

Leaving Your Mark is Overrated

Human impact on all fronts of the planet

By Haylan Teel

The first Grizzly Bear I ever saw was a big one; it was very calmly chowing down on berry bushes in a lovely flower laden meadow in Alberta, Canada. It bobbed its head in a slow, rhythmic way, like the Muppet's I'd watched on TV growing up. It was larger than I had imagined, even knowing that Grizzly Bears are some of the largest land mammals in the country. Somehow it looked fake; it was all too pretty and appeared bathed and well brushed, a really impeccable specimen and the perfect time of year to see a happy, healthy, grizzly bear. I wouldn't have ever guessed that just a few moments later, I would be watching it with bated breath as it charged a man.

He had pulled up in his white Jeep Cherokee, and without hesitation, caution, or an ounce of self-preservation, he got out and made a bee line for the grazing bear and snapped a few photos of it while only 15 or 20 feet away. If you know anything about bears that's uncomfortably close. He turned, as casually as the bear had been eating berries, and walked back to his car as if he was strolling through the mall, all the while looking down at the phone in his hands. The bear continued eating like nothing was amiss until the very moment the man's back turned to return to his vehicle. Its head shot up, and with only a moment's hesitation, (more than the Canadian had upon approach) the bear was running, full speed towards the man's back. Although this happened very fast, there was definitely enough time for my panicked brain to realize that my first grizzly sighting may also be the first time I see a person die, but at the last second, the ruddy brown bear bluffed and ran off in the opposite direction from the road into the vast wilderness of Waterton Lakes National Park.

I think of this incident often and how the gentleman in the Jeep never actually noticed the bear had charged him. Even after it had happened, he simply got into his Jeep and continued down the road-maybe trying to spot more bears, or different opportunities to risk his life. It was this carelessness that circles in my mind from time to time. Was the man just not aware that bears attack people? Surely his Canadian license plate was evidence to throw that notion by the wayside-Canada has a large population of Grizzlies and where there are not grizzlies, there are almost always black bear. Although it's more likely to be killed by lightning or a domesticated dog than a bear in any given year, I would have never imagined

An American black bear searches for food in a campground dumpster. When bears are habituated to human behavior and food, it spells trouble for both the humans and the bears; after being relocated several times, it will be killed to protect humans. Photo by Jim Mullhaupt



someone would take the chance. But, with habitat destruction and human impact on the rise, bear attacks are following suit. You've maybe heard the saying 'a fed bear is a dead bear', and the same goes for a hassled bear, or a one forcibly pushed into uncomfortable situations.

It's clear to see how human interaction and impact can lead to bear attacks. It's simple really; when bears have to share territory and food with humans, there will be more altercations. Although the gentleman I saw in Canada was far more aloof and antagonistic than most, the general public is still making mistakes when it comes to not only bears, but their interaction with nature in general. It's easy to see why increased interaction is bad for us when it comes to bears; it involves direct, terrifying, life altering mauling and in some cases death. It's less easy to see how it affects other facets of nature. Most people would (*or should, rather*) identify a problem if their hiking companion volunteered to feed a bear they spotted on a trail their tuna sandwich, but adversely, most people don't take any issue with feeding a chipmunk a cracker from their palm. The answer is simple-it's the pre-mentioned self-preservation that calls to them, that appears as their conscience. It's not the bear they are looking out for, it's the harm that could come to them. Obviously, with a chipmunk, the harm is quite small, or even non-existent, so people don't generally have a quoniam with feeding. A chipmunk could be replaced with almost any non-imposing animal we see in the wild.

But let us, for just a while, consider the other side of the story. What does habituation of grizzlies mean for the bear? For the chipmunk? The deer, the fox, or the many other animals that are affected by our carelessness, whether it's purposeful or accidental? We'll look into how our impact changes the world around us, how we can be better stewards of the environment, how we can ultimately do right by ourselves by learning to Leave No Trace and see how our impact bleeds beyond our interaction with wildlife and into sensitive cultures, environments, conservation, and more.

