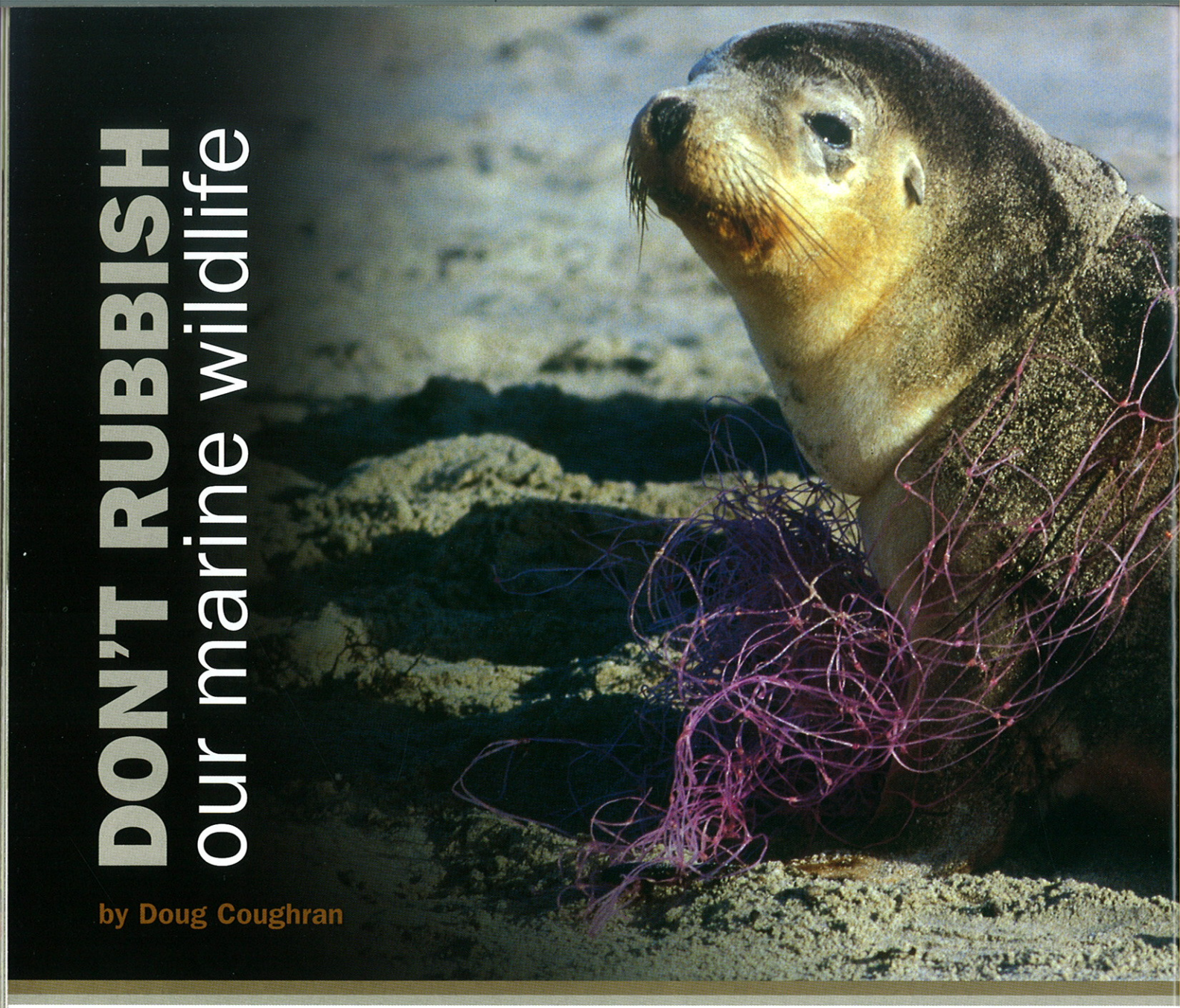
DON'T RUBBISH our marine wildlife



by Doug Coughran

In 2005, Phil Coulthard, from the Bunbury Dolphin Centre, photographed a baby dolphin with a recreational fish hook and rig under its eye that had opened up the flesh. In 2000, an autopsy on a Bryde's whale that died in Trinity Bay near Cairns revealed that it had tightly packed plastic in its stomach. Supermarket bags, food packages, bait bags, sheets of plastic and remnants of garbage bags had all been ingested, but no food was found. Sadly these kinds of incidents are becoming more and more commonplace.

