The Dolphin Project

"ON EFFORT"
Newsletter
Fall 2018

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The Dolphin Project is an all-volunteer, non-profit research, conservation and education organization, founded in 1989, dedicated to the protection of wild estuarine Bottlenose dolphins and our shared environment. Tax ID# 58-1914176

FROM THE HELM…

Greetings Crew!

Hope y'all have had a safe and happy summer. Hub and I and our two pups spent three months on a road trip to Alaska with our 33 ft Grand Design/Imagine travel trailer. Alaska has been #1 on Hub's bucket list for years. It was quite a challenging and amazing adventure. We focused on nature and history which made the trip extra special. With all that said, I have to say it was great to return to paradise here on the coast of Georgia! I had high hopes to put a newsletter together during our journey but the lack of internet and obligations along the way made it difficult, so I apologize for not getting one out sooner.

There is a lot of news to report and events to mark on your calendars. Most important are the remaining survey dates for 2018. PLEASE sign up ASAP**: October 13 and November 3rd**. The 2019 survey dates will be posted on our website soon.

We also have fall festivals that need volunteers:
October 6 – DNR Coastfest in Brunswick
October 13 – Skidaway Institute of Oceanography Science Day
October 19-21 – Great Ogeechee Seafood Festival, Richmond Hill, GA
October 20 – Don't Drill, Don't Blast concert on Tybee
November 9 – Coastal Ecology Symposium at CCGA, Brunswick
Your help will make our surveys and festival displays successful. Contact us at thedolphinproject@gmail for details and to RSVP.

Our precious coastal environment is still under attack. Read on for details and to see how you can help.

Also in this newsletter is information about plastics you may not know…the bad, the ugly and the good!

Glad to be home,

Peach

IN MEMORIUM

Deepest condolences and prayers go out to the family of TDP member Maryann Jashinske of Acworth, Georgia on her passing. She enjoyed photographing dolphins on our surveys and we miss her. Our sympathies also go out to TDP Vice President, Sandy Workman, on the recent loss of her father.

DON'T BLAST, DON'T DRILL

Seismic testing and oil drilling is still a possibility in our coastal waters and we must **stop it NOW**. The Dolphin Project has partnered with over 78 organizations across the United States to stop big oil. Southern Environmental Law Center and Oceana are spearheading the efforts to protect the Eastern Seaboard.

Oceana is coordinating a **'Don't Blast, Don't Drill'** event on Tybee to take place on **October 20th** with bands and speakers. TDP Committee Chair, Kristi White, is our liaison with Oceana for this event. When details are finalized we'll email them to you. If you'd like to help, let us know.

The Biggest Oil Leak You've Never Heard Of...Leaking for 14 Years!

Did you know that many oil rigs are continuous leaking in the Gulf of Mexico?

Far away from TV cameras and under the radar of the nightly news, oil has been continuously leaking from a damaged production platform located just 12 miles off the coast of Louisiana in the Gulf of Mexico—causing an oily sheens on the surface that stretch for miles and are visible from space. These underwater oil wells have been leaking since 2004 and continue to leak as you read this. Unless it is plugged, the government estimates the leak might continue for **100 years** until the oil in the underground reservoir is finally depleted. The platform's owner, Taylor Energy, **has no plans to stop the leak and is lobbying behind the scenes** for permission to walk away from its mess.

The Risks of Offshore Oil Production… In September 2004, Hurricane Ivan slammed into the Gulf and unleashed an underwater mudslide which toppled the Mississippi Canyon 20 (MC20) oil platform. The offshore platform was located in 450 feet of water near the outlet of the Mississippi River. After the mudslide, the platform ended up on the seafloor, 900 feet from its original location and plumes of oil began seeping from the broken well casings of more than 20 wells that had been connected to the platform. [It's not uncommon for one oil rig to have numerous wells - some have over 20!]

Although the company began working to contain the leak, the mudslide made traditional well containment tactics difficult. Taylor Energy was more effective at keeping the oil leak under wraps and information about it was not **made public until 2010**, when BP's Deepwater Horizon disaster brought added scrutiny to the region. While reviewing satellite imagery of BP's oil slick, the watchdog group **SkyTruth** noticed a smaller slick coming from the MC20 location. Measuring the size of the oil slick in satellite images, **SkyTruth** was able to estimate a leakage rate ranging from 37 to 900 gallons per day. Over the years, that rate adds up to **between 300,000 and 1.4 million gallons** of oil spilled into the Gulf. To put those numbers into perspective, the MC20 leak could be the equivalent of last year's Refugio Beach leak in Santa Barbara, California—**happening every year for a decade**.

The Biggest Oil Leak You've Never Heard Of… continued

Dodging Their Responsibilities… Even after it was finally revealed to the public in 2010, the leak has been shrouded in a frustrating level of secrecy. For years, Taylor Energy had reported estimates of the spilled oil to the National Response Center that were extremely small—and in many cases flatly contradicted by the images analyzed by **SkyTruth**. In 2015, following rigorous documentation by **SkyTruth** and an investigation by the Associated Press, the **U.S. Coast Guard released a leak estimate that was 20 times larger** than what had been claimed by Taylor Energy in court filings. The Associated Press also reported that the company has been reluctant to share information about the leak and their attempts to plug it, citing trade secrets and proprietary information. The lack of transparency led to a lawsuit by **Waterkeeper Alliance** and other environmental groups. As part of that settlement, Taylor did host a public meeting on Jan. 20 and provided some additional information to the public.

Although the flow of oil shows no signs of abating, it's clear that the company would like to wash its hands of the whole situation. Taylor Energy has mostly ceased to exist as a company and company president William Pecue is its last remaining employee. Pecue has called the leak an "act of God" for which Taylor cannot legally be held responsible. The company and their hired experts maintain that any further action to halt the leaks would be worse for the environment and therefore they propose "to not take any affirmative action" at the site. Phyllis Taylor, the widow of the company's founder, is a well-known philanthropist and a major donor to Louisiana politicians. As a result of those connections, a number of Louisiana officials have lobbied the government to consider Taylor's proposal. The company is also suing the federal government to recover $432 million in a trust fund that had been set aside for responding to the leak. However, in public statements the U.S. government maintains that there is "still more that can be done by Taylor to control and contain the oil" and that they are committed "to ensure Taylor Energy will work to permanently stop the ongoing oil leaks."

There Will Be Leaks… The MC20 leak is a prime example of how chronic oil pollution is a constant presence in areas where oil and gas are produced. The media pays close attention when mega-spills like the Deepwater Horizon disaster occur, but the normal day-to-day operations of offshore oil companies inevitably lead to a constant stream of releases and small spills from pipelines, tankers, ships, decommissioned equipment and other sources. **SkyTruth** has mapped the nearly 10,000 spills reported to the National Response Center from July 2010 (after the BP Deepwater disaster) to April 2015. The connection between leaks and oil production is clear when comparing different regions of the Gulf. In the western gulf, leaks are common, especially in the waters off Texas and Louisiana. By contrast, oil exploration is currently banned in the eastern gulf near Florida and, as a result, oil 'spills' are much rarer.

A 2011 Bloomberg investigation found that the culture of non-compliance and lax enforcement in Louisiana meant that companies responsible for persistent pollution were rarely held accountable. One marine biologist summarized the impacts, stating, "When you leak any amount of oil in a marine system, organisms die" and that chronic leaks are "a huge problem and far more damaging than most people suspect."

From Cradle to Grave, Oil Production is Harmful…

The production and use of oil is harmful to the environment at every stage of its lifecycle, from cradle to grave. Seismic blasting is used to discover new deposits of oil and gas below the seafloor, significantly disrupting and even injuring marine life, especially whales and dolphins. When those oil and gas deposits are extracted, transported, refined and burned as fuel they release the greenhouse gases that are causing our climate catastrophe. At each stage of the process, oil spills and toxic contamination are all-too-common impacts on human health and the environment.

Taylor Energy has demonstrated that pollution—and lack of accountability—can continue for years even after the company has ceased operations. All the more reason to keep fossil fuels where they belong—underground.

Send an urgent message to President Trump right now to stop all new offshore oil & gas leases. (Reported by EcoWatch)

On-going Research in the Gulf after the BP Deepwater Disaster

DISPERSANTS: THE LESSER OF TWO EVILS? https://www.youtube.com/watch?v=siZMcWvFvM8
I DIDN'T FOLLOW IN MY FATHER'S FOOTSTEPS https://www.youtube.com/watch?v=hI2nPGkSkq0
REALITY OR SCIENCE FICTION? https://www.youtube.com/watch?v=rDJ5HQxTauA
SECRETS FROM THE DEEP, Part 1 https://www.youtube.com/watch?v=eVSn9XvL4S0
SECRETS FROM THE DEEP, Part 2 https://www.youtube.com/watch?v=UW8AXq7cZIw
DEEPWATER HORIZON IMPACTS ON DOLPHINS https://www.youtube.com/watch?v=NkxQEmAin6o

ESA—ENDANGERED SPECIES ACT

ZINKE LOOKS TO EASE SOME WILDLIFE RULES By Timothy Cama 09/11/18 11:10 AM EDT 23

Interior Secretary Ryan Zinke wants federal fish and wildlife managers to better align their policies with state rules. In a memo Monday to officials in the Fish and Wildlife Service (FWS) and other agencies involved in wildlife management, Zinke asked staff to find instances where policies for wildlife on federal land are more restrictive than rules for the states they're in, and to construct plans to ease those policies and better align them.

"The effective stewardship of fish and wildlife requires the cooperation of the various states and the federal government," Zinke wrote in the memo, which the group Public Employees for Environmental Responsibility (PEER) released. "The states' fundamental responsibility for fish and wildlife management includes responsibility for appropriate regulation of public use and enjoyment of fish and wildlife species," he said. "The department recognizes states as the first-line authorities for fish and wildlife management and hereby expresses its commitment to defer to the states in this regard except as otherwise required by federal law."

PEER, which has often clashed with Zinke and other Trump administration officials, blasted the memo, saying it will lead to a massive rollback of wildlife protections. "This across-the-board abandonment of federal fish and wildlife safeguards is rooted in an ideological stance unsupported by any factual analysis," Jeff Ruch, the group's executive director, said in a statement. "Federal parks, preserves, and refuges have a mission to protect biodiversity and should not be reduced to game farms." The memo is just the latest in a string of wildlife-related policies from the Trump administration that conservationists say seriously weaken protections. The administration in July proposed a handful of changes to how it enforces the Endangered Species Act, including making it easier to remove species' protections and harder to protect habitat.

These proposals would fundamentally overhaul how the ESA operates and severely diminish protections for endangered and threatened species across the nation, but particularly for the Southeast's unique, valued species and ecosystems. The Dolphin Project joined 123 organizations in signing on to the comment letter opposing these dangerous rollbacks which was composed by The Southern Environmental Law Center. It will be submitted to NOAA-NMFS on September 24th.