Leave No Trace has seven core principles, designed to speak to the outdoor-goer. They are generally geared towards the backpacker or back country camper, or the long distance hiker. Although our National Park system and many other smaller agencies, like state parks and boy/girl scouts, have adopted the Leave No Trace ethics, the general public is still largely unaware of them. And why should they be? They won't be strapping on a framed pack and walking 20 miles into the forest any day soon. Like many, I first became aware of LNT when I began to backpack. After many small back country trips in Texas, my first long and serious trip was the Kalalau Trail on the island of Kaua'i. Although hindsight likely shows it as over ambitious, it was the start of my goal to immerse myself in the outdoors-recreationally, and professionally. The more I became involved in nature, the more I learned that our impacts don't just benefit or affect only the people that venture into it deeply.



Hiking or kayaking Kaua'i's Na Pali Coast is an exhilarating experience, made all the better by its remote location, pristine beauty, and endless vistas. Photo by Haylan Teel

Outdoor ethics bleed into our front country use, our cities, neighborhoods and everyday life. It doesn't matter if you are surrounded by tall loblolly pines of a forest or four pine walls of a house, you can always be conscientious about our planet.

So what does it mean in LNT terms to feed the bear, the deer, or the chipmunk? At the very heart of the hundreds of reasons is keeping wildlife wild. When wild animals start to rely on us for food and survival, they become habituated. There are some forms of habituation that occur naturally in the animal world, for instance, when seals learn how to read whale calls. One song will send them into a panic, another they will simply ignore because they understand it's from a harmless variety. On the other end of the spectrum, if these same seals begin interacting with humans, being touched and getting handouts, they stop naturally hunting and gathering their own food. This change will impact almost every part of their life, from mating, to travel, to rest and down time. Habituated animals, seals included, are guaranteed to become more aggressive and dangerous to both themselves and humans. We see where this dependency on humans is a problem for large animals like seals and bears, but it follows the same pattern for all animals, even fish being fed on a reef. Animals that rely on humans for food also become sick from ingesting things they are not adapted to; breadcrumbs seem like a great snack for fish or birds to us, but as there are no avian or aquatic bread factories, these foods are foreign and dangerous.

Prior to 1967, there were no deaths recorded by Grizzlies in Glacier National Park's 57 year existence. That year on the evening of August 13th, there were two separate fatal mauling's by two different bears 9 miles apart. Both were directly related to the bear's habituation to humans through feeding piles, food aggression, and more. Since then, although still considered rare, that park and other areas have had more attacks over time and even into recent years. A study of the Central Rockies Ecosystem between 1971 and 1966 shows that 627 of 639 known deaths from Grizzly encounters were actually human-caused, leaving a scant 12 resting on the shoulders of brown bears. Although most of us will not encounter Grizzlies in our life time and most certainly not

in our day to day life, the obvious and undeniable link of our negative involvement is impossible to deny.

Most animals we will come into contact with are not a threat to us. Many could care less if a fish becomes aggressive and habituated, because there's no threat of personal harm. They are cute, and many



Above; Granite Park Chalet within Glacier National Park was the site of one of the two grizzly attacks on Aug 13, 1967. Photo by Valerie McIntyre. Below; a bear dump show in California is pictured, much like the nightly entertainment at the Chalet that was credited for the death of Julie Helgeson, who was mauled while sleeping. Photo courtesy National Park Service.

find an up close and personal experience to be a highlight of a vacation or a great photo opportunity. It's in these situations you have to ask yourself if you are comfortable with what happens once you walk away or return home. If most were to think about it and know the consequences, maybe different choices would be made.