Go for a stroll on any remote island anywhere in the world and you will find plastic litter on beaches. For example, Mystery Bay on Dirk Hartog Island, one of the most remote beaches in Western Australia, is literally covered in ropes, polystyrene floats and plastic rubbish. Where is all this junk coming from? Historically, both the shipping and fishing industries have played a large part in causing the problem, sometimes inadvertently. Plastic is either lost from ships or deliberately dumped. Even plastic dumped on land can be blown for long distances or carried along waterways, eventually ending up in the ocean. Because it takes years to break down, this waste can spend decades riding the world's ocean currents before being dumped on a 'wreck trap' like Mystery Bay.

Turning turtle

The rubbish itself is one problem, but the real damage occurs when marine animals confuse plastic bags, balloons, bait packets, lolly wrappers and rubber with prey and eat them. Many species of turtle feed on jellyfish. To a turtle's senses, floating plastic bags are indistinguishable from food. Sea birds eat polystyrene balls and plastic buoys, after confusing them with fish eggs and crustaceans. Baleen whales such as blue whales, humpback whales, southern right whales and the Bryde's whale mentioned before take big gulps of water to feed on krill that they filter through their baleen, and may accidentally swallow plastic rubbish when feeding.

Ironically, starvation is the major cause of death for birds or mammals that ingest plastic. It is indigestible and can fool the animal into believing its stomach is full of food, as well as preventing proper digestion or elimination of any food that is eaten. Sea birds caught in marine debris may

Plastics are the most common man-made objects sighted at sea, with 18,000 pieces of plastic litter floating on every square kilometre of the world's oceans. Six million tonnes of debris enters the world's oceans every year. According to one source, plastic marine litter is killing up to a million sea birds and 100,000 marine mammals, such as dolphins, whales and seals, every year around the world. What is being done to keep the sea plastic free?

Main Juvenile sea lion entangled in fishing net.
Photo – Nick Gales/Lochman Transparencies

Right A rope in the mouth of a minke whale caused it to starve and strand at Dunsborough.
Photo – DEC

also be prevented from moving quickly through the water, reducing their ability to catch prey and avoid predators. They can also suffer constricted circulation, asphyxiation and subsequent death.

A 2007 study in Queensland found that plastic bags were the leading cause of death of marine turtles, with 23 per cent killed by the ingestion of marine rubbish.

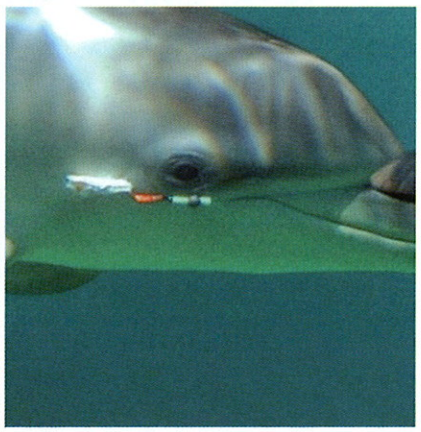
Entanglement

Entanglement is another problem associated with marine rubbish and is also increasing in frequency, especially as populations of threatened whales that migrate along our coast recover in numbers. If animals become entangled in lines, nets, ropes or plastic, it can restrict their movement and lead to starvation, infection, amputation and drowning. Turtles, whales, sea lions, sea birds and dolphins may be severely injured and even die if they become entangled.

