



PLASTIC CULTURE

BY ODILE MADDEN

Most of the world's Laysan albatrosses breed on Midway Island, a small atoll in the Pacific Ocean a thousand miles from Honolulu and 2,400 miles from the nearest continent. Each year, thousands of their chicks ingest colorful plastic bits, and their mummified bodies testify to our throwaway lifestyle.

An enormous amount of plastic floats in the world's oceans, and it comes from many sources – nets, floats, buoys, construction materials, packing straps, pallets and expanded polystyrene foam. The plastic in the albatross chicks has a high proportion of discarded “disposable” plastic items such as the screw caps from water and soda bottles, cigarette lighters, cutlery and toothbrushes. These are things designed for short-term or one-time use. Once discarded, many make their way to the ocean where they are picked from the surface by albatrosses and other seabirds hunting for food. The parents feed the plastic to their chicks, who cannot digest it and slowly weaken, never growing strong enough to fly.

The dead birds also symbolize something larger. When there were fewer people, when we had fewer things, we made implements from materials that we considered valuable. We did not throw them away carelessly and in the name of so-called convenience. When we did toss things, we might have been excused for thinking there was an “away” – a place where we could discard what we no longer needed. The albatrosses, in photographs that fly around the Internet and print media, show us that there is no more “away.” There is no place to put our waste where it doesn't have

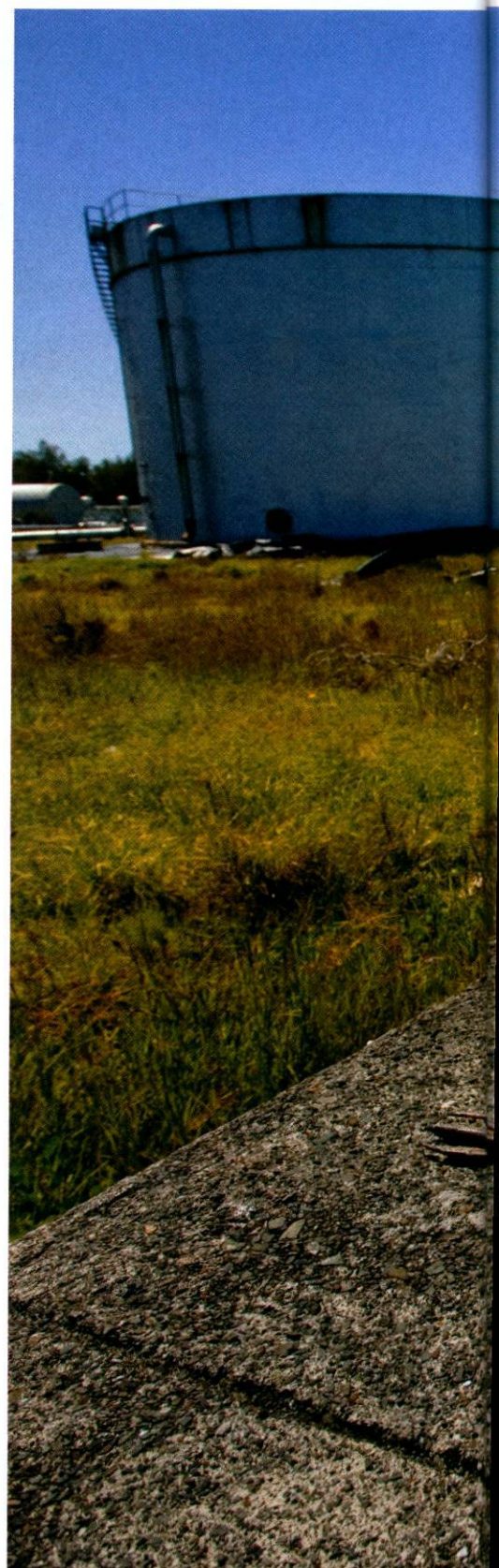
consequences for us and for the ecosystems on which we depend, not even in the most remote islands.

This does not mean plastic is evil. It is stuff that we invented, and we choose how to use it. Some of that ingenuity has been put to rather spectacular goals. Early plastics like celluloid relieved pressure on now-endangered wild animal populations, elephants, sea turtles and others, that were over-hunted for their tusks and shells to make things we now make from plastic. Plastic helped us fly and walk on the moon. Developments in plastic also help us repair and even replace our body parts. Bags for blood, injectable medicine and single-use lab-ware have made medical treatment and testing, for people and other animals, more accessible, which has increased life expectancies worldwide. For sterile, inexpensive medical equipment the cost of disposability is counterbalanced by our increased well-being.

Plastic food packaging is another 20th century achievement, but it is simultaneously one of our big challenges. On one hand, the practice slows spoilage, reduces food-borne illness and lets us transport fresh and manufactured foods far from their sources. But disposable packaging also generates a tremendous amount of waste that is discarded as litter, or clogs landfills or at best is recycled. There are significant costs to our towns, our sense of well-being and ecosystems near and very distant from us.