Hanauma Bay Nature Preserve on the island of O'ahu is a great example of destruction, recovery, and management. Although in 1967 it was declared a Marine Protected Area, overuse, coral clearing, and alteration of the landscape continued for decades. Throughout the 1980's it was common for the bay to have as many as 13,000 visitors in a single day, all stomping on the reef, overloading the bathrooms, leaving trash behind, and feeding the fish. The tourists weren't the only ones to blame, the state had made a practice of altering the reef and landscape as well, by means of dynamite to create openings in the coral for swimming, trucking in sand for a more desirable beach, creating vast parking lots, etc. It wasn't until the shallowest depth reef actually died (and is still present as a skeleton today) that action was taken to actually preserve the marine preserve. Since then, they've taken steps to beef up their conservation methods. They require all visitors to attend an educational briefing on caring for the reef, limit the amount of visitors per day, have staff devoted to education and law enforcement, and actually close the preserve once a week where no visitors are allowed at all.

Our interactions with wildlife are not the only impacts we have on nature in the cities, front country, or back country. Another big, glowing beacon of human impact is leaving things behind. Unlike the effects of wildlife, which are generally hidden from our everyday lives and only seen when we tune into Nat Geo in the comfort of our homes, the things we leave behind are invasive, infectious, and hard to hide. It's with a herd like mentality that many people have become so habituated to trash that they no longer notice it's there most of the time. But once you do see it in the eyes of Leave No Trace, you cannot un-see it.

WHY THE NEED TO CLEAN UP

■ Plastic bags and bottles floating in the water resemble marine organisms like jellyfish or cuttlefish. Immature turtles and whales mistake them for food and this can cause death by choking or starvation.

■ Birds like the albatross often confuse plastic bits for food. Filling their bellies with plastics gives them a false sense of having their hunger satiated and they may die of malnutrition.

■ Rope from ships, fishing lines and broken nets thrown out in sea entangles wildlife like turtles, birds, fish and seals (right).

■ The pollution poses health threats to humans and contaminates natural marine environments.



Text and Graphics; Lim Yong. G. Ghandradas, Quek Hong Shin Photos: Quek Hong Shin, Tefal, Petter Brandt

There is hardly a soul out there that would argue on the pro-litter side. Is there even a pro-litter side? Even if people don't see trash in the amounts that it's actually represented in, for loud and obviously man made litter, there are not many souls who will be able to justifiably and comfortably argue that its presence isn't a nuisance. As the years have gone on in human history, we've created more and more disposable products, and as those same years have worn on, we have branched out further and further into the wilds of our country and oceans. There's very rarely a corner of a rural valley or a distant desert mile where you won't find some evidence of human trash. While working to excavate a cave in Austin, Texas, in 2013, I found a perfectly preserved opened package that once contained sunflower seeds. Its printed expiration date was in 1979. If a plastic bag can meander down a vastly unexplored cave, embed itself in dirt and rock, maintaining its colors, text, and crinkliness for 34 years, is there any place that's sacred? I have to imagine that the person who discarded it in a simple, thoughtless motion of laziness never imagined it may outlive some of their own friends or family.

Everyone knows that a coke can, a fast food bag, or a cigarette butt is litter. It's vastly understood that these items take decades to hundreds of years to become undetectable to our eyes, but may exist in smaller form for longer than humans can study. We know that they are eye sores, start wildfires, but they continue to be seen on every city street, in every park, and on every hike. It's a real shame to remove yourself from humanity, go on a long hike in the wilderness, perhaps even staying overnight, only to find a Cheetos wrapper and beer cans at your camp site, or even on the beach near your hotel. After all, we all venture into our natural lands to enjoy their wild attributes, to enjoy the natural gifts they

they have to offer; why sully them and ruin our and other's future use?

Although the unpleasant appearance of trash is what bothers most about litter, it's actually the least invasive reason to keep litter off our streets, front and back country.