2019: TDP 30th ANNIVERSARY CELEBRATIONS!!!!!

The Dolphin Project was originally setup as a 10 year program. But here we are, 30 years later. We must be doing something right!!! Mark your calendars for some fun dates! The Dolphin Project turns 30 next year and we've some special events planned. If you'd like to help coordinate any of them, please let us know.

Jim Wann

January 26th, 27th: Jim Wann concert at the Tybee Theater benefitting TDP. Jim has a home on Tybee and writes/sings about the coast. Check out Jim and his music: https://jimwann.com/

July 3rd: It's **The Dolphin Project Day at Savannah Bananas**! We'll have a tent outside featuring our amazing volunteers. There will be fireworks that evening and TDP will be featured during the game. The $18 tickets will include admittance to the game, all-you-can-eat at the concession stand and a donation to TDP, so this is a fundraiser for us. If you'd like some tickets, contact us: thedolphinproject@gmail.com. The game is expected to be a sell-out. We have 100 tickets reserved, so reserve yours ASAP!

In the works…. Summer – Art Show benefitting TDP

Fall – Oyster Roast benefitting TDP

AND MORE!

Rude Clerk Tells Old Woman She Doesn't Care About The Environment.

HER RESPONSE IS GOLDEN…

Checking out at the store, the young cashier suggested to the much older lady that she should bring her own grocery bags, because plastic bags are not good for the environment. The woman apologized to the young girl and explained, "We didn't have this 'green thing' back in my earlier days." The young clerk responded, "That's our problem today. Your generation did not care enough to save our environment for future generations." The older lady said that she was right — our generation didn't have the "green thing" in its day. The older lady went on to explain: Back then, we returned milk bottles, soda bottles and beer bottles to the store. The store sent them back to the plant to be washed and sterilized and refilled, so it could use the same bottles over and over. So they really were recycled. But we didn't have the "green thing" back in our day.

Grocery stores bagged our groceries in brown paper bags that we reused for numerous things. Most memorable besides household garbage bags was the use of brown paper bags as book covers for our school books. This was to ensure that public property (the books provided for our use by the school) was not defaced by our scribblings. Then we were able to personalize our books on the brown paper bags. But, too bad we didn't do the "green thing" back then.

We walked up stairs because we didn't have an escalator in every store and office building. We walked to the grocery store and didn't climb into a 300-horsepower machine every time we had to go two blocks. But she was right. We didn't have the "green thing" in our day.

Back then we washed the baby's diapers because we didn't have the throw away kind. We dried clothes on a line, not in an energy-gobbling machine burning up 220 volts. Wind and solar power really did dry our clothes back in our early days. Kids got hand-me-down clothes from their brothers or sisters, not always brand-new clothing. But that young lady is right; we didn't have the "green thing" back in our day.

Back then we had one TV, or radio, in the house — not a TV in every room. And the TV had a small screen the size of a handkerchief (remember them?), not a screen the size of the state of Montana. In the kitchen we blended and stirred by hand because we didn't have electric machines to do everything for us. When we packaged a fragile item to send in the mail, we used wadded up old newspapers to cushion it, not Styrofoam or plastic bubble wrap. Back then, we didn't fire up an engine and burn gasoline just to cut the lawn. We used a push mower that ran on human power. We exercised by working so we didn't need to go to a health club to run on treadmills that operate on electricity. But she's right; we didn't have the "green thing" back then.

We drank from a fountain when we were thirsty instead of using a cup or a plastic bottle every time we had a drink of water. We refilled writing pens with ink instead of buying a new pen, and we replaced the razor blade in a razor instead of throwing away the whole razor just because the blade got dull. But we didn't have the "green thing" back then.
Back then, people took the streetcar or a bus and kids rode their bikes to school or walked instead of turning their moms into a 24-hour taxi service in the family's $45,000 SUV or van, which cost what a whole house did before the "green thing."

We had one electrical outlet in a room, not an entire bank of sockets to power a dozen appliances. And we didn't need a computerized gadget to receive a signal beamed from satellites 23,000 miles out in space in order to find the nearest burger joint. But isn't it sad the current generation laments how wasteful we old folks were, just because we didn't have the "green thing" back then?

We don't like being old in the first place, so it doesn't take much to piss us off… Especially from a tattooed, multiple pierced smartass who can't make change without the cash register telling them how much.

Source: *This has been circulating online for a few years now. I can't find who wrote it, but bless his/her heart because this is connecting with lot of people — both young and old. If you do know who wrote it and there is strong evidence, please let me know so I can give him or her proper credit.*

Rude Clerk (Continued)

From Peach: *I'm sure you 'seasoned' folks like me can relate to this article. I remember when meat from the grocery store was wrapped in paper, not plastic wrap and styrofoam trays like it is today. I remember when straws and fast food cups were paper, not plastic. I buy paper straws online and keep some in my car. I ask for paper grocery bags if I forget my fabric bags. It pained me on our 3 month Alaska trip when I couldn't recycle bottles and disposable plastic. Only one campground we stayed at offered recycling containers.*

Why Horseshoe Crab (HSC) Blood Is So Expensive...

By Jacqui Frank & Abby Tang, Sep 12, 2018, 10:50 AM ET

Horseshoe crab blood is a vital resource to the medical field. It's unique in more ways than one: the blue color and its ability to identify bacterial contamination in small quantities. Horseshoe crab blood contains a special amebocyte that is separated and then used in FDA testing. There's a lot of questions as to how blood harvesting affects the American horseshoe crab population, but some researchers are dedicated to the cause of protecting such a significant resource.

When asked to comment, Charles River Labs responded with the following: "Charles River is dedicated to the protection and conservation of HSCs and has been an advocate for the humane treatment of horseshoe crabs for more than 25 years. In 1992, we worked with the SC-DNR to enact state legislation that called for the management and regulation of horseshoe crab fisheries, prohibiting the use of horseshoe crabs for bait. Due to these regulations, the horseshoe crab population in South Carolina is increasing and has been for the past 15 years. Understanding the vital role HSC's unique blue blood plays in the safe discovery of new medicines and therapies, we are proud to be an industry leader in horseshoe crab conservation efforts." Following is a transcript of the video.

This blueish liquid is one of the most expensive resources in the world. No, it's not the blue milk from "Star Wars." It's actually blood from a horseshoe crab, and the stuff this blood makes costs $60,000 a gallon. So why is it so expensive and who's buying horseshoe crab blood? The blue color comes from copper in the blood. But that's not its most interesting feature. The blood contains a special clotting agent. It's used to make a concoction called Limulus amebocyte lysate or LAL. Before LAL, scientists had no easy way of knowing whether a vaccine or medical tool was contaminated with bacteria. Like E. coli or salmonella. Scientists would inject vaccines into huge numbers of rabbits and then basically wait for symptoms to show up. But when LAL was approved for use in 1970, it changed everything. Drop a minuscule amount of it onto a medical device or vaccine, and the LAL will encase any gram-negative bacteria in a jelly cocoon. While it can't kill the bacteria, the jelly seal is like a fire alarm. Alerting us to the presence of what could become a potentially lethal infection and prevent it from spreading.

Each year, the medical industry catches around 600,000 horseshoe crabs. The crabs are drained of 30% of their blood and up to 30% of the crabs don't live through the process. The survivors are returned to the water, but no one really knows how well or if they recover. In 2016, the International Union for the Conservation of Nature bumped the American horseshoe crab up to vulnerable on it's red list, one step below endangered. And the US population could keep falling, by as much as 30% over the next 40 years. LAL Labs claim that the returned crabs eventually recover, but new evidence suggests that's not always the case. Win Watson is trying to figure out what happens to the crabs when they're put back in the sea.

Win Watson: So, the most immediate negative effect is mortality. Anywhere from 10% to 25% of the animals will die within the first couple days after bleeding.

Horseshoe Crabs

Narrator: Bled crabs become disoriented and weak for a period of time, and females may have trouble spawning.
Watson: If they survive the first - I'll say two weeks, week, two week - and they're back in their natural habitat they did pretty well.
Narrator: But it's getting through those two weeks that's the issue.
Watson: You know, based on our data and other's, I think that you need to treat them a little - if you're going to increase their survival rate, right, you need to treat them better.
Narrator: Scientists are trying to find a synthetic alternative to help reduce the strain on the horseshoe crab population. But so far, LAL is still required by the FDA for this type of testing. So if these animals really aren't recovering at the rate companies previously thought, we might eventually run out of crabs to bleed. If that happens, our lives and the lives of countless rabbits, might be at risk.

[FYI: horseshoe crabs are not crabs at all. These living fossils are actually arthropods; closely related to arachnids… spiders!]

PLASTICS—THE BAD, THE UGLY AND THE GOOD…

Chemicals From Plastics, Cosmetics Found in Wild Dolphins

Past studies have linked these same chemicals, known as phthalates, to certain forms of cancer and reproductive problems.

Sarah Gibbons, National Geographic, Published September 7, 2018

The American Geophysical Union is dedicated to advancing the Earth and space sciences for the benefit of humanity through its scholarly publications, conferences, and outreach programs. AGU is a not-for-profit, professional, scientific organization representing 60,000 members in 137 countries

The Bottlenose dolphins of Sarasota bay are known to be friendly and curious—and a draw for tourists. But new research shows the dolphins can't escape manmade chemicals, which are accumulating in their bodies and potentially impacting their health. A study published this week in the journal *American Geophysical Union* found that phthalates, a common class of chemical additives found in many of the goods inside our homes—such as plastics, cosmetics, and paints—are also present in bottlenose dolphins.

From 2016 to 2017, researchers from the College of Charleston and Chicago Zoological Society collected urine samples from 17 dolphins found in the bay. Urine allowed researchers to see chemicals that were still present anywhere from three to six months after the dolphin came into contact with it. This is the first time these chemicals have been found in wild dolphins. The animals in this area have become well-known to researchers, who have been studying these creatures for more than 40 years. “We weren't surprised to detect exposure, but what was surprising were the levels we were detecting,” says the study's lead author Leslie Hart. At least one form of phthalate was found in 71 percent of the tested dolphins.
Because this was the first time researchers used urine to test, Hart says they’re still establishing what’s considered normal or abnormal. But some of the dolphins had levels of phthalate metabolites comparable to concentrations detected in people, she says, which is surprising since humans presumably come into more regular contact with objects—like plastics or cosmetics—that contain these chemicals. While scientists now have a better idea of which chemicals are ending up in dolphins, the study raises concerning questions about how the animals might be coming into contact with phthalates and how this could impact their health.

