

Trash Islands- Water Is Life

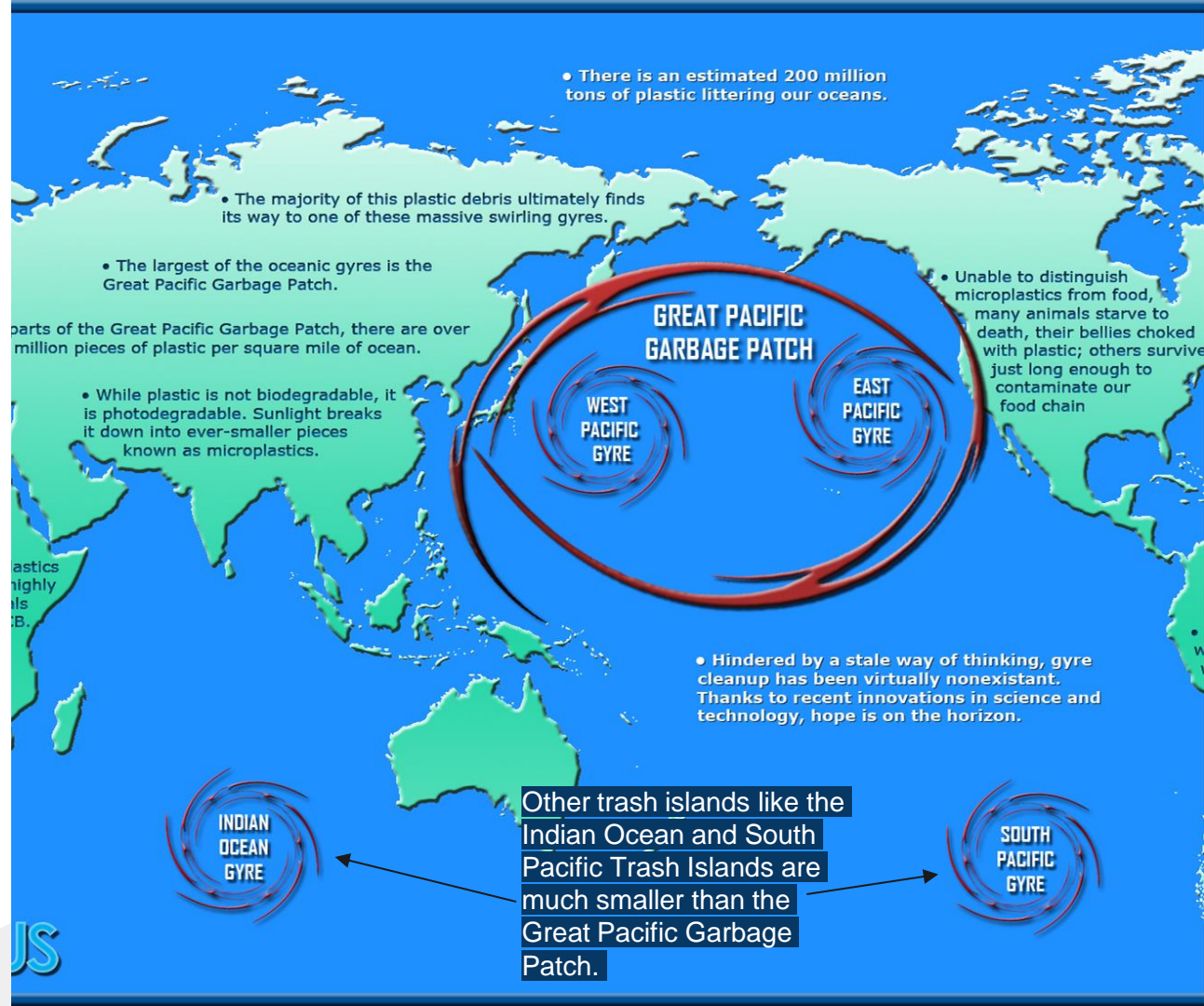
By Alex, Praneel, Shahan, and
JP



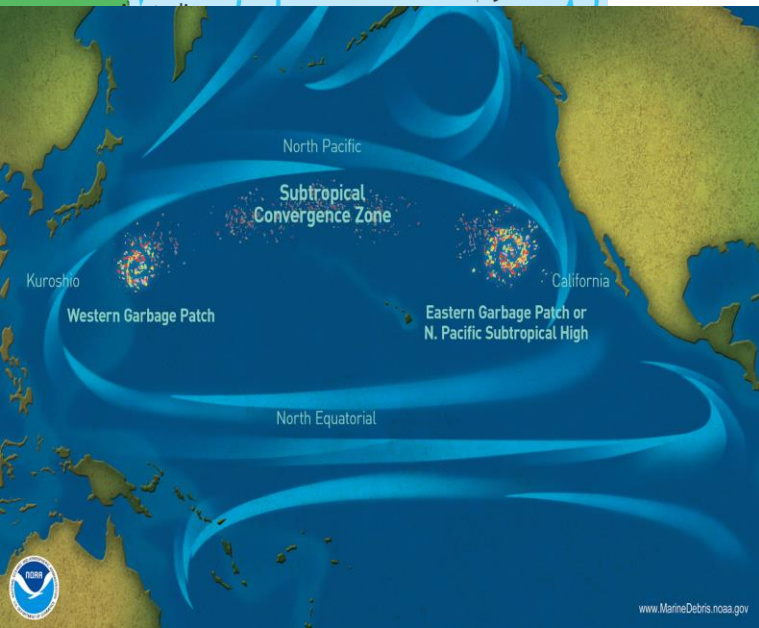
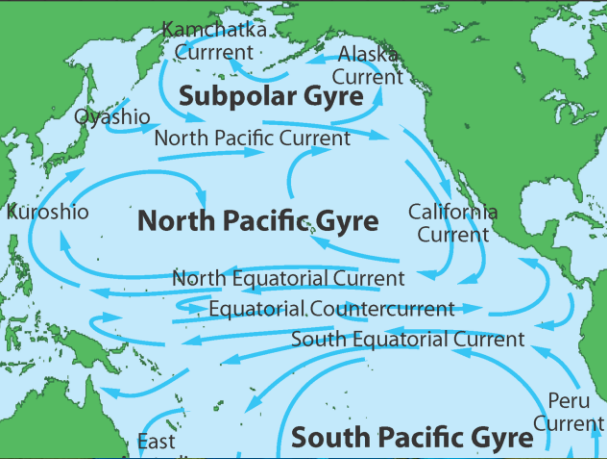
The Great Pacific Garbage Patch

Alex

The Great Pacific Garbage Patch is the largest trash island in the world.



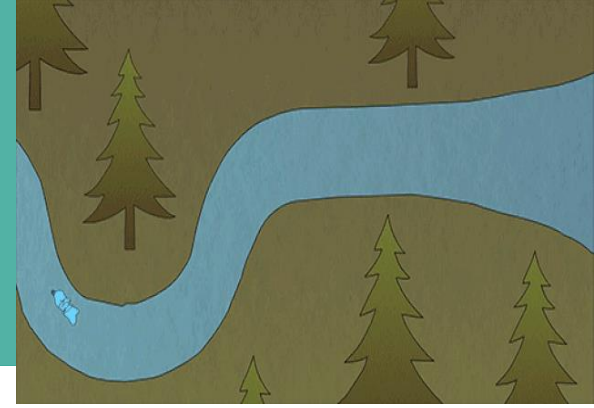
How the Great Pacific Garbage Patch works



The Great Pacific Garbage Patch is formed by the North Pacific Gyre. See more about how gyres work in J.P.'s slides (slide #25). The trash in the patch is mostly from China and countries in Southeast Asia. It circulates from four major currents: California, North Equatorial, Kuroshio, and North Pacific. The two major trash islands in the Great Pacific Garbage Patch, Eastern and Western Garbage Patches, meet at the Subtropical Convergence Zone, the area where the trash circulates around the gyre.



What the Great Pacific Garbage Patch is made of



The Great Pacific Garbage Patch is made 99% of plastic, 46% of which is discarded fishing gear. In mass, microplastics take up only 8% of the Great Pacific Garbage Patch. But in counts, they count for 94% of the pieces of plastic! This is because microplastics are pieces plastic that have been broken down into tiny bits. There are a huge amount of them in the water, but they take up almost no space at all. But a huge amount of plastics still exist. Even though 94% of them are tiny, there are about 250 pieces of trash in the trash island for each one of the 7.6 billion people on Earth! That's one trillion, nine hundred billion (1,900,000,000)!



What can we do?