Many cities within states like Texas, California, and New York have instated much needed plastic bag bans. These states mentioned are all relevant due to their proximity of our nation's coasts; however there are many inland cities that have followed suit in a commendable fashion. Although there are many benefits to plastic bag bans, no matter the location, the coastal cities have an extra bump; the fact that they are helping protect our sea life. Sea turtles, for example, often mistake plastic bags aimlessly floating in the oceans for aimlessly floating jellyfish instead, which happens to be one of their all-time favorite foods. These bags become lodged in the turtle's throats and stomachs, usually proving fatal. Sea creatures like turtles, seals, and dolphins often become entangled in bags or other marine debris, like discarded fishing nets, and when they cannot break free to return to the surface for air, they drown. Even a small net or fishing line that doesn't hold an animal beneath the surface can wrap around their bodies or extremities, cutting off circulation, stunting growth and feeding abilities, resulting in amputation, infection, and death. Marine animals are not the only victims; inland animals, like the famous Peanut, also run into litter and pay the consequences. Peanut was a red eared slider found in Missouri, who had managed to get stuck in a plastic 6-ring soda can holder. She grew older and larger while remaining stuck in the plastic ring, eventually growing larger everywhere but her waistline where she remained

synched like a corset. As an adult Peanut was found, rescued, and to this day remains deformed, but plastic free. However, most turtles are not this lucky.

Marine debris has become a hot topic in the last few years, as the affects can no longer be counted as hearsay. It pushes onto our beaches and coasts, and is mostly made of plastics and netting. Plastic trash is gathered up from all over the world by our oceans, where it's forced into currents that distribute large amounts onto hot spots all over the globe. There are large amounts of dump sites for plastic currents on the main islands of Hawai'i, as well as the northwestern Hawaiian islands. These islands create a trash siphon for some 1,500 miles in the middle of the Pacific Ocean.

Most of these islands, atolls, and seamounts are uninhabited by humans, but instead serve as a teeming refuge for lots of different species, like many native sea birds and the Hawaiian monk seal. It's researched that 44% of all sea birds will eat plastic by mistake, and many mothering



sea birds will pick up plastic they see as food, to provide to their chicks. When a bird ingests plastic, it remains hungry and eats, or feeds its babies, more plastic to satiate the ongoing hunger. This results in a constant vicious cycle where the sea birds fill themselves with plastic pieces they cannot digest or regurgitate, leading to a slow death of starvation. Birds like the Laysan albatross or the various types of booby's that inhabit these wildlife sanctuaries can be found littering the sandy shores, having passed away from such a preventable fate, where their bodies have started to decompose, yet the plastic from their bellies remain framed by the birds bones.

This plastic is often made up whole items like toothbrushes, lighters, milk caps, and fishing gear, but even less obvious are the smaller, even microscopic pieces that float in all of our oceans. Areas of millions of square miles, both across the surface of our oceans and deep underneath, is known as the plastic vortex or plastic soup. Although not always visible, the smaller pieces don't cause any less harm. These plastics are filled with chemicals that have an adverse effect on our planet's water and all of its consumers and inhabitants. A toxic chemical named bisphenol A is just one of many, but is a known carcinogen and disrupts the reproductive system of many animals,

to only name a few effects. These types of chemicals become more concentrated and potent when consumed up the food chain, ultimately leading to poisonings in the alpha predators who get a concentrated dose; dolphins, sharks, and humans to name some.

Marine wildlife and sea birds are certainly not the only ones affected by litter; it reaches the inland animals easily, both in urban and rural areas alike. A great example of how all animals are affected by trash are roadside deaths caused by food trash. Many people that wouldn't normally litter a glass bottle, a cigarette butt, or similar trash, have no qualms chucking uneaten leftovers into the