Phthalates in the Environment

Phthalates are used to make plastics and vinyl softer and more flexible, and they're extremely widespread in the world's consumer goods. Before 1999, they were found in infant teething tools like pacifiers, though they have since been banned in some children's' toys. The U.S. National Library of Medicine notes that little is known about the full health impacts of phthalates, though they've been found in water, soil, and air.

Because dolphins are high on the food chain, live long lives, and often swim through waters off the coast of urban areas, they're "great sentinels of the ecosystem," says dolphin researcher Dr. Tara Cox, at Savannah State University, who was not affiliated with the study. "They can give us info on what's going on in the environment and what could affect humans," she notes.

A study of one phthalate compound found that when rats experienced long term exposure to a particular phthalate, they developed liver cancer and had reproductive issues. Hart's work is part of an ongoing project to study health impacts of phthalates and how they're dispersed throughout the environment. She's also conducted studies using college students to understand the behaviors that increase the risk of exposure.

In some trials, altering the students' consumer behavior—by asking them to not use common products like shampoos and soaps that contain phthalates—showed a measurable decline in the chemical traces found in their bodies. While scientists still have much to learn about the dangers of phthalates, Hart hopes identifying the biggest sources of these chemicals will reduce exposure and any related health risks. "You can see trickle-down effects into the environment," Hart says of reducing consumer demand.

How Dolphins Accumulate It

Gina Ylitalo, an analytical chemist at NOAA's Northwest Fisheries Science Center who was not involved in the study, said dolphins are good indicators of what is going on in coastal waters. "Any animals in the near shore environment with similar prey are probably being exposed as well," she said. "The dolphins are great sentinels of the marine environment."

Indicator species

Understanding what dolphins are exposed to gives researchers and the public a better idea of what is in the environment. The study is particularly valuable because of the long-term data available on the Sarasota dolphins' health and behavior, said Ylitalo. Bottlenose dolphins are good indicators of pollutant exposure in whales and dolphins that can't be easily sampled. "We will not be getting urine samples from killer whales in my neck of the woods," Ylitalo said. "They don't know what the health effects are yet, but if any group can do it, it will be these type of folks who start teasing it out." Documenting exposure was an important first step, Hart said. She wants to expand the sample size to continue investigating the extent and potential health impacts of exposure and start tracking down possible sources. Ultimately, she hopes this research could be used to help curtail the sources of contamination. "We've introduced these chemicals, they are not natural toxins, and we have the ability to reverse it, to clean this up." Hart said.

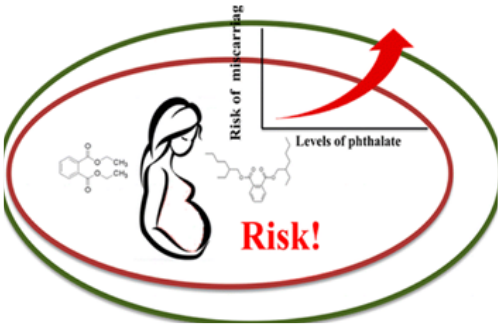
The next phase of research on dolphins in Sarasota Bay will try to identify how dolphins are metabolizing phthalates. Scientists are also trying to understand how these chemicals get into the dolphins' bodies. Other aquatic organisms like algae, fish, and some invertebrates have shown traces of phthalates, so it's possible the dolphins are preying on animals that contain these substances. As plastic breaks down, it also releases phthalates into the water, and runoff from urban centers may contain traces of the chemicals that leach into the ocean.

Without testing animals in other regions, Hart can't say if the issue is widespread, but she says it stands to reason that other dolphin populations could show traces of similar chemicals. Cox agrees that the issue is likely more widespread than Florida. "Anywhere with humans in close proximity, you'll have this runoff," she says.

EXPOSURE to PHTHALATES COULD BE LINKED TO PREGNACY LOSS

September 2, 2015, American Chemical Society ***Journal reference: Environmental Science & Technology***

A new study of more than 300 women suggests that exposure to certain phthalates—substances commonly used in food packaging, personal-care and other everyday products—could be associated with miscarriage, mostly between 5 and 13 weeks of pregnancy. The research, appearing in the ACS journal *Environmental Science & Technology*, is the first epidemiological study on non-work-related exposure to phthalates to provide evidence for the possible link among a general population.



Out of concern over the potential health effects of phthalates, the U.S. has banned six of these substances from use in certain products made for young children. But many are still included as ingredients in paints, medical tubes, vinyl flooring, soaps, shampoos and other items. Research on phthalates has shown that long-term exposure to low levels of the some of these compounds harms lab animals' health and can increase their risk for pregnancy loss. Additionally, at least one study found that female factory workers exposed to high levels of phthalates through their work were at a higher risk for miscarriage. But there is little epidemiological evidence of phthalates' effects on pregnancy among women with non-occupational exposure. Jianying Hu, Huan Shen and colleagues wanted to find out if there might be a link.

The researchers tested urine samples from 132 women who had miscarriages and 172 healthy pregnant women in China. They found pregnancy loss was associated with higher levels of urinary phthalate metabolites from diethyl phthalate (DEP), di-isobutyl phthalate (DiBP) and di-n-butyl phthalate (DnBP). Although this doesn't prove that phthalates cause pregnancy loss, the study suggests an association exists that the researchers say should be studied further.

PLASTIC IS KILLING 40% OF BABY SEA TURTLES

- **Hatchlings are four times more likely to be killed by ingesting the deadly material than their parents**
- **Baby turtles are four times more likely to die from eating plastic than adults**
- **Not only do they have weaker bodies, but they also feed in offshore waters**
- **These areas are much more likely to be contaminated with large plastic items**

PUBLISHED: *09:14 EDT, 13 September 2018 by Phoebe West for Mailonline*

Plastic is killing 40 per cent of young sea turtles, shocking new research has shown.
Baby turtles are almost four times more likely to be killed by ingesting plastic waste compared to adults. Not only do these animals have weaker bodies, but they also feed in offshore waters closer to the surface, which are more likely to be contaminated with large plastic items that can accumulate in their digestive tracts. Post mortems on almost 1,000 dead turtles found more than half of the babies – and about a quarter of juveniles – had swallowed plastic, compared to just one in seven adults.

The study looked at species including loggerheads, green turtles, leatherbacks, hawksbills, Kemp's Ridleys Olive Ridleys and Flatbacks.

Not only do they have weaker bodies but they also feed in offshore waters closer to the surface. These areas are more likely to be contaminated with large plastic items that can accumulate in their digestive tracts

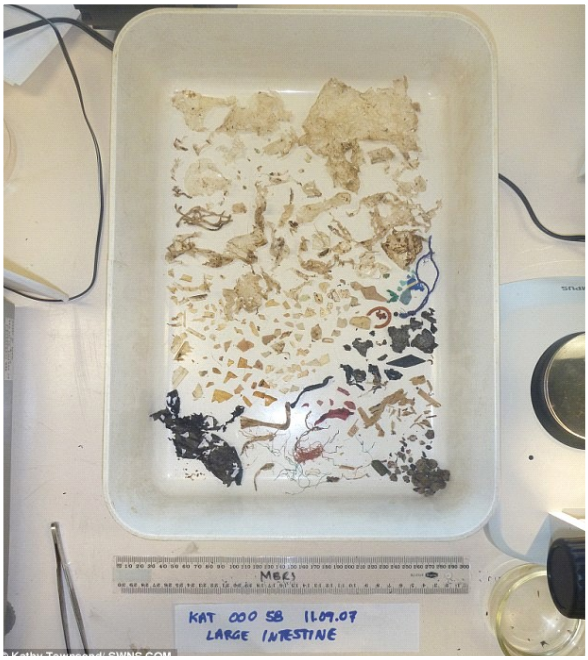
Scientists discovered between one to 329 individual pieces of plastic ingested by the turtles in the study.

The maximum weight of the plastic was 10.41g (0.4 ounces). There was a 50 per cent probability of death once the animal had just 14 pieces of plastic in its gut, according to scientists. The study, which is the first of its kind, was led by scientists from the Commonwealth Scientific and Industrial Research Organization in Hobart, Tasmania. It sheds fresh light on the risk plastic pollution poses to the world's declining sea turtle population, who often mistake rubbish dumped in the ocean for food. This can range from six pack rings from canned drinks to discarded fishing gear.

Corresponding author Dr. Denise Hardesty, of the Commonwealth Scientific and Industrial Research Organization said: 'The accumulation and persistence of plastic debris in the marine environment is of increasing concern. 'An estimated 4.8 to 12.7 million metric tons of plastic debris entered the world's oceans from land-based sources in 2010 alone, with this input likely to increase exponentially into the future. 'This poses a considerable threat to marine life, primarily through entanglement and ingestion.' She said that although entanglement can have devastating effects, particularly when it involves fishing gear, ingestion of man-made debris is of increasing concern. Her team examined data from 952 autopsies on sea turtles washed-up on the coast of Queensland since 1992.

Their research confirmed fears plastic was disproportionately affecting younger generations – especially babies. Species looked at included loggerheads, green turtles, leatherbacks, hawksbills, Kemp's Ridleys, Olive Ridleys and Flatbacks. They found 54 per cent of post hatchlings and 23 per cent of juveniles had eaten plastic, compared to 16 per cent of adults.

Plastic is killing 40 per cent of young sea turtles, shocking research has revealed. Baby turtles are almost four times as likely to die from eating plastic than adults. Pictured is all the plastic removed from the large intestine of a Green sea turtle



The amount of plastic in the oceans is expected to triple in just ten years, a report issued by the UK government in March 2018 warned. This key environmental problem risks being 'out of sight, out of mind' with more known about the surface of Mars and the Moon than the deep sea bed, it added. The toll of plastic pollution in the sea could be 150million ton by 2025 – treble the 50 million tons estimated in 2015. Our oceans store carbon dioxide and heat while producing oxygen and food, the Foresight Future of the Sea Report stressed.

On the growing blight of plastic pollution, the document warned this will leave a physical presence, accumulating on coasts or in particular areas of ocean. The report also warned plastic litter on coasts can increase the risk of dangerous bacteria in the water, such as E.coli. It said efforts to reduce plastic pollution should focus on stopping it entering the sea, developing new biodegradable materials and public awareness campaigns. The amount of plastic in the turtles' digestive tracts also varied depending on their cause of death. Those that had died from unknown causes, which acted as a statistical control group, had consumed the smallest amounts followed by those that had been hit by boats or had drowned.

Crucially, those confirmed to have died from plastic ingestion had eaten the most – underlining its threat to sea turtles and other marine life. Dr. Hardesty said: 'Animals dying of known causes unrelated to plastic ingestion had less plastic in their gut than those that died of either indeterminate causes or due to plastic ingestion directly - such as gut impaction and perforation. 'We found a 50 per cent probability of mortality once an animal had 14 pieces of plastic in its gut.' She added: 'Our results provide the critical link between recent estimates of plastic ingestion and the population effects of this environmental threat.'