Trash islands cause so many problems with animals and humans alike. So why is no one doing anything about it? The first major reason is that no one nation owns the area of the Great Pacific Garbage Patch, so no one nation can (or wants to, for that matter, since it would cost so much money to clean up) claim full responsibility for the cleanup of the Patch. The next obstacle is then to form some sort of team of nations (like the UN or NATO) to clean it up as a whole. The problem is that no one can agree whose fault it is and who should clean it up. The US, China, Japan, Russia, Indonesia, and Australia because they are the closest to the patch? China, Indonesia, Sri Lanka, Nigeria, Egypt, and Vietnam because they are the biggest contributors of trash? Or someone else? With the world's fragile state, no one can decide who to blame for so many problems humans are creating. And we need to step up and take responsibility for the world's problems.

There are many ways to save the seas. One way is to cut or reduce the main contributor to the Trash Islands - **plastic**. Reducing or cutting our use of plastic could destroy 30% or more of the garbage in the seas eventually. For a more immediate result, you could donate to an organization studying and removing trash in the seas. By helping the seas, you help the environment. This is one of the biggest problems of the world right now, and we all have to contribute and help if we want to truly save the seas.



Praneel- How Trash
Islands Affect Humans

How trash islands affect humans

By Praneel Kalpathy



Trash islands are floating patches of trash in the ocean, and humans cause them with our waste that washes out into sea. As much of this trash enters the sea, it starts to break down into smaller pieces. Take styrofoam in the ocean for example. When it breaks down, polystyrene components in it sink to the bottom of the ocean, and in doing so, pollute the water. This can get into our water supply, and animals could drink it. This is not good for the animals and us humans also eat these animals, and the toxins enter our bodies, poisoning us. Some animals might also eat this trash and we could eat those animals, getting poisoned by ourselves. One last example is when trash washes up on our beaches, forcing us to close them until cleanup is over. The plastic can really affect us, and one time, medical waste washed up and infected a lot of people. But many people seem to forget that we are doing this to ourselves.



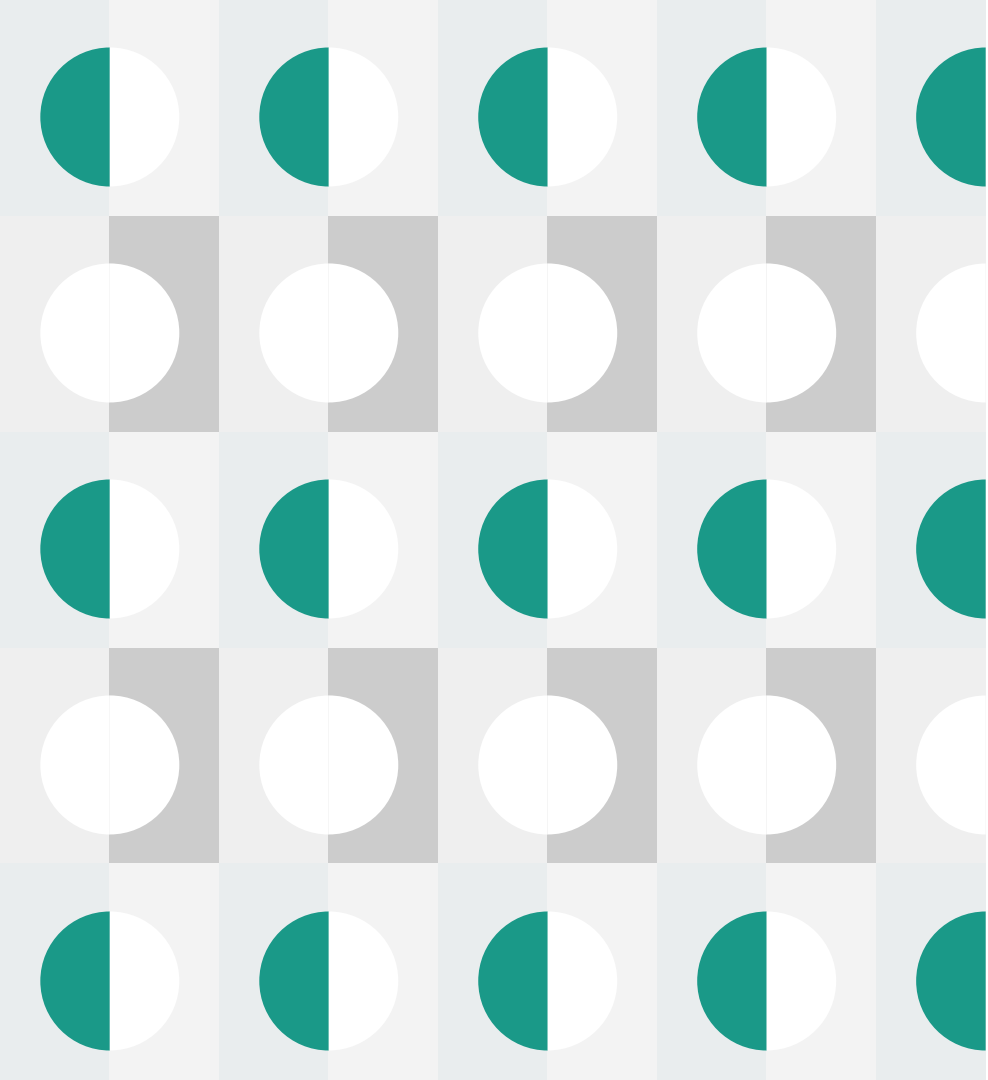
As said before, animals can eat our trash. Many turtles mistake plastic bags for jellyfish, and try to eat them. This could cause them to choke. If not, some other animal might eat it. Us humans are at the top of the food chain, so we could eat the animal which ate the turtle, and therefore eat the trash that the turtle ate, indirectly. This could poison us, and could give fatal food poisoning, which can kill. Also, when plastic washes on shore, and is left out in the blazing sun, it can fill the air with cancer-causing fumes, since heated plastic and its smoke/fumes are carcinogenic. This can cause humans to get cancer which can also be fatal. Also, discarded fishing nets are common in the water as trash. These can entangle themselves in propeller of boats. Also, Medical Waste sometimes washes on a beach. Many people stepped on the syringes, which hurt them and might have even infected them. Many beaches in New Jersey and New York have closed because of these disasters known as syringe tides.

