

**PLASTIC, from page 8**

Then there is Miguel. A chick born near a Midway building, Jordan and his crew capture the bird hatching from its egg. Caught on film this past February, it's a sweet moment of emergent life.

But it's impossible to say what life will hold for Miguel, Jordan said. A study from 1996, he said, found that 54 percent of the seabirds' stomach contents were plastic, including rubber, foam and fishing line. "Statistically, Miguel has a low chance of getting off the island," Jordan said.

He plans to check on Miguel soon. On June 28, Jordan and his crew will travel to Midway for three weeks, the longest trip he's taken so far. He greets the trip with some hesitation, as he calls this time of year

on the island "the dying season."

Fledglings prepare to take their maiden sea voyage, though, Jordan said, many don't make it. Some die of starvation due to stomachs full of plastic, while others lose their lives from exposure to the elements.

Still, Jordan believes Midway is a spiritual place, and finds the name evocative. "Here we are at this crossroads," he said, "where everything that has ever happened has led to this moment and everything we decide now will decide the future."

He believes the albatross, a central figure in the Samuel Taylor Coleridge's epic poem, "The Rime of the Ancient Mariner," plays a special role in humanity. "It's like this spirit bird, the messenger," he said.

What Jordan wants the film to communicate is that people can change the

way they live and alter the fate of albatrosses of Midway. "It's a message of horror, but also beauty and hope," he said. "And love."

To view the trailer for "Midway" and donate to the film on line, visit [midwayfilm.com](http://midwayfilm.com)

Below, another in Chris Jordan's series of photographs showing decomposed bodies of albatross revealing the plastic content of their stomachs.

PHOTO BY CHRIS JORDAN



**TRASH, from page 1**

was notorious at the turn of the last century for being such a sty, and that's why some of these advancements such as recycling and the municipal dump were pioneered.

We like landfills in the U.S. more than in other countries because we have so much space. There's always another hole to throw your garbage into. Perversely, that encourages us to be more wasteful. It doesn't make it a good model, but it's become our model because we have the space to do it. Japan doesn't have landfills because they're on an island, and they don't have the space.

**M.T.:** Puente Hills in Los Angeles County is the largest active municipal dump in the United States. It's essentially a garbage mountain over 500 feet above the original ground level. It contains about 130 million tons of trash. Do you think that Puente Hills is the future of trash in the United States?

**E.H.:** Puente Hills is actually fairly well-run, despite being so mammoth. It does try to control ground water contamination, and it captures some of the methane it produces to power the facility instead of letting it escape into the atmosphere.

Still, it's a great big pile of garbage. But it's the model that the U.S. has been pursuing, and landfills are where almost 70 percent of all our trash goes today. We send more recyclable material to the landfill than we actually recycle. For all our decades of focus on recycling, we haven't really been able to shift that paradigm away from landfilling.

The most recent evidence suggests that landfills produce more greenhouse gases than the facilities that burn trash for energy. That's kind of counter-intuitive — you'd think that burning would be worse, but it's not because of all the methane coming out of landfills.

So, when looking at all these factors like landfilling and recycling and incineration, and what to do with our trash, the question that rarely gets asked is: How we can make less trash in the first place? And what are the economic incentives and environmental benefits of being thrifter and less wasteful?

The same goes for energy. We're always trying to find new ways of making it, when we should be trying to use less of it while still accomplishing what we need to accomplish. That's really where people who are thinking about the future of trash want the debate to shift. Not where we put our trash, but why we make so darn much of it.

**M.T.:** Cities like Copenhagen, Denmark, use almost 100 percent of their trash as a renewable energy source (through incineration). Do you think that something like this could catch on in the States?

**E.H.:** There's a lot of potential for using our trash for energy (when it can't be recycled or repurposed in some way). Denmark succeeds on this score because they decided that their waste is a local issue. They built relatively small, low-cost facilities, and they produce the heat and energy in the communities that produce the trash. They've chosen a more community-based model. They don't have these huge utility-scale power plants that leave such a big footprint and have such a high cost.

It's been a big challenge for American communities to pursue the waste-to-energy model as a solution. One successful example, though, is in Massachusetts in the Cape Cod area. A series of small communities have banded together to enact this model.

**M.T.:** You mention plastic bags in your book. They're pretty ubiquitous. For example, most people will grab a plastic bag while in the checkout line, even if they only have a few items to carry. It seems like eliminating plastic bag waste might be a fairly easy first goal?

**E.H.:** Yeah, it's a good place to start. If you want to look at single-use disposable products made out of materials that linger

in the environment for hundreds, if not thousands, of years, disposable plastic bags and wraps and single-use containers are a great place to start because they're such a huge component of our waste stream.