The findings, published in Scientific Reports, show feeding location and life history stage may impact the turtles' risk of dying. Dr. Hardesty explained: 'Younger turtles tend to drift with currents and feed in offshore waters closer to the surface, which are more likely to be contaminated with large plastic items that can accumulate in the animals' digestive tracts, or cause perforation.' Sea turtles were among the first animals recorded to consume plastic debris, a

phenomenon that 'occurs in every region of the world and in all seven marine turtle species'. She said: 'Globally, it is estimated that approximately 52 per cent of all sea turtles have ingested plastic debris. 'Plastic in the marine environment is a growing environmental issue. 'Sea turtles are at significant risk of ingesting plastic debris at all stages of their life-cycle with potentially lethal consequences.'

The study has implications for all marine life from seabirds and fish to mammals and a range of invertebrates, including corals. Dr. Hardesty said: 'Nearly 700 species are now known to interact with manmade debris and as more species are investigated, the number continues to rise. 'The model has broad applicability and can be adapted for other taxa to understand dose responses to plastic ingestion for other marine taxa of interest.' **Last year, University of Exeter researchers found over 1,000 sea turtles are killed every year from plastic waste in the oceans and on beaches. The worldwide study said this figure is 'almost certainly a gross underestimate.'**

PLASTIC IS EVERYWHERE

Plastic is not only killing marine animals and ecosystems, but countless studies show it's hazardous to human health. These shocking statistics may encourage you to rethink single-use plastic products.

By Jill Schildhouse

If you take a look around your kitchen or office right now, chances are you'll notice you're surrounded by plastic—water bottles, to-go coffee cups, straws, plastic grocery bags, food wrappers, take-out containers, single-serve coffee pods, disposable utensils, and produce bags. These are all examples of single-use plastic products, which is a hot topic nowadays based on both environmental and health concerns.

It's certainly not realistic to remove all plastic from your life, but some stats may encourage you to reduce your single-use plastic footprint by ditching straws, switching to reusable water bottles, bringing cloth bags to the grocery store, and more.

Plastic Production is Off the Charts

The popularity of plastic, which began rising in the 1950s, is growing out of control—18.2 trillion pounds of plastic have been produced around the world, according to a published in the journal *Science Advances*, a publication of the American Association for the Advancement of Science. And there's no sign of slowing down, considering scientists say that another 26.5 trillion pounds will be produced worldwide by 2050.

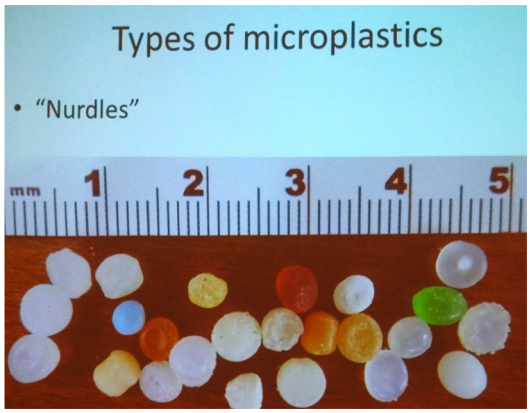
Plastic Ends Up in Our Oceans

"Every piece of plastic that has ever been created will remain in the environment in some form, but once we conveniently throw out our trash at home, wind and runoff carry our waste from landfills and streets down the sewer and directly to the ocean," says Mystic Aquarium's chief clinical veterinarian Jennifer Flower, DVM, MS. "With the average American throwing away 185 pounds of trash per year and globally producing over 320 million tons of plastic annually, the marine environment is taking a big hit from our daily disposal of plastic. Our plastic consumption is directly affecting the marine life in the ocean including fish, which is a main source of food for humans as well. Often our society is so focused on making our lives more convenient in the short term, but in the long run, our health and the health of marine life are at the expense of those everyday conveniences."

Floating Garbage Piles

Marine debris in the Pacific accumulates into something called the Great Pacific Garbage Patch—the largest of the five offshore plastic accumulation zones in the world's oceans. Located halfway between Hawaii and California, this mass of plastic debris takes up over 600,000 square miles of ocean, which is twice the size of Texas. At the time of sampling, there were more than 1.8 trillion pieces of plastic in the patch that weigh an estimated 80,000 tons.

Microplastic Impacts Marine Life



"The plastic that ends up in the Great Lakes can come in the form of macroplastics, like bottles and bags that are visible to us, or microplastics, which can be microscopically small," says Wegner. "Microplastics can come from microfibers of synthetic materials, microbeads from personal care products, and other sources and can be easily ingested by animals like fish and birds." When microplastics float on the surface or become buried in the sand, they are often mistaken as food sources for seabirds, turtles, and marine mammals, says Dr. Flower. This poses a serious threat to marine habitats, wildlife, and ecosystem balance.

Marine Animals Are Suffering

Nearly 700 species of marine animals have been impacted by marine debris, most of which is plastic. "All of us can make choices to reduce our use of plastic, preventing it from becoming pollution that can harm a wide variety of aquatic animals from fish to seabirds to plankton," says Wegner, who notes that for over ten years, the Shedd Aquarium has hosted beach cleanups as part of their Great Lakes Action Days program. This has helped the non-profit organization prioritize straws as a non-recyclable single-use plastic item to focus on in encouraging individuals and businesses to reduce their use. "Keeping straws and microfibers out of animals' habitats is an important way we can protect and care for them."

Plastic Entanglement Kills Marine Life

According to Greenpeace, all known species of sea turtle, 54 percent of all marine mammal species, and 56 percent of all seabird species have been affected by entanglement (mostly by plastic rope and netting) or ingestion (mostly by plastic fragments and microplastic) of marine debris. This includes an estimated 58 percent of seals and sea lions, plus whales, dolphins, porpoises, and manatees.

Seabirds are ingesting plastic

Marine life experts estimated that over 99 percent of all seabird species—and over 90 percent of individual seabirds—will have ingested plastic by 2050. By comparison, in 1960, plastic was found in the stomach of less than 5 percent of seabirds, rising to 80 percent by 2010. The biggest threat from ingestion occurs when plastic blocks the digestive tract or fills the stomach, resulting in malnutrition, starvation, and death.

Laysan Albatross babies are dying

"One bird species, in particular, the Laysan Albatross, is particularly affected by plastic pollution," says Sarah Callan, BS, Assistant Manager of the Animal Rescue Program at Mystic Aquarium. "With approximately 400,000 nesting pairs on Midway Atoll—a small atoll that is roughly 1,200 miles away from civilization — almost 90 percent of the chicks that hatch each year end up with plastics in their stomach. Sadly, many of the chicks are malnourished from a stomach full of plastic and don't survive to the fledgling stage of life."

Coral Reefs are Dying

Yes, coral reefs are beautiful to explore while snorkeling and diving, but they are more than just eye candy—they're living, breathing ecosystems that provide homes for 25 percent of all marine life. Plus, 275 million people depend directly on them for their food and livelihoods. Already struggling to survive climate change, reefs now have a new enemy: plastic. In a survey of 159 coral reefs in the Asia–Pacific region, published in *Science*, researchers estimate there to be 11.1 billion plastic items entangled in the corals. The plastic actually starves reefs of the oxygen and light they need and releases toxins that allow bacteria and viruses to invade.

The Problem Runs Deep

Single-use plastic has officially reached the world's deepest ocean trench, according to a new study: A plastic bag was found 10,898 meters below the surface. Once in the deep-sea, plastic can endure for thousands of years and is a threat to delicate deep ocean ecosystems that were previously untouched by man.

Ocean Microplastic Outnumbers Stars

The next time you look up at the skies on a cloudless night, ponder the enormity of the following statistic: As much as 51 trillion microplastic particles litter our seas, which is 500 times more than the number of stars in our galaxy

Plastics are in the fish we eat.

Plastic's Chemicals Can Harm Marine Life

"A further consequence of ingestion is that the chemical constituents of plastic, as well as the toxins they absorb in the aquatic environment, can enter the bodies of marine organisms upon consumption," says Wegner. Research shows that when animals ingest microplastic, it moves the plastic's pollutants and additives to their tissues, resulting in some biological effects. Find out 25 ways to reduce your carbon footprint.

More Plastic Than Fish

By 2050, environmental scientists estimate that there will be more plastic than fish (by weight) in the world's oceans. This could seriously impact the world's food supply, not to mention the many health risks associated with having so much plastic in our food chain.

Ocean Plastic is Rising Dramatically

In 1975, the National Academy of Sciences study estimated that about 0.1 percent of global plastic production ended up in our oceans annually. In 2015, a team of researchers examined how much plastic waste coastal countries around the world produced and then estimated how much of that could potentially end up in the ocean. The results, published in *Science,* indicate that 4 million to 12 million metric tons of plastic washed offshore in 2010 alone. Scarier still, the authors predict that the annual amount of plastic waste heading out to sea will more than double in the next ten years.

Truckloads of Plastic

One study shows that 32 percent of the 78 million tons of plastic packaging produced annually ends up in our oceans—to help comprehend that level of devastation, it's the equivalent of pouring one garbage truck of plastic into the ocean every minute. Researchers expect this rate to increase to two per minute by 2030 and four per minute by 2050

The Great Lakes are Swimming in Plastic

According to the United States Environmental Protection Agency (EPA), the five Great Lakes provide 21 percent of the world's supply of surface fresh water. "About 22 million pounds of plastic flow into the Great Lakes each year," says Jaclyn Wegner, director of conservation action at the John G. Shedd Aquarium in Chicago. "The Great Lakes are critical to the wellbeing of humans and wildlife alike. We rely on this water to be clean and accessible for people to drink and for animals to not only survive but thrive."

Plastic Could Take Away Natural Serenity

"We associate peace, relaxation, and good health with our coastlines," says Brian Yurasits, Director of Development at The TerraMar Project, which raises awareness for ocean issues. Researchers at Michigan State University show that people who live near the water report less psychological distress. "People visit beaches and waterways to satisfy our natural inclination to be near the ocean," says Yurasits. "If plastics become more pervasive in these natural places, then people won't be able to get that same escape from reality and the stress-relief that they need."

Most Plastic is Single-Use

Did you know that roughly half of the annual plastic production—in 2016, this number totaled around 335 million metric tons—is destined for a single-use product? This includes items like plastic bags (which have an average lifespan of 15 minutes), packaging, water bottles, and straws. For instance, did you know that traditional liquid laundry detergents are usually packaged in high-density polyethylene (HDPE plastic jugs) and that 68 percent of these bottles are not recycled? Companies like Dropps are committed to reducing single-use plastic waste by offering laundry pods that are made of plant-based, biodegradable ingredients and shipped in 100 percent recyclable, repulpable, compostable cardboard box. Straws are banned from Buckingham Palace.

