments can use at public events and promote to their communities. These include:

- Plant in remembrance: gifts of seeds, seedlings or planting native trees or starting community gardens provide a more permanent act of remembrance like park benches
- Fixed streamers, flags, banners, bunting and dancing inflatables: colourful, reusable and weather resistant
- Ribbon dancers
- Kites and pinwheels
- Bubble blowing
- Lighted candles and luminaries
- Coloured lights.

## Conclusion

Recent Australian research shows that balloons entering the environment can have a negative impact on wildlife. It is suggested that WA Local Governments work towards reducing the amount of helium balloon litter in the environment by discouraging the organised release of helium balloons on public land, and promoting alternatives. These recommendations are provided for Local Governments to use in developing a formal position and to encouraging more consistent practices across WA.

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<sup>i</sup> Acampora, H., Hardesty, B. D., Townsend, K. and Erzini, K. (2014). *Plastic ingestion by short-tailed shearwaters (Puffinus tenuirostris) in northern Australia*. Proceedings of the International workshop on fate and impacts of microplastics in marine ecosystems.

<sup>ii</sup> Schyler, Q., Hardesty, B. D., Wilcox, C. and Townsend, K. (2012). To Eat or not to Eat? Debris Selectivity by Marine Turtles, *PLoS One*, 7(7), doi:10.1371/journal.pone.0040884

<sup>iii</sup> Burchette, D. K. (1989). *A Study of the Effect of Balloon Releases on the Environment*.

<sup>iv</sup> Schyler, Q., Hardesty, B. D., Wilcox, C. and Townsend, K. (2012). To Eat or not to Eat? Debris Selectivity by Marine Turtles, *PLoS One*, 7(7), doi:10.1371/journal.pone.0040884

<sup>v</sup> Ocean Conservancy. (2011). *Tracking Trash: 25 Years of Action for the Ocean*. Retrieved from [http://issuu.com/oceanconservancy/docs/marine\\_debris\\_2011\\_report\\_oc/1](http://issuu.com/oceanconservancy/docs/marine_debris_2011_report_oc/1)

<sup>vi</sup> Government of Western Australia. (2013). *Marine Turtles in Western Australia*. Retrieved from <http://www.dpaw.wa.gov.au/management/marine/marine-wildlife/66-marine-turtles-in-western-australia>

<sup>vii</sup> Department of the Environment. (2015). *Chelonia mydas* in Species Profile and Threats Database, Department of the Environment, Canberra. Retrieved from: <http://www.environment.gov.au/sprat>

<sup>viii</sup> Department of the Environment (2015). *Eretmochelys imbricata* in Species Profile and Threats Database, Department of the Environment, Canberra. Retrieved from: <http://www.environment.gov.au/sprat>.

<sup>ix</sup> Department of the Environment (2015). *Caretta caretta* in Species Profile and Threats Database, Department of the Environment, Canberra. Retrieved from: <http://www.environment.gov.au/sprat>

<sup>x</sup> Department of the Environment (2015). *Natator depressus* in Species Profile and Threats Database, Department of the Environment, Canberra. Retrieved from: <http://www.environment.gov.au/sprat>.

<sup>xi</sup> Department of the Environment (2015). *Dermochelys coriacea* in Species Profile and Threats Database, Department of the Environment, Canberra. Retrieved from: <http://www.environment.gov.au/sprat>

<sup>xii</sup> Department of the Environment (2015). *Lepidochelys olivacea* in Species Profile and Threats Database, Department of the Environment, Canberra. Retrieved from: <http://www.environment.gov.au/sprat>.