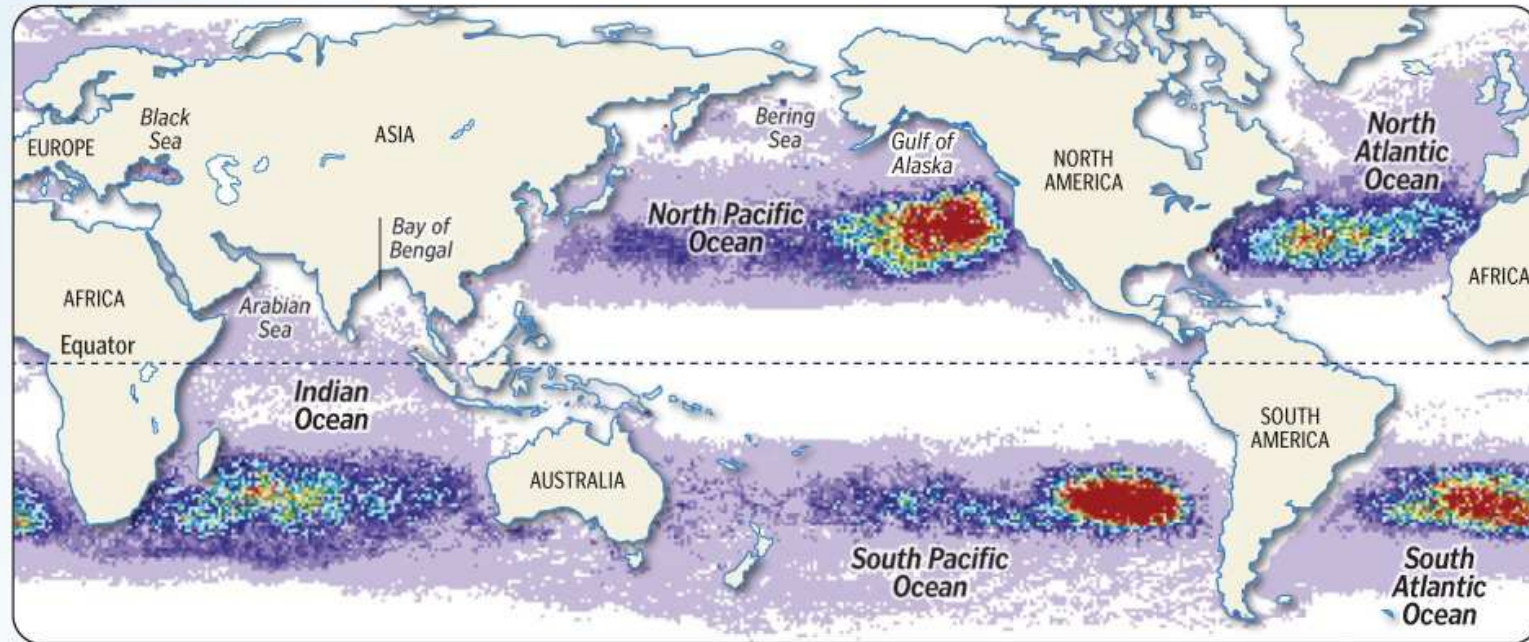


Left; a healthy Laysan Albatross and chick. Photo courtesy Friends of Kaena. Right; An albatross after dying from ingesting oceanic plastic. Photo by Chris Jordan.

woods on a camping trip, or fruit peelings out of a car window. In fact, many people may even think they are helping the eco-cycle of nature by putting waste like this into the environment. The old-as-time excuse heard across the world is "It's biodegradable." In

many cases, this is entirely false, or the speed in which the food item biodegrades is extremely slow. Consider that an apple core may take eight weeks, where orange peels and banana skins can take up to 2 years. This is also all dependent on the climate it's left in. A banana peel left in a much dryer climate than average may take years longer than the average, but just 30 seconds to put safely in your pack and dispose of properly later. Roadside food litter is very popular, and one victim has been Hawaii's state bird, the nene. This is a sleek, beautiful and endangered bird that is endemic to Hawai'i, which looks much like a Canadian goose. The nene is already struggling in its numbers for decades, due to invasive predators, habitat destruction, and hunting, but most of the deaths in the current years have been due to roadside litter. When food is detected on roadways, the nene, like any animal elsewhere, venture over to get a free meal. . Unsuspecting and inattentive motorists hit these revered birds, leaving a death toll that the dwindling population can't afford. You can substitute the endangered nene for other animals all over the world that are unwilling participants in the same types of deaths, from raccoons, to bears, to deer, and more. The animals that eat edible (or inedible) litter in areas not near roads, can get sick, and will be habituated, causing disruption in their own lives. A good rule of thumb is to ask yourself is "Would this be here if I were not here?" Most of the time you'll start to notice that the food you are

THE 'GARBAGE PATCHES'



A computer simulation of the distribution of marine litter in the ocean after 10 years shows plastic converging in the five gyres or spirals of ocean-circling currents. Model simulations suggest that marine debris may remain in the gyres for many years.