In March 2005 a southern right whale had to be rescued from waters between Albany and Denmark after it was sighted dragging heavy 60-millimetre ropes and large floats consistent with those used in deep ocean fishing in international waters. More recently, a 10-metre Bryde's

Left DEC's Doug Coughran disentangling a leatherback turtle off Scarborough.
Photo – Fisheries WA

Centre left This sea lion was eventually captured 10 months after it was first sighted and DEC staff were able to successfully remove the rope. The sea lion survived.
Photo – Kevin Crane/DEC



Centre right Hooks and line embedded in a bottlenose dolphin calf's face.
Photo – Phil Couthard

Below DEC team successfully disentangling ropes from a humpback whale off Scarborough in 2004.
Photo – Pauline Goodreid/DEC

whale entangled in ropes off the Western Australian coast at Cervantes was freed on 20 March 2008 by the crew of the Department of Fisheries patrol vessel *Hamelin*, supporting Department of Environment and Conservation (DEC) rescue efforts. On arriving at the site, the crew found the whale was in very poor condition and starting to drown. Because the whale was small and very lethargic, a decision was made to cut some of the ropes which fortunately enabled the whale to swim away.

An upsetting worst case involving entanglement in marine debris was experienced by DEC staff on 29 March 2007 when a minke whale was found stranded in shallow water at Meelup Beach, Dunsborough. The whale was entangled in rope debris, was severely emaciated and starving. Its shocking condition was caused by a loop of rope through the mouth which prevented it from feeding. The entanglement was probably carried by the five-to-six-metre minke whale for more than 12 months. Sadly, the whale did not survive.

DEC has formed a specialised marine mammal disentanglement team that is at the forefront of developing techniques to safely rescue and disentangle whales and other marine animals. In WA, the fishing industry is also very proactive and supportive of efforts to reduce the probability of large whale entanglements and has adopted world's 'best practice' in making changes in the way it operates

FACTS ABOUT MARINE LITTER

Do you know how long it takes for litter to break down in the ocean?

- Paper bus and parking tickets: two to four weeks.
- Orange and banana peel: up to two years.
- Cigarette butts: one to five years.
- Plastic bags: 10 to 20 years.
- Foam cups and tin cans: 50 years.
- Aluminium cans: at least 80 years.
- Plastic bottles: 450 years.
- Fine fishing net: at least 600 years (much longer for heavier nets).
- Glass bottles: one million years.

More than 260 animal species worldwide have been recorded entangled in or having consumed fishing line, nets, ropes and other discarded equipment.

An astounding 86 per cent of all marine turtles are affected by marine debris.

Every day ships throughout the world discard 5.5 million pieces of rubbish into our oceans.

Australians use more than four billion plastic bags per year—if these were tied together they would stretch around the world 42 times!

and recovers any discarded fishing gear when found, returning it to shore for appropriate disposal.

Keeping the sea plastic free

Governments, non-government organisations and local communities everywhere are taking action to reduce litter in our oceans and raise public awareness. The Commonwealth Department of the Environment, Water, Heritage and the Arts conducts a 'Keep the sea plastic free' campaign to raise public awareness about the consequences of marine litter (it estimates that more than 70 per cent of rubbish in our oceans is plastic).

Marine park rangers from DEC help educate boat users and other marine park users about disposing of plastic bags and other rubbish thoughtfully. DEC has recently developed a website for primary school students (www.marineparks.wa.gov.au) which includes pages on the effects of litter on marine wildlife (see 'New marine parks website a hit with kids' on page 51). It is also developing a teachers' resource on marine parks for secondary school students that includes a field trip to collect and analyse marine debris found on local beaches.

Last year, the Western Australian town of Exmouth, which is the nearest large town to Ningaloo Marine Park, made a huge leap forward, becoming a 'plastic bag free' town. The local Cape Conservation Group has run a six-year 'No plastic fantastic!' education campaign to make the community aware of the problem with plastic bags and to persuade the community and tourists to use reusable bags. On 1 November 2008, both the local supermarkets stopped putting people's shopping in plastic bags, which are no longer available.

Above all, public education is vital. All the policing in the world will do no good until individuals and industry realise the impact of plastics on the marine environment. It may once have seemed fairly harmless to toss bait bands or lunch bags overboard. One look at a sea lion slowly dying must surely convince you otherwise.

Above Dolphin Discovery Centre and DEC staff have been working to cut away knotted fishing line embedded in the beak of a dolphin calf in Bunbury.
Photo – Dave and Fiona Harvey

Above box background Ocean debris accumulation at Mindarie Keys marina.
Photo – Len Stewart/Lochman Transparencies

Right Marine animals can mistake floating plastic bags for jellyfish.
Photo – Eva Boogaard

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