Bottled Water is Full of Microplastic

Large pieces of plastic break down into microplastics. A recently released study tested 259 water bottles from 11 brands sold across nine countries, including the United States. The findings? A whopping 93 percent of those tested contained microplastic contamination—at an average of 10.4 plastic particles per liter of water. That's double the plastic contamination found in tap water. Of these plastic particles, 65 percent were "fragments" of plastic, including the plastic used to make the bottle caps. Make the switch to reusable stainless steel water bottles, which don't have any plastic parts; as an added bonus, double-wall insulated designs will keep your beverages cold for 24 hours or hot up to 12 hours.

BPA Mimics Human Hormones

BPA (bisphenol A) is a chemical that has been used in the production of plastics since the 1960s and often comes into direct contact with food, including plastic packaging, kitchenware, and the inner coatings of cans and jar caps. Studies show that BPA interacts with estrogen receptors and play a role in the pathogenesis of several endocrine disorders, including female and male infertility, early puberty, breast and prostate cancer, and polycystic ovary syndrome (PCOS). There's a reason you see so many products being marketed as BPA-free these days.

BPA Linked to Obesity

As a known endocrine disruptor, BPA can interfere with normal endocrine system functioning, including the serum levels of hormones that regulate metabolism. There is growing evidence that BPA may play a role in the development of obesity both in utero and later in life.

BPA Causes Birth Defects and Miscarriages

A new study has found evidence that BPA may negatively impact women's reproductive systems and cause chromosome damage, birth defects and miscarriages. Researchers from Washington State University and the University of California, Davis, found that monkeys exposed to BPA in utero experienced reproductive abnormalities that increased their risk of giving birth to offspring with Down syndrome or even suffering a miscarriage.

BPA is Bad for Babies

A recent report reveals that using plastic containers to store or heat food in microwaves could pose a potential health risk to children. The American Academy of Pediatrics is calling for reforms after a report suggested that some chemicals found in food colorings, preservatives, and packaging material might pose a risk to children. The report cites "an increasing number of studies" that suggest certain food additives can disrupt hormones, growth, and

development, as well as increase the chances of childhood obesity. The most concerning artificial additives? You guessed it: BPAs found in plastic containers and metal cans. Parents are urged to avoid using microwaves to warm food and beverages or placing plastics in the dishwasher.

BPA Affects Thyroid Function

Thyroid hormones, which regulate energy in the body, are also altered by BPA. In November 2016, the *International Journal of Environmental Research and Public Health* published evidence linking BPA with autoimmune thyroid disorders (such as Hashimoto's disease). Lab tests measuring BPA exceeded measurable detection limits in 52 percent of individuals with elevated thyroid antibodies. The toxic levels of BPA had caused their thyroid gland to be under autoimmune attack.

BPA Increases Blood Pressure

Megan Casper, MS, RDN, a dietitian and owner of *Nourished Bite Nutrition* based in NYC, says that consuming beverages from cans lined with BPA can raise blood pressure. In clinical trials, volunteers drank the same beverage in glass bottles or cans. Two hours after consumption, researchers measured their urinary BPA concentration and blood pressure; BPA urine levels were higher in the canned group, and their systolic blood pressure jumped by an average of 4.5 mm Hg, compared to the glass bottle group.

BPA Increases Diabetes Risk

A report issued by the US Endocrine Society indicates that exposure to endocrine-disrupting chemicals (EDCs)—like BPA—can raise your risk of diabetes. The group pointed to numerous studies, including a long-term epidemiological study which tied EDCs to type 2 diabetes.

BPA Irritates Your Bowels

A recent study shows that BPA has been associated with irritable bowel disease, by negatively impacting gut microbial amino acid metabolism. Irritable bowel disease is a collection of diseases that includes ulcerative colitis and Crohn's disease. Exposure to BPA was also found to increase the levels of several compounds that drive colon inflammation.

BPA Contributes to Heart Disease

Early research suggests that BPA can harm the heart and arteries, leading to troubles like arrhythmias (abnormal heartbeat) and atherosclerosis (build-up of plaque on the artery walls).

Plastic Promotes Alzheimer's Disease

"Plastic promotes the formation of toxic brain proteins linked to the development of Alzheimer's disease," says Jennie Ann Freiman MD, author of *The SEEDS Plan,* a book inspired by her own mother's Alzheimer's disease. "The brains of people with Alzheimer's disease are riddled with plastic deposits. Anyone with brain fog or impaired thinking should take note."

BPA-Free May be B.S.

While it's tempting to believe BPA-free plastics will solve these problems, the truth is more complicates. A recent study examined more than 450 BPA-free products going through ordinary wear and tear, such as microwaving, dishwashing, and sunlight exposure. More than 95 percent emitted chemicals that acted like estrogen—just like BPA. "So while BPA is on its way out, the fact is that the replacements to BPA just haven't been studied well and may have similar effects," says Casper. "In fact, BPS, a popular plastic replacement for BPA in water bottles, does not have to be labeled and, once ingested, behaves much the same way as BPA." Consider upgrading to non-toxic, stainless steel food containers for packed lunches and leftovers. These environment-friendly containers come in a variety of sizes, feature leak-proof silicone lids. Compared to plastic, silicone lasts longer, stands up better against heat and cold, and is more ocean-friendly—plus it's odorless, stain-resistant, hypoallergenic, and has no open pores to harbor harmful bacteria. Plus, they're dishwasher and oven safe

Linked to Genital Birth Defects

Rodent studies show that prenatal exposure to some phthalates, another chemical found in plastic, can disrupt normal male reproductive tract development, causing undescended testicles and testicular abnormalities. **Phthalates** are also linked to hypospadias, a condition in which the opening of the penis is on the underside rather than the tip. If you are expecting, it's especially wise to avoid plastic.

Phthalates Could Stunt Brain Growth

A study published in the *The Journal of Neuroscience* found that phthalates could alter the brains of rats. The team found when pregnant moms were fed food spiked with phthalates, their offspring had significant lack of both neurons and synapses in the medial prefrontal cortex, which is involved in such high-level cognitive functions as memory, decision-making, error detection, conflict monitoring, and cognitive flexibility.

Heat and Plastic Don't Mix

According to Harvard medical experts, when food is wrapped in plastic—or placed in a plastic container and microwaved—BPA and phthalates may leak into the food. They note that migration is likely to be greater with fatty foods, such as meats and cheeses. "Heated plastic leaches chemicals 55 times faster, so whether you're reheating a plate in the microwave, putting hot food in a storage container, or using a plate that's been run through a hot dishwasher, you're upping your chance of chemical leaching," says Casper. If you want to microwave leftovers, choose a glass dish like Pyrex and leave the BPA-free lid off just to be safe.

Scratches in Plastic Lead to Leaching

Bits of plastic get into your food from containers through a process called leaching, and when plastic is scratched, it speeds up the leaching process. For that reason, be sure to throw out worn plastic items (such as food storage containers). To further avoid this toxic transfer, eat less canned food and more frozen or fresh food. Also, avoid using bottles and plastic containers that are made from polycarbonate (often marked with a number 7 or the letters PC) and phthalates (marked with a number 3 or PVC).

Your Shoes Could Be Toxic

Sporting the trendiest plastic shoes this season? They may put you at risk for long-term health problems, according to a study titled "Chemicals Up Close" by the Swedish Society for Nature Conservation (SNCC). They found plastic-based flip-flops and sandals have "disturbing concentrations" of harmful chemicals including phthalates. Even if you aren't worried about the chemicals leeching into your skin, there's also the environmental impact of disposing of these shoes when style trends change again.

We've All Been Exposed

In the *Fourth National Report on Human Exposure to Environmental Chemicals (Fourth Report)*, CDC scientists measured BPA in the urine of 2,517 participants and found BPA in the urine of nearly all of the people tested. This indicates how widespread exposure to BPA is in the U.S. population. According to the CDC, "Finding a measurable amount of BPA in the urine does not imply that the levels of BPA cause an adverse health effect." Of course, more testing needs to be done to explore that theory.

What Recycling Numbers Really Mean

What's with those numbers on the bottoms of plastic products anyways? According to a new report from The American Academy of Pediatrics, steer clear of plastics with the recycling numbers 3, 6, and 7. Those numbers directly correspond to the chemicals that disrupt the endocrine system (phthalates, styrene, and bisphenols).

Not All Plastic Is Recyclable

Did you know that plastic bags, straws, and coffee cups aren't even recyclable? For instance, *National Geographic* cites the problem with recycling a coffee cup: While the outside of a coffee cup is made of paper, there's a thin layer of plastic inside (to protect you from getting burned and to insulate the cup from cooling too quickly). Those two different materials would need to either be separated by hand or with a special machine, and that practice is too time-consuming and expensive.

Plastic Water Bottles Aren't Being Recycled

Water bottles are made of completely recyclable polyethylene terephthalate (PET) plastic, which means they are 100 percent recyclable. However, of the approximately 50 billion plastic water bottles Americans used in 2006, we recycled just 23 percent; essentially, we toss 38 billion water bottles a year into landfills. Current statistics show that 1 million plastic bottles are bought around the world every minute and that number is expected to rise another 20 percent by 2021. So ditch single-use plastic bottles and invest in a reusable bottle that is made entirely from stainless steel.

You're Eating Plastic Dust at Every Meal

No matter how clean you think your house is, a Heriot-Watt University study reveals that you could be swallowing more than 100 tiny plastic particles with every meal. So where is it coming from? The soft furnishings and synthetic fabrics all around your house, which mix with dust and then fall on your dinner plate. The scientists concluded that the average person swallows up to 68,415 potentially dangerous plastic fibers a year simply through eating.

Plastic Is Here Forever

The world has produced 8.3 billion metric tons of plastic, according to a study in the journal *Science Advances*. Shockingly, 6.3 billion metric tons of that has become waste, the majority of which is now accumulating in landfills and littering the ground, oceans, and air. If trends continue as they are now, there will be 12 billion metric tons of plastic in landfills by 2050.

Biodegradable Plastic Doesn't Actually Break Down

A study from Michigan State University shows that special additives that claim to break down polyethylene (plastic bags) and polyethylene terephthalate (soda bottles) don't work as planned when these products are left in common disposal situations, such as landfills or composting. "There was no difference between the plastics mixed with the additives we tested and the ones without," reported Rafael Auras, co-author and MSU packaging professor.