- Debris “patches” are invisible in satellite images as they comprise mainly small plastic pieces suspended below the water surface at varying depths.
- Sizes or masses of the “garbage patches” are difficult to gauge.
- The main debris type found in these “patches” is plastics.
- Most plastics photo-degrade, broken down progressively by sunlight into smaller pieces called “microplastics” (less than 5mm long). This process takes longer in the ocean than on land due to lower temperatures.

Text and Graphics; Lim Yong. G. Ghandradas, Quek Hong Shin Photos: Quek Hong Shin, Tefal, Petter Brandt

eating is not natural to where you are hiking. For instance, when hiking in Hawaii, in nene territory, it certainly is not natural apple country. Not only is the trash a risk to the wildlife, not biodegrade as fast as people may suspect, but you don't want to be responsible for introducing an invasive or non-native species that could set the environment off kilter. Most of our wild lands and front country have enough human introduced species already, they certainly don't need any more to contend with. If you brought it in, you should take it out.

Hawai'i is a great example of many Leave No Trace ethics that can be stretched into our urban and front country experiences. While traveling on Maui, I stopped by Wai'anapanapa State Park. It's a lovely area along the famed Hana Highway in which I had been to many times. This particular park is striking due to its particularly lush greenery serving as a backdrop to extremely rich, black lava rock, and a lovely black sand beach complete with caves and a sea arch. Black sand beaches are created in several different ways, and is certainly an interesting oddity for most visitors, so it's common for tourists to want to bottle some up to take back home with them as a souvenir of their time. At the time of this partic-

ular visit I was living on the Big Island of Hawai'i, and is one way I learned that the Big Island has a more eco-conscious way of operating through its residents and businesses. On Hawai'i there are not only many black sand beaches, but a green sand beach that's only one of three on the entire planet. No matter the color of the beach, it's common to see signs, both official and hand written by residents, asking that no one remove sand or rocks. At Wai'anapanapa, there was no such a sign. It was almost unbelievable how many people there were gathering up sand and rocks; it was to the point to where it seemed like a comical plant set up by a TV show or a scene from Lilo and Stitch. In one direction there was a sunburned man scooping handfuls into large plastic freezer bags. In another there was a woman in a large hat filling a gallon milk jug to the brim. To name only one more out of many, there was another tourist filling several plastic water bottles. To this woman, I did remark that you shouldn't remove the sand, that it's not only ethically wrong, but actually illegal. The woman brushed it off with the excuse, “Well, I'm not taking it for myself, I'm taking it for my friends,” as if *that* settled the matter.



Above: Hawai'i's state bird, the nene, grazes on the open area inside Haleakala National Park on Maui. In 1951, there were only 30 of these birds left in all of Hawai'i. Today, the numbers may be higher, but they are still in danger. Photo by Jason Ford

Below: Tourists enjoy one of the only green sand beaches in the world. Consisting mostly of olivine, it was originally created by a long quiet volcanic eruption. When the mahana cinder cone is weathered away, the beach will disappear forever. Photo by Jason Ford



After visiting the beach, it was time to go to the office to check into my cabin for the evening. While talking with the woman who was checking us in, I remarked they should put up a sign reminding people not to take the rocks and sand, to which she replied, “Oh, that’s just silly superstition.”

