

### Costs of plastic bags

More than a billion single-use plastic bags are given out freely each day. While they may be free at the shops, they are costing our earth in many ways.

#### *Phase 1: Production costs*

- The production of plastic bags requires petroleum and often natural gas, both non-renewable resources that increase our dependency on foreign suppliers. Additionally, prospecting and drilling for these resources contributes to the destruction of fragile habitats and ecosystems around the world.
- The toxic chemical ingredients needed to make plastic produces pollution during the manufacturing process.
- The energy needed to manufacture and transport disposable bags eats up more resources and creates global warming emissions.

#### *Phase 2: Consumption costs*

Annual cost to US retailers alone is estimated at \$4 billion. When retailers give away free bags, their costs are passed on to consumers in the form of higher prices.

#### *Phase 3: Disposal and litter costs*

Hundreds of thousands of sea turtles, whales and other marine mammals die every year from eating discarded plastic bags mistaken for food. Turtles think the bags are jellyfish, their primary food source. Once swallowed, plastic bags choke animals or block their intestines, leading to an agonizing death. On land, many cows, goats and other



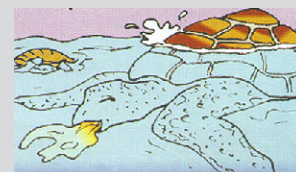
*Those plastic bags in our landfills will be present for up to 1,000 years.*



*It seems as though every time we go to a shop we are given a plastic bag...*



*that we usually throw away! And when these bags end up in the ocean...*



*they can harm wildlife, like turtles, who think they are food.*



*The next time you go shopping, take a cloth bag or basket to the shops, and say "no" to plastic.*

animals suffer a similar fate to marine life when they accidentally ingest plastic bags while foraging for food.

In a landfill, or in the environment, plastic bags take up to 1,000 years to degrade. As litter, they eventually break apart into tiny bits, contaminating our soil and water. The resulting small plastic particles can pose threats to marine life and contaminate the food web. Researchers have found that plastic debris acts like a sponge for toxic chemicals, soaking up a million fold greater concentration of such deadly compounds as PCBs and DDE (a breakdown product of the notorious insecticide DDT), than the surrounding seawater. These turn into toxic gut bombs for marine animals which frequently mistake these bits for food.

Collection, hauling and disposal of plastic bag waste create an additional environmental impact. All plastic bags that are produced and imported into our islands inevitably end up as solid waste, putting an unnecessary burden on our diminishing landfill space and causing air pollution if incinerated.

Recycling requires energy for the collection, processing, etc. and doesn't address the above issues.

Plastic bags thrown in the streets as litter block drains and can lead to flooding during heavy rains, and consequently to property damage. Bags can also act as water traps, with the stagnant water a breeding ground for the mosquitoes that spread diseases like dengue fever.

## What about biodegradable bags?

Biodegradable shopping bags are made of polymers that degrade, or decompose, when exposed to air, water or sunlight. There are two main types:

1) The original biodegradable bags, introduced more than ten years ago, are made from resins containing polyethylene, starches and heavy metals such as cadmium, lead, and beryllium. They are still on the market today.

2) About eight years ago, a second type was invented using starches combined with biodegradable polymers such as polylactic acid. Some of these claim to be fully compostable, meaning that they would break down to organic material suitable for plant growth.

Biodegradable bags may seem like a good idea, but they too are not without environmental cost. The breakdown of starch-based plastic in water consumes oxygen, resulting in oxygen depletion that contributes to algae blooms and the death of marine life. Further, littering could increase as people start to believe that biodegradable bags are less harmful to the environment and will disappear quickly (it takes at least 18 months for most to breakdown).

The jury is still out. Debate continues on whether or not biodegradable plastic bags consume a similar amount of energy during their life as regular non-biodegradable bags. Despite these drawbacks, it is clear that, unlike traditional plastic bags, biodegradable bags break down in landfills and thus ease the burden on diminishing landfill space.

### What can you do?

- Take your own bags to the supermarket – when you leave the house remember your keys, wallet and bags.
- Say “no” to excess wrapping and packaging.

### What is SPREP doing?

SPREP publishes guidelines for policy makers on measures that can be used to discourage the use of plastic bags, and encourage the use of more sustainable alternatives.

In the past, SPREP has sponsored a “bring your own bag” campaign that highlighted the dangers of plastic bags and provided reusable cloth alternatives to shoppers.

## Plastic Bag Facts

- Plastic bags were first introduced 25 years ago.
- Worldwide, more than 500 billion plastic bags are used each year (nearly 1 million bags per minute).
- Plastic bags cause over 100,000 sea turtle and other marine animal deaths every year when animals mistake them for food.
- It is believed that 90% of all rubbish floating in the ocean is made up of plastic.
- Scientists estimate that every square mile of ocean contains about 46,000 pieces of floating plastic.
- A vast area of floating rubbish, “The Plastic Soup,” was recently discovered in the northern Pacific.
- 80% of the plastic bags floating in the ocean originated from open dumps and not from ships.
- The amount of petroleum used to make a plastic bag would drive a car about 115 metres. It would take only 14 plastic bags to drive one mile!
- Some 66 million plastic bags are used annually in Fiji (that’s 83 bags per person).
- Australians consume about 6.9 billion plastic bags annually, or about 326 per person; an estimated 49.6 million bags end up as litter each year.
- The U.S. uses 100 billion plastic shopping bags annually. An estimated 12 million barrels of oil is required to make that many plastic bags.
- 80% of grocery bags in the US are now plastic.
- Taiwan has banned both plastic bags and plastic utensils.
- Only 1 in 200 plastic bags in the UK are recycled.
- In 2006, the Government of Samoa banned the importation of non-biodegradable plastic bags.



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