Now, plastic bags all on their own? By weight or volume they're only a small percentage of the overall trash. But they're a highly visible one. They're the kind of plastic that's polluting our marine environment. They're a high percentage of wind-blown trash and trash that gets into public waterways. Plastic is really hard to recycle in a cost-efficient way. Consequently, not a whole lot of it gets recycled. Only about 5 percent of plastic bags get recycled. They'll still end up in the landfill.

It's a great target if you want to get people thinking about reusable solutions instead of disposable ones. The trap is, you don't want to create a ban or a tax on plastic bags that then prompts people to use disposable paper bags instead. We should be urging people to bring reusable bags.

Los Angeles County has a plastic-bag ban that's been in effect for over a year now (as does Portland). Paper bags are available for 10 cents. About 90 percent of customers where this ban is in effect have started bringing their own bags rather than buying the 10-cent paper bags.

**M.T.:** A lot of this plastic ends up in the ocean in small pieces. What do experts know about this "oceanic plastic," and is there any hope for removing it?

**E.H.:** It is hard to get rid of. There's this common misconception that there's this giant floating island of garbage in the ocean.

This just isn't true. It might be easier to clean up if it were true.

In reality, oceanic plastic consists of tiny particles. They're diffuse, but plentiful in certain areas of the ocean. The particles tend to absorb chemical toxins. Because the ocean plastic becomes weathered and porous, it's very easy for the toxins to attach to the plastic.

Fish eventually ingest these plastics and the toxins thereby enter our food chain. According to data accumulated over a period of 30 years, the plastic in the ocean has increased 100-fold over those years. The ocean is a big place. It's not like the entire ocean is becoming plasticized. But there's enough of it to start having a significant effect on the food chain.

And it gets concentrated the farther up the food chain it goes. For example, there's this study by Scripps (University) that observed these plankton-eating fish called lanternfish. Ten percent of them had plastic in their gut. We don't eat lanternfish, but other fish do. And they don't eat just one, they eat hundreds of them. So now you have this concentrating effect, where a little plastic eaten by many lanternfish gets concentrated into a smaller number of bigger fish. And yet other, bigger fish, eat those fish, and it works its way up the line. So now you have these toxins built up in the food chain as the fish gets bigger. Then it gets to the fish we eat. And the chance of them ingesting harmful substances in significant quantities is really alarming.

**M.T.:** What notable discoveries did William Rathje's Garbage Project yield?

**E.H.:** It's really just a testament to how revealing our garbage is. It reveals how we behave and what we consume. For example, just by studying garbage, Rathje was able to discover which of the homes in his study were single parent or two parent. If you look at the trash from any household, you can really tell the demographic of that household.

The Garbage Project also did core samples of landfills. They could essentially go back in time 40 or 50 years to see what was happening with the trash. And one of the surprises was that a lot of the material in the landfill wasn't breaking down at all. Organic material was still intact. Newspapers were still readable after 50 years. There was this popular idea that everything broke down into this decomposing soup, and that was proven to be incorrect.

This material does biodegrade, but much more slowly than we thought. Rathje discovered 25-year-old guacamole in one of the core samples, and when he wiped away the outer crust, it was green inside! Not that you'd want to eat it, but it just illustrates how long waste can stick around. It's this weird,

anaerobic environment in there. But that's also one of the reasons it generates so much methane. It's the perfect environment to generate massive amounts of greenhouse gases.

**M.T.:** Bea Johnson is a Bay Area resident and owner of "The Zero Waste" home. Almost everything her family of four throws away in a year fits in a mason jar. She buys in bulk (bringing her own containers to the store to refill) and uses cloth napkins and handkerchiefs. Do you think that this type of minimal lifestyle is possible for anyone?

**E.H.:** Just to be clear, their mason jar is only their trash waste, separate from what they recycle and compost.

They gradually worked their way to this point; it's not something the Johnson family did overnight. They started because they moved to a smaller house for financial reasons, and they needed to downsize. That started them on the path to find out what they really wanted and needed and how that compared to what they had accumulated. They approached it very logically.

Bea systematically went through the house and identified opportunities to be both thrifter and less wasteful. She started buying used and refurbished things, because often they're indistinguishable from and almost always cheaper than their brand-new counterparts. And in terms of reducing your environmental footprint, using refurbished things is a great goal. There's a lot of energy that goes into the transport and resource-extraction to make new things, so if you can use something that already exists, that's best.

**M.T.:** What changes do we need to make — policy-wise — to reduce the amount of waste Americans produce?

**E.H.:** We have a lot of incentives and tax policies that encourage wastefulness. Whether it's subsidies for junk mail or charging people a flat rate for their trash instead of charging them by weight — All these things underwrite waste. If we could just change one thing, I think it should be removing incentives that promote waste and creating incentives that discourage waste.

**M.T.:** What about the personal level?

**E.H.:** That's easier to change. There are often added benefits when reducing waste, like cost savings. Processed food is also highly packaged while fresh food is generally not packaged at all. In that case you're making a healthier choice and a more environmentally sustainable choice

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