This was unsettling to me for a variety of different reasons. First, she’s referring to the idea that if you take rocks from the Hawaiian Islands, especially from Volcanoes National Park, that you will be cursed and bad luck will befall you until you return the item. In fact, that same park on the Big Island of Hawai’i, receives about 50 packages of rocks returned to them each week in the mail, because the people that initially take them, calling it a silly superstition, later attribute a string of bad luck to having taken the rock, and want to right the wrong to improve their own misfortune. The story behind this, which is befuddled and often miscommunicated, is that the native Hawaiian’s believe that when someone dies, their spirit wanders from rock, to sand, to plants, searching until they find a jumping off point, where they then dive into the afterworld where they can be at peace. When you remove a natural item, you may be taking part of someone’s searching soul, causing them to never find peace. Calling it a superstition and not respecting a local culture or religion of any kind is not only disrespectful, but something most of us would never want someone to do to us. Secondly, forgetting the cultural sensitivity of the situation above, the natural items are simply not yours to take. They belong to the land, and should stay with the land. In a case like Wai’anapanapa beach, it was formed by an aggressive, brief eruption of Maui’s largest volcano, the now dormant Haleakala. This isn’t a slowly eroding beach that will replenish itself as the rock around it weathers down, or as parrot fish munch up and deposit the reef as sand, this is a beach that like the earlier mentioned green sand beach, Papakolea, was born of fire, and once it erodes away, or is taken away prematurely by humans, will not exist any longer. Even in the last 12 years of visiting Wai’anapanapa’s black sand beach, I can see less sand covers the large, rounded and bald lava rocks that make up its skeleton. If the park employees don’t care to protect it, who will?

If you care not for the cultural and environmental reasons for not removing rocks and sand from our lands, not just Hawai’i, but anywhere, consider that it’s illegal. In all of our nation’s National Parks, and most State Parks, it is a punishable offense to take any natural item, even for firewood. It’s easy to think of you taking one rock, one flower as just one in a sea of many, but you always have to look at the big picture when it comes to conservation. You are *always* one of millions, and those millions are thinking the exact same thing you are.

Once all the cookies are eaten from the cookie jar, it can’t magically refill itself; we live in a finite world with finite resources. But just as every little bad you do adds up, every little good you do surely adds up too. It’s just as important to think of yourself as one of many that can cause harm, as it is to remember that if many of us act to support our environment, we can improve the destruction that our not so apt and educated ancestors caused. There are many ways to bring Leave No Trace into our daily lives, whether you’re driving to work in town, visiting a city park, camping in front country, or on long hikes in the wilderness. Many of the principles they focus on are not even

DID YOU KNOW...

260 million tonnes of plastics are produced, but only 5% of this is recycled.

Most of the plastics found in the Pacific Ocean are white and blue because **fish eat reddish pieces**, thinking they are food.

Supermarket chain FairPrice's Green Rewards Scheme helped save **six million plastic bags** in 2010.

On Jan 1 last year, **Italy** became the first country to **ban single-use plastic shopping bags nationwide**.

Nike introduced soccer jerseys made from **100 per cent recycled polyester** for its national teams at the 2010 soccer World Cup. **Up to eight discarded plastic bottles** went into the making of one shirt.

YOUR LITTER MAY PERSIST FOR A LIFETIME... OR MUCH LONGER
Estimated decomposition rates of common marine litter



Sources: INTERNATIONAL COASTAL CLEANUP SINGAPORE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, OCEAN CONSERVANCY, PLASTICSEUROPE.ORG, SINGAPORE ENVIRONMENT COUNCIL, MINISTRY OF THE ENVIRONMENT AND WATER RESOURCES, AMERICAN CHEMISTRY COUNCIL

listed here, like planning ahead, traveling on durable surfaces, human waste disposal, being considerate to each other, and minimizing fire impacts. These, just like the rest, can be expanded into our daily lives no matter the location. They are all just a few of many puzzle pieces that will make our relationship with the environment more efficient, steady, and long term. Human impact is largely reversible up to a certain point. Luckily, we are in a time before the turning point has arrived for many lands and species. Take care to Leave No Trace for yourself, for me, and for everything this beautifully wild and varied Earth has to offer. □