

Conservation news

Introducing the *Good Scrub Guide*

Life on Earth is intrinsically connected to and reliant upon the oceans, which provide more than 50% of our oxygen and store five times more carbon than tropical forests. The future of the oceans is uncertain, however, with ongoing degradation caused by pollution, overexploitation of fish stocks, destruction of coastal and marine habitats and global climate change. The economic cost of poor ocean management is already significant and is likely to increase substantially by 2050 in the absence of any mitigation of the effects of climate change.

One of the biggest challenges facing marine conservationists is plastic pollution, which is now ubiquitous in the marine environment. Plastic is generally non-degradable and therefore nearly every piece of plastic ever manufactured still exists. With the emphasis on easy living and the shift towards a throw-away society, increasing amounts of plastic are ending up in the marine environment via tourism-related activities, industry, active dumping and careless littering, to name just a few sources.

Marine plastic pollution has traditionally been referred to as macroplastic pollution—large, visible pieces of debris that severely affect marine biodiversity—and is a well-publicized issue. In 2012 the Convention on Biological Diversity reported that 247 species of marine fauna have either ingested or become entangled in marine debris. More than 80% of these instances are associated with plastic debris and 15% of the species affected are on the *IUCN Red List of Threatened Species*.

Microplastic pollution, however, is an emerging area of research. This less visible form of pollution, by plastic particles of < 5 mm, has grave implications for the health of the world's oceans. No lower size limit exists and fragments measuring thousandths of a millimetre have been recovered in water samples. Their small size, ability to float on the surface of the water and persistent nature are of concern to scientists and policymakers alike.

Mussels, lugworms, several commercial fish species, seabirds and seals have all been proven to ingest and accumulate microplastics. It is estimated that 95% of northern fulmars contain microplastics in their stomachs. These plastics can cause physical blockages, choking, a false feeling of fullness and even death from starvation. Several studies have shown that some seabirds regurgitate microplastics to their young whilst feeding.

Central to the discussion is the evidence that plastics readily adsorb persistent, bioaccumulating and toxic chemicals (PBTs) from the marine environment. Similarly, toxic additives used in production and manufacture leach out of plastic material over time as a result

of UV exposure and physical breakdown. Many PBTs are known endocrine disruptors or carcinogens and the key question from scientists and policymakers is ‘To what extent are these toxins being passed along the food chain—and what implications does this pose to human health and the labelling of organic fish?’

A recent trend amongst cosmetic producers has been to introduce abrasive, plastic microbeads into personal care products such as facial exfoliators, body scrubs and toothpastes. These microbeads are essentially purpose-designed to wash down the drain and they invariably enter the marine environment. Their microscopic size (often < 1 mm diameter) prevents their retention by filtration screens during wastewater treatment.

As part of its wider marine programme Fauna & Flora International (FFI) is working with forward-thinking businesses to address direct sources of microplastic pollution, starting with the launch of its new *Good Scrub Guide* (www.goodscrubguide.org). The Guide helps consumers choose products that do not contain plastic microbeads. To increase the scope and impact of this work FFI has joined forces with like-minded organizations in The Netherlands—the Plastic Soup Foundation and the North Sea Foundation (Stichting de Noordzee)—to develop and launch a smartphone app that will allow consumers to scan products to check for the presence of microplastics. This tool was launched in October 2013 at the UN Environment Programme Second Global Conference on Land–Ocean Connections. The app is freely available for Android, iOS and Windows Phone users and more information can be found on the supporting online platform www.beatthemicrobead.org

TANYA COX *Fauna & Flora International, Cambridge, UK.*
E-mail tanya.cox@fauna-flora.org

Open sale of elephant ivory in Luanda, Angola

The ivory trade has long been recognized as an impediment to elephant conservation and, after being banned for 2 decades, since 2007 all trade in ivory has been strictly regulated through the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Angola is the only elephant-range country that is not a signatory to the Convention. In 2001 Angola agreed to become a Party to the Convention but conclusive documents have yet to be ratified. Angola does formally partake in the Elephant Trade Information System (ETIS), which tracks the trade and confiscation of ivory, but since its inception in 1989 it has not submitted a report to this body. Nevertheless, the country was singled out in the most recent