Straws Are a Serious Problem

Companies like Starbucks are taking steps—the company says it's banning plastic straws by 2020, citing environmental reasons. Still, says Wegner, straws are among top the 10 litter items collected at Great Lakes beach cleanups. In 2016, volunteers collected 1,594 pounds of litter—more than 90 percent of which was partially, or completely composed of plastic. But it's not just the Great Lakes that is suffering, as volunteers at International Coastal Cleanups have picked up more than half a million straws and stirrers. Can't bear to part with your sipping device? Switch to a stainless steel variety you can use over and over again

Plastic Emits Methane

A study published in PLOS One found that some of the most common plastics release the greenhouse gasses methane (the primary component of natural gas) and ethylene (a hydrocarbon gas) when exposed to sunlight. Researchers noted concerns over the scale of plastic production and waste, as these could contribute to greenhouse gas emissions over time—and these can impact climate change.

PLASTICS—THE BAD, THE UGLY…. continued

Beauty Products Count, Too

There are more single-use plastic products to consider in your daily life beyond straws, water bottles, and grocery bags. For instance, more than 80 billion plastic bottles are being disposed of around the world every year just from shampoo and conditioner alone. This is why environmentally conscious packaging is an important and growing trend. Companies dedicated to sustainable beauty practices, like Ethique (the French word for 'ethical'), have prevented the manufacture and disposal of more than 350,000 plastic containers worldwide. They're the world's first completely zero -plastic, zero-waste beauty brand; their concentrated face, hair, and body products last two-to-five times longer than their traditional bottled counterparts, and dissolve completely—even the sleeves they arrive in are 100 percent dissolvable and compostable, meaning zero consumer waste.

PLASTICS—THE GOOD….

Plastic Bags Banned

Because 2 million single-use plastic bags are distributed per minute around the world, many U.S. cities and countries worldwide are banning and/or taxing their use. Washington, DC, was one of the first cities to implement a tax on the bags and uses the revenue collected for the Anacostia River Clean Up and Protection Fund. San Francisco has completely banned them and reports a 72 percent reduction in plastic bag pollution. In 2017, Kenya implemented a countrywide ban, while Australia did so in 2011. China has banned them too. So jump on the bandwagon and switch up your routine with washable and durable reusable grocery bags.

This post is brought to you by Reader's Digest editors

Carlsberg Beer 6-Packs

In a "world-first", beer company Carlsberg has replaced their 6-pack plastic rings for glue.

After testing out 4,000 different adhesives, the brewer has settled for a glue that is strong enough to hold their beers together for shelving and travel, but relaxed enough for the consumer to break apart when it's finally time to crack open a cold one. The new design is projected to reduce the Danish company's plastic usage by 75%, which is roughly 1,300 tons, or the equivalent of 60 million plastic bags. Inventor Christopher Stuhlmann says he got the idea after he paid a visit to his local hardware store.

"The starting point was going to a hardware shop and buying all the adhesive I could get, all the glue that was there," says Stuhlmann. "Over the weekend I just glued things together and made a short video for my chief executive and so the idea was born," he added. The United Kingdom will be the first kingdom to test the glue packaging, as they consume roughly one third of the beer company's product.

MORE: New Edible Rings on 6-Packs Can Feed Animals Instead of Harming Them.
This is not the first time that brewers have tried to move past the plastic ring packaging; in 2016, a craft beer maker in Florida created an edible, biodegradable 6-pack ring made out of wheat and barley waste leftovers, but the costs of production were too high to make the design very accessible. However, the brewer hopes that if more beer companies adopt the design, then it will bring down the costs of manufacturing.

Arizona Company to Make 27 Million Paper Straws Per Day

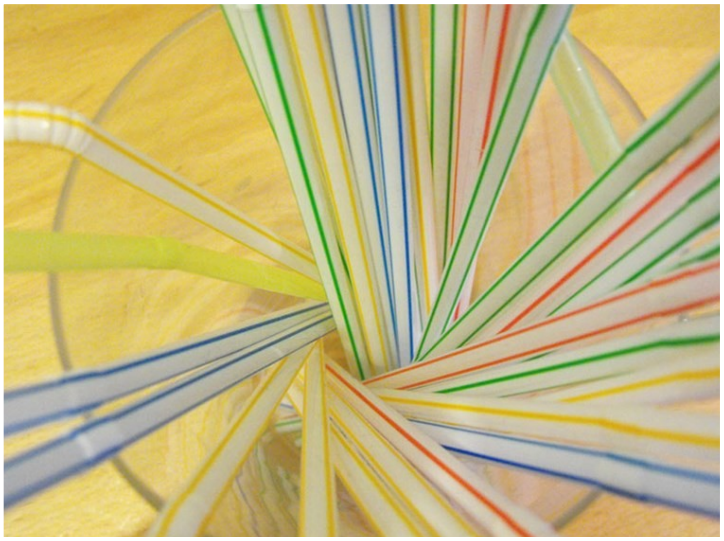
Sept 14, 2018

Troy Swope, founder and CEO of **Footprint**, says he trusts that Arizona has the innovation and talent to turn paper straw critics into believers. "We're going to apply that talent to solve the straw problem, make the performance better." Currently, 500 million plastic straws are used every day in the United States. Plastic straws will never biodegrade but Swope says his paper straws will biodegrade within 80 to 90 days. **Footprint** also develops and manufactures other proprietary and patented technologies that enable their customers to eliminate plastic… Such as paper bowls, trays, cups and plates.

Want A Straw At A Restaurant? Or A Soda With Your Kids Meal? New California Laws Make You Ask For Them

Ben Adler / Thursday, September 20, 2018 | Sacramento, CA

If you want to sip through a single-use plastic straw at a dine-in restaurant in California, you'll soon have to specifically ask for it. That's because of a bill signed Thursday by Gov. Jerry Brown. Brown's signing statement was part history lesson, part environmental lecture. "Plastic was first invented in the late 19th century," he begins. "Plastic has helped advance innovation in our society, but our infatuation with single-use convenience has led to disastrous consequences."



The governor continues: "Plastics, in all forms — straws, bottles, packaging, bags, et cetera — are choking our planet. It is a very small step to make a customer who wants a plastic straw ask for it. And it might make them pause and think again about an alternative." The bill, AB 1884 by Asm. Ian Calderon (D-Whittier), passed the Legislature largely along party lines. Opponents argued that straws only account for the tiniest of fractions of plastic waste. And the law does not apply to fast food restaurants. In fact, a legislative staff analysis suggests it will have little actual impact on reducing plastic waste.

The law takes effect in January. Brown also signed SB 1192 by Sen. Bill Monning (D-Carmel), which prohibits California restaurants that sell kids meals from offering soda or juice as the default drink option. Starting in January, the default drink must either be water, sparkling water, flavored water with no added sweeteners, unflavored milk, or a non-dairy milk alternative. Customers will still be allowed to request soda or juice at no additional cost.

Nippon Paper Develops Paper Straws Just as Strong as Plastic Ones

Japanese papermakers seek to profit from growing boycott

Shin Watanabe, Nikkei staff writer September 20, 2018 06:49 JST

TOKYO -- Japan's Nippon Paper Industries is looking to commercialize biodegradable drinking straws as durable as plastic ones by the end of this year, amid a growing global shift away from single-use plastics.

Conventional paper straws have a tendency to go soggy after prolonged use, and the smell of paper can affect taste. But Nippon Paper recently developed a prototype that overcomes these weaknesses and is just as functional as plastic ones, putting it a step ahead of international food packaging companies like Tetra Pak. Other Japanese papermakers are also capitalizing on the trend away from plastic. Oji Holdings has developed a paper-based alternative to cling wrap, like what is used in households, using a special coating that prevents moisture and air from seeping in. Oji will launch the paper wrapper next year, marketing it mainly to food producers. It hopes to close the price gap between the product and plastic wrap through mass production. The company will also soon start selling paper lids for disposable cups.

Roughly 400 million tons of plastic are produced worldwide a year, a third of it for packaging purposes, according to the United Nations and other sources. But the danger plastic waste poses to oceanic life has sparked a movement to

cut back on disposable products. France will start banning single-use plastic tableware in 2020, and the U.K. plans to outlaw plastic straws and drink stirrers, as well as plastic-stemmed cotton swabs. Corporations are stepping up to the challenge as well. Starbucks says none of its shops worldwide will offer plastic straws by 2020, while McDonald's is switching to paper straws in the U.K. and Ireland.

Lego's Sweet Sustainability Plan: Plastic Made From Sugar Cane

The beloved maker of plastic toy blocks wants to inspire a new wave of manufacturers to take a more creative approach to sustainable manufacturing.

John Hitch, ***TECHNOLOGY AND IIOT*** *| Sep 06, 2018*

As the seas fill up with unwanted plastic and the world's reserves of oil—a raw material used in plastics production—go empty, Lego is trying to do what it has asked children to do for six decades: create something new out of a few building blocks and a lot of imagination. Earlier this year the Danish toy company began production on a new line of sustainable Lego accessories made from plant-based polyethylene (common plastic), derived from sugarcane ethanol, as opposed to the polyethylene from oil. Naturally, these green "bioplastic" pieces, released last month, are botanically themed, including bushes, leaves and shrubbery.

It was a big step toward completing the Lego Group's ultimate blue print of routinely manufacturing its brightly colored eponymous blocks by 2030 using sustainable materials, part of an effort to reach zero operational waste. That plan was announced in 2012 and in 2015, the company pledged 1 billion kr., or more than $155 million, to make it happen. One hundred Lego employees were also sought out to work in the Lego Sustainable Materials Centre.

It's a noble pursuit, and unsurprising considering Denmark's eco-friendly landscape rife with windmills and bike paths. It also makes business sense, as the European Union levies carbon taxes to decrease greenhouse gases 40% by 2030 compared to 1990 levels. But symbolically, Lego feels it could have the greatest impact. As children, what engineer or architect didn't have heaps of Lego blocks sprawled on their bedroom floor, spending countless hours snapping together fantastical houses and vehicles for their yellow-headed citizenry? Research indicates that this "free-building" mentality cultivated in these malleable minds can reap positive results in abstract and original thought. (It's also not-so-coincidentally the premise of *The Lego Movie*.) Now if those pieces were made from replenishable resources, it makes sense that more of these innovative thinkers would intuitively employ more sustainable strategies when they design new factories or skyscrapers or transit systems.

"Our mission is to inspire and develop the builders of tomorrow," explained Lego owner Kjeld Kirk Kristiansen at the time. "We believe that our main contribution to this is through the creative play experiences we provide to children. The investment announced is a testament to our continued ambition to leave a positive impact on the planet, which future generations will inherit." That's the premise, an elegant solution to create a perfectly engineered utopia. Anyone who's played with Lego blocks knows that expectations and execution are often mutually exclusive.

The first hurdle is that plastics made from polyethylene comprise only 1% to 2% of the total plastic elements, totaling about 75 billion pieces made annually. Lego has to find a way to convert its other blocks, 80% of which is petroleum-based ABS. That type of plastic provides the toughness, color fastness and ability to interlock that the more flexible bioplastics do not as of yet. (The latter is probably more desirable to accidentally step on in the middle of the night, though.) "I'm not even sure that we currently yet can live up to the quality that we want," Lego CEO Niels B.