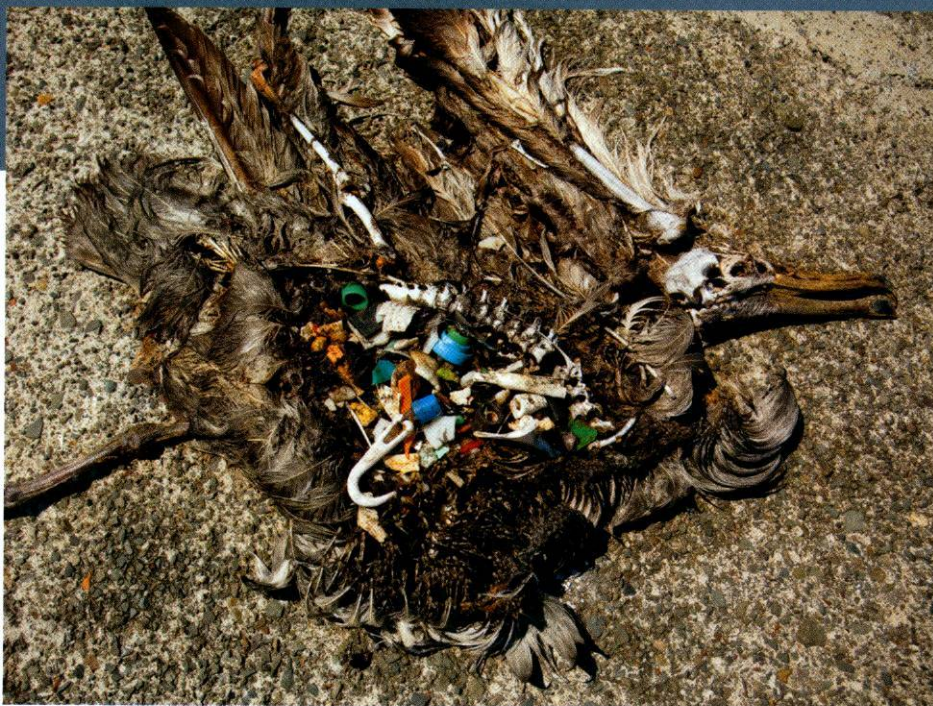
Disposability was not always the norm. Before the days of supermarkets and convenience stores, when you bought something liquid, the container was on loan. Soda pop and beer required a cash deposit that you got

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This fledgling Laysan albatross died on a concrete containment wall on Midway Island, with its abdomen full of plastic.





Close-up of Laysan albatross. At the instigation of cinematographer Jan Vozenilek, the Smithsonian Institution and United States Fish and Wildlife Service have transferred the mummified remains to Washington, D.C., for study of the source of the plastic and its effect on ocean life.



At Blue Fox Bay Lodge in Alaska, Madden sits amongst a pile of derelict fishing buoys and floats that were collected around Afognak Island, Alaska, by Colleen Rankin.

back upon returning the empty glass bottle. The bottles went back to the bottling company to be washed and refilled with more soda, maybe 20 times or more. This system worked well, and there was little environmental impact from the containers.

This concept of designing things to be thrown away, even though they are physically quite durable, is relatively new. For soda and beer, the transition to so-called “one-way,” “throwaway” or “convenience” containers started tentatively before World War II and was completed in the 1980s. These containers tended to cost more than the drink inside, and it’s not clear that the customer got all the convenience, but they eventually caught on. It soon became commonplace to see neighborhoods, playgrounds and roadsides littered by the empties – glass bottles, tinned steel cans and, eventually, aluminum. (Disposability is a relatively recent phenomenon, but it predates our plastic culture.) By the 1970s it had spread to other goods, such as razors, diapers, pens and cigarette lighters. They were no longer valuable, but rather, replaceable.

The special problem with plastic litter is that its low density allows the most common types to float. Once litter hits the ground, it easily makes its way to rivers and storm drains that move it to the ocean. There it is carried by currents and curious predators to places as remote as Midway. It becomes a global problem.

There are technological fixes to some of our plastic problems, such as new materials,

new designs for objects, that will reduce their harmful effects on wildlife and landscapes. Recycling has been widely adopted and makes sense, particularly for worn-out plastic objects that no longer serve their function. But it takes a lot of energy to chop, melt and reform a perfectly good plastic bottle into...a new plastic bottle.

Biodegradable plastics are being developed, and may have fewer side effects because they use the natural decay cycle of ecosystems. But remember, the soda container has to perform well during bottling, shipping, storage and as we drink it. How do you time that bottle and cap to degrade right when you finish drinking the soda? Does it need to be warm, humid or in the presence of microorganisms? Where should it hang out until then? At your house? In a landfill? A designated biodegrading facility? Or do we think that degradation process should happen in the ocean? Will it happen soon enough to prevent hurting an albatross that eats it?

The problem isn’t so much that plastic lasts forever, but rather that it outlives our expectations, gets loose in the world and causes specific harms. Even degradable plastic doesn’t just disappear. Changes in behavior, culture and organizational infrastructure will be required to make this solution successful.

The heart of the problem for the albatross (and us) is not just the plastic. We have designated too many things as disposable without taking responsibility for where they go after

we are done with them. We also need to remember that culture is our greatest technology, and it evolves continually. The most comprehensive way to deal with the plastic waste problem is to create much less of it to begin with. Since the global population is rising by the billions, this will not be achieved through fewer people. It has to be achieved by decreasing consumption and increasing re-use.

Some plastic objects can become less disposable rather than more. If we factor in the ecological costs of disposal, objects become more valuable and worth reusing. We can make durable plastic things with more care, better quality and higher design so they are worth returning, reusing and even passing down to the next generation. Tradition and heritage could be great tools in this respect. For those things that should be used briefly and then thrown away, we need to engineer them from materials that biodegrade harmlessly or can be reincarnated by recycling.

It is clear we’ll need a concerted plan, and it will be complex. Those who first coined the term Anthropocene have stated the problem in the language of science. Paul Crutzen and Eugene Stroemer suggested that we had entered a new epoch characterized by pervasive human effects on the global environment. They also said, “To develop a world-wide accepted strategy leading to sustainability of ecosystems against human-induced stresses will be one of the great future tasks of mankind.” Answers will include technological fixes but will also require retrieving traditional cultural values and applying them to a planet crowded with more than seven billion people and counting. ✨

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