Christiansen told Bloomberg recently. "But it's an agenda that we want to drive and an agenda that our owner is behind. We want to become a leader on this."

The other issue is that while bioplastics appear to be easier on the environment, sugarcane requires land, water and labor. In Brazil, which is the largest sugarcane-ethanol producer (8 billion gallons in 2015/16), soil erosion and poor working conditions are major drawbacks. On the plus side, a recent study found sugarcane plantations didn't directly lead to deforestation and recent innovations have reduced its water footprint. Lego sources its bioplastic strictly from responsibly sourced sugarcane. Future Bionicles aren't expected to be biodegradable, though. They will still need to be recycled like any other plastic so they don't end up in a sea lion's stomach or turtle's nose.

A 4,100-piece roller coaster set costs $380. "We have high quality products that offer a building experience as well as a playing experience and can be used for many, many years," Christiansen says. "Our prices are based on that rather than on whether the product is made from one thing or another."

Even if Lego did make every piece out of bioplastics starting today, that wouldn't have an immediate impact on the environment. But if you're trying to save a 4 billion-year-old rock, you can afford to play a bit of the long game. The next generation of CEOs, material scientists, agricultural engineers who may have grown up with a few sustainable bioplastics will be able to build off that, and maybe develop better ways to grow sugarcane, or blue-green algae, or something else we haven't discovered yet. Lego has already laid down the first bricks. It's up to the rest of manufacturing to add their own creative take.

About sustainability at the LEGO Group

- The LEGO Group partners with the World Wildlife Fund for Nature (WWF), as part of efforts to reduce CO2 emissions in manufacturing and supply chain operations, and promote global action on climate change.
- Through investments in wind power, the energy used to make LEGO bricks is balanced by the production of renewable energy.
- The LEGO Group targeted 2030 to reach zero waste in operations, and introduced sustainable paper pulp trays for the LEGO advent calendar, reducing plastic waste from going to landfill.

The Most Ambitious Ocean Cleanup Plan Ever Is Officially Underway

September 11, 2018 — 9:28 AM

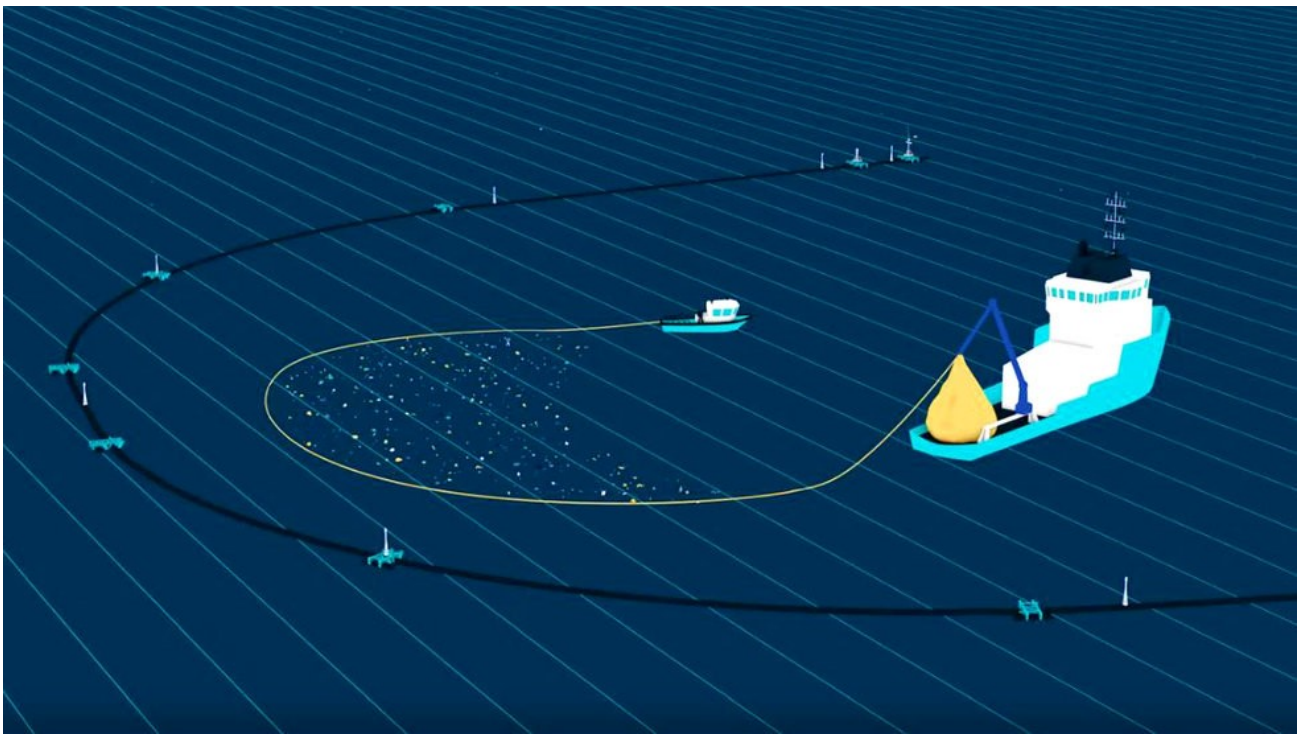
On Saturday, a boat set out from the coast of San Francisco to a crowd of eager onlookers. A voyage five years in the making, it signals the start of an ambitious plan to remove 90 percent of the plastic debris polluting our waterways. Engineers have set to sea to deploy a rubbish-collection device to corral plastic litter floating between California and Hawaii in an attempt to clean up the world's largest rubbish patch in the heart of the Pacific Ocean. The 600-metre-long floating boom was being towed from San Francisco to the Great Pacific Garbage Patch — an island of rubbish almost the size of Queensland.

The system was created by The Ocean Cleanup, an organization founded by Boyan Slat, a 24-year-old innovator from the Netherlands. Mr. Slat first became passionate about cleaning up the oceans when he went scuba diving aged 16 in the Mediterranean Sea, and saw more plastic bags than fish. "The plastic is really persistent. It doesn't go away by itself and the time to act is now," Mr. Slat said. He said researchers working with his organization had found plastic going back to the 1960s and 1970s bobbing in the patch.

Key points:

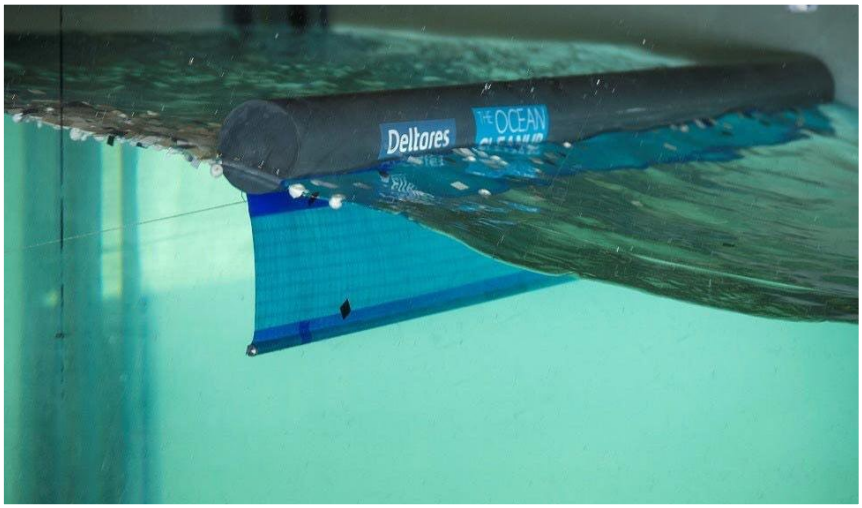
- System created by The Ocean Cleanup, organization founded by 24-year-old Dutch innovator Boyan Slat
- 600-metre long device has a 3-metre deep screen that traps and collects plastic, allowing marine life to swim beneath it. The buoyant, U-shaped barrier made of plastic with a tapered 3-metre deep screen is designed to act like a coastline, trapping some of the 1.8 trillion pieces of plastic estimated to be floating in the garbage patch, but allowing marine life to swim safely beneath it.
- Support vessel will fish out collected plastic every few months and transport it to dry land for recycling.
- Fitted with solar power lights, cameras, sensors and satellite antennas, the cleanup system will communicate its position at all times, allowing a support vessel to fish out the collected plastic every few months and transport it to dry land where it will be recycled, Mr. Slat said.
- Shipping containers filled with fishing nets, plastic bottles, laundry baskets and other plastic refuse scooped up by the system are expected to be back on land within a year, he said.

Plans to scale up to 'fleet' of barriers if technology works. Mr. Slat said he and his team would pay close attention to whether the system worked efficiently and withstood harsh ocean conditions, including huge waves. He said he was most looking forward to a ship loaded with plastic coming back to port. "We still have to prove the technology … which will then allow us to scale up a fleet of systems," he said.



PLASTICS—THE GOOD.... continued

The Ocean Cleanup, which has raised $US35 million in donations to fund the project, including from Salesforce.com chief executive Marc Benioff and PayPal co-founder Peter Thiel, will deploy 60 free-floating barriers in the Pacific Ocean by 2020.



The free-floating barriers are made to withstand harsh weather conditions and constant wear and tear. They will stay in the water for two decades and in that time will collect 90 per cent of the garbage in the patch, he added. Chief scientist at environmental advocacy group Ocean Conservancy, George Leonard, said he was skeptical. Mr. Slat could achieve the goal because even if plastic rubbish could be taken out of the ocean, a lot more poured in each year. "We at the Ocean Conservancy are highly skeptical but we hope it works," he said. "The ocean needs all the help it can get."

Approach should include prevention, education: scientist

Mr. Leonard said 8 million tons of plastic waste entered the ocean annually and that a solution must include a multi-pronged approach, including stopping plastic from reaching the ocean and more education so people would reduce consumption of single-use plastic containers and bottles. "If you don't stop plastics from flowing into the ocean, it will be a Sisyphean task," Mr. Leonard said. He added that on September 15 about 1 million volunteers around the world will collect litter from beaches and waterways as part of the Ocean Conservancy's annual International Coastal Cleanup. Volunteers last year collected about 10,000 tons of plastics worldwide over two hours, he said. Mr. Leonard also raised concerns marine and wildlife could become tangled. He said he hoped Mr. Slat's group was transparent with its data and shared information with the public about what happens with the first deployment.

"He has set a very large and lofty goal and we certainly hope it works, but we really are not going to know until it is deployed," Mr. Leonard said. "We have to wait and see." The system will act as a "big boat that stands still in the water" and will have a screen and not a net so that there is nothing for marine life to get entangled with. As an extra precautionary measure, a boat carrying experienced marine biologists will be deployed to make sure the device is not harming wildlife, Mr. Slat said. "I'm the first to acknowledge this has never been done before and that it is important to collect plastic on land and close the taps on plastic entering into the ocean," he said. "But I also think humanity can do more than one thing at a time to tackle this problem. ”While exciting, this innovation won't single-handedly solve our trash problem. Cleaning our oceans is one thing, but keeping them clean will require all of us to produce less plastic waste in the first place. You can start by recycling properly, upcycling old goods, and avoiding unnecessary plastics whenever you can.

UPDATE September 19, 2018: Following the successful launch from the San Francisco Bay, System 001 traveled 350 nautical miles to commence the Pacific Trials. The trials will last approximately two weeks and are a crucial step before we take System 001 the remaining approximate 800 nautical miles to the Great Pacific Garbage Patch. Consider it a final dress rehearsal before the main performance - cleaning plastic from the ocean.

First Results: The installation went very smoothly, and the system seems to be behaving well so far. Configuring the system in its u-shape is the first item from our checklist that we have accomplished, and it directly matches the predicted curvature from engineering models.

Next Steps: We will maintain the u-shape for two weeks. During this time, the system will continue to undergo various additional tests. The crew has already begun testing the system's orientation in different wind directions and aims to complete these tests tomorrow. With one down and four to go, our goal is to achieve all five of these objectives in the next two weeks. We still have much to learn, so we are taking this time to understand as much as possible. If all items can be checked off, only then can we give the go-ahead to begin the journey to the Great Pacific Garbage Patch.

For more information about THE OCEAN CLEANUP go to https://www.theoceancleanup.com/

A Once Captive Dolphin Introduces Her Friends to New Behavior

ED YONG *September 5, 2018*

"What we had here was an example of dolphin culture being established."

In 1995, a bottlenose dolphin named Billie leaped from the water of Port River, Australia, and began "tail-walking" in circles around Mike Bossley's boat. Her tail was pumping vigorously, her snout was pointed to the sky, and her body was in the air and moving backward. "It was spectacular," recalls Bossley, a naturalist and conservationist. "But I didn't appreciate the significance of it until she started doing it again and again."

Billie the dolphin tail-walks in front of a ship.
MIKE BOSSLEY

Up until that point, a wild bottlenose dolphin had never been seen tail-walking, and for good reason: It's a trick that's taught to dolphins in captivity. Bossley soon realized that Billie had not only learned the trick during a brief stint in dolphin rehab, but that she had then passed it on to her wild peers. "What we had here was an example of dolphin culture being established," he says. "I got very excited and focused on documenting it."

Billie had first come to national attention years earlier. In 1987, a racehorse trainer regularly took his horses for a swim in Port River, towing them behind his small boat. The trainer noticed that every morning, a young dolphin would swim alongside them. He named the dolphin Billy—a spelling that would later need to be tweaked when Bossley realized that she was actually female**.** By the time Billie died in 2009, a number of neighboring dolphins could be seen tail-walking. How and why tail-walking spread is a mystery, but it is evidence of the incredible social relationships of which dolphins are capable.

Note from Peach: Years ago a tail-walking dolphin was sighted in Sarasota Bay after it dolphin was released there after being in rehab at SeaWorld. Other dolphins in the area mimicked the behavior as well.

US Navy Adjusts Policies To Watch Out For Right Whales

By WES WOLFE wwolfe@thebrunswicknews.com *September 19, 2018*

This group of right whales was spotted socializing 30 miles east of Jekyll Island on Feb. 15. Scientists say no new right whales were observed being born last season.
Provided photo/Sea to Shore Alliance

The Navy released a quite lengthy and thorough report on continuing and new environmental impact policies, with one of the new policies being that it will expand the area in which naval units obtain right whale sighting information to cover the entire Jacksonville operating area, which covers most of the Georgia coast. According to the report, "Four right whale sightings were documented during monthly aerial surveys approximately 50 miles offshore of Jacksonville, Fla., from 2009 to May 2016, including a female that was observed

giving birth in 2010. These sightings occurred well outside existing (Endangered Species Act)-designated critical habitat for the right whale.

"However, sighting data alone may not accurately represent North Atlantic right whale distribution. Beginning in April 2009 through May 2015, marine autonomous recording units have been deployed between 60 and 150 km offshore from Jacksonville. While sightings have generally occurred within continental shelf waters offshore from northeastern Florida and southeastern Georgia, recordings of North Atlantic right whales were detected in deeper waters during these monitoring efforts, suggesting that distribution of this species extends further offshore than sighting data previously indicated."

Right whales calve in the waters off Southeast Georgia and Northeast Florida, and concern over protecting those calving areas is particularly high considering the few number of right whales left in existence, and the length of time between female right whales' pregnancies. Last year marked the first observed calving season in which zero calves were spotted, and it followed the three-calf season in 2017, which before 2018 was the second-lowest calving year recorded. There's been a general slow-down of calving since 2011. Added to that, the NMFS declared "an unusual mortality event" starting in June 2017 that carried into this year, claiming 18 right whales.

The Navy report — called its Atlantic Fleet Training and Testing Final Environmental Impact Statement/ Overseas Environmental Impact Statement — cites a study that looked at seven of the whales, in which four whales likely died from vessel collision, two from snow crab fishing gear entanglements and one from an unknown cause. Necropsies on four more whales were still pending as of July.

Clay George, senior wildlife biologist with the state Department of Natural Resources' Wildlife Resources Division, said Tuesday that DNR commented on the Navy's AFTT proposal in 2015 and on the draft in 2017. "Several activities have the potential to injure or kill right whales, including high speed vessel maneuvers, detonation of explosives and use of explosive and non-explosive ordnance," George said. "Other activities, such as active sonar, could harass whales and interfere with their ability to communicate with one another. "The Navy has proposed to mitigate these potential impacts by establishing a seasonal mitigation area where these activities would be limited or prohibited from Dec. 1 to March 31 each year. We agree with this approach. However, the proposed mitigation area is too small, so we requested that the Navy expand the mitigation area to encompass the area typically used by right whales."

The Navy's suggested mitigation area extends up the Georgia coast to around Hilton Head, and keeping within 15 nautical miles of the Georgia coast and 5-15 nautical miles of the Florida coast. In 2017, WRD suggested a mitigation area extending north into South Carolina, 30-35 nautical miles out and for Northeast Florida, 15-30 nautical miles from shore, covering much of what's designated as the right whales' "biologically important area."

The Navy AFTT report can be found at public.navy.mil/usff/environmental/Pages/aftt.aspx.

Dolphin Scars Reveal When and Where Sharks Attack

Being a dolphin might seem like a fun life – lots of frolicking in the ocean and not so much with the office work. However, the oceans also contain sharks, and a study of dolphins off Western Australia has shown just how threatening these apex predators can be, as well as where the dangers are greatest.

Dr Kate Sprogis of Murdoch University's Cetacean Research Unit observed 343 dolphins for signs of shark attack and found one in six bear the scars. In the Journal of Experimental and Marine Biology and EcologySprogis reports dolphins were in more danger in sheltered waters, and when temperatures rise.

Off Bunbury, southwest Australia, in locations like Koombana Bay and Leschenault Estuary a quarter of the dolphins bore bite wounds, but this was just 13 percent in coastal waters. The bites ranged from relatively shallow, to some so extreme it is amazing the victim survived.

< Even after some healing bite marks can reveal the brutal nature of attacks. Kate Sprogis

“This could be due to the fact that the water is more shallow in these sheltered waters, with less space and fewer escape routes, meaning altercations between sharks and dolphins are more likely,” Dr Sprogis said in a statement. “It could also be because the acoustic detection of predators may be more difficult with more underwater noise from boats and ships in these areas – or because the murkier waters make it more difficult for the dolphins to see easily.”

Sprogis told IFLScience no one knows how often attacks are fatal, particularly on dolphin calves. She added we also know little about how dolphins escape once sharks have bitten them – fast swimming and leaping out of the water can be useful evasion tactics, but probably aren't much use when a shark already has you by the flipper. Perhaps if we knew how dolphins respond to shark attacks, we could adopt some of their approaches

The study was conducted from 2007 to 2013, and attacks increased after 2011, which Sprogis attributes to the warmer conditions at the time. Ocean conditions off Western Australia are very dependent on the Leeuwin current, the longest current in the world. During La Niña years, the Leeuwin strengthens, bringing warmer waters from Indonesia, and perhaps tiger sharks come with it, which may up the attack rate on dolphins.

Surfers delight in sharing the waves with dolphins, and many believe dolphins and sharks don't co-exist, so dolphins' presence means a beach is safe. However, these bites on the dolphins do show they are also prey, so the waters in which they live are unlikely to be safe havens.

Shark attacks can leave horrifying scars on dolphins, and the risk rises in warm and shallow waters. Kate Sprogis

Please **LIKE** us on **FACEBOOK** and share the posted events and news on TDP's Facebook page. It's an easy way to get the word out to the public about The Dolphin Project. Thank you!

TDP Calendar

2018

October 6, Saturday:	DNR Coastfest, Brunswick
October 13, Saturday:	**TDP SURVEY**
	SkIO Science Day, Skidaway
October 19, Friday:	Great Ogeechee Seafood Festival, Richmond Hill
October 20, Saturday:	Great Ogeechee Seafood Festival, Richmond Hill
	Don't Blast, Don't Drill concert, Tybee
October 21, Sunday:	Great Ogeechee Seafood Festival, Richmond Hill
October 28, Sunday:	*Dolphin Program & Training, Richmond Hill*
November 3, Saturday:	**TDP SURVEY**
November 9, Friday:	Coastal Ecology Symposium, CCGA, Brunswick
November 18, Sunday:	*Dolphin Program & Training, Richmond Hill*
November 30, Friday:	Decorate float for Christmas Parade – Richmond Hill
December 1, Saturday:	Richmond Hill Christmas Parade. Theme: Christmas Characters

2019

January 26, Saturday:	Jim Wann evening concert, benefit for TDP, Tybee
January 27, Sunday:	Jim Wann matinee concert, benefit for TDP, Tybee
	More dates TBA

TDP Volunteers

The Dolphin Project owes its success for the past 30 years to its volunteers. YOU make us awesome. Our research, conservation, and education programs as well as administrative duties are all achieved through dedicated volunteers. We deeply appreciate all of our wonderful 'dolphin people'. We have a few committees that need some help.

Our Membership Chairpersons are retiring. The task requires entering and updating members into an Access database in the 'cloud' on a TDP laptop. Interested?

Our Teck Guru, Mike Gould, is designing a TDP database for us to hold our research data so we can do our own research studies. Can you do data entry? We could use your help.

Are you good at organizing events? Love parties? Join our Special Events Committee.

If you have a little time to share, contact Peach at thedolphinproject@gmail.com