The discarded fishing nets can pose a great danger to boats, as they can tangle in the propellers or oars. They can also tangle around scuba divers. The majority of divers can untangle themselves, but get injured in the process., but some of them suffer death. These nets are called ghost nets, since most of the time, they blend into the water



Ghost net





**How Trash
Islands can
affect
animals-
Shahan**

Introduction

Over the years, many animals have been affected by the trash in the ocean. The trash can affect the animals by confusing the animals, and make them eat and pick up plastic, by trapping animals in a net, and by cutting their wounds. The trash is causing animals to die, mainly from the plastic objects and from getting cut by trash or by getting stuck in the trash. Some animals mistake plastic for food. When the animals eat the plastic their organs can get ruptured. An example of how animals mistake plastic for food is, plastic smells like krill (a small fish that is found in the ocean, and a fish that is eaten by some animals) so animals eat the plastic. Animals also get affected by ghost gear (fishing supplies that were thrown into the ocean). Some animals are lucky and others are not, the unlucky ones suffer from starvation, cut wounds, and infections. People can prevent all these events from happening by not throwing trash in the ocean, and by picking up after themselves when near an ocean.



This is a picture of a sea animal eating plastic

This is a picture of a sea animal getting stuck in trash



Ghost Gear

The two pictures on the right are pictures of sea animals getting stuck in ghost gear. Ghost gear is leftover fishing gear that people throw in the ocean. Some examples of ghost gear are nets, fishing rods, hooks, and lines. Ghost gear does not only kill animals it can also pollute the ocean, which will then hurt animals. Over 649,000 tons of fishing gear is thrown into the ocean annually, and over 136,000 sea animals die from it. About 71 percent of the incidents with sea animals and ghost gear involved the sea animals getting tangled in fishing nets. Some sea animals are able to get out of the net and others are not. For example, imagine if you were stuck under a huge plastic bag and you couldn't get out, you would feel trapped and stuck. That is how animals that are not lucky enough to get untangled from a net, feel.



How plastic affects animals

Plastic can severely hurt and or kill animals, it can cut their wounds, the plastic can infect the animals, and it can rupture animals' organs. At the moment, there are over two billion, eight hundred sixty-six million, five hundred thousand (2,866,500,000) pounds of plastic in the ocean! All the plastic in the ocean, then causes thousands of animals to die every year. It takes about 450 years for plastic to break down, so imagine how animals have to deal with all the plastic in the ocean. Sadly, Fish ingest up to 24,000 tons of plastic every year, and sea turtles mistake plastic for food. Research shows that a majority of the sea turtles in the world have already ingested plastic. When plastic lies in the ocean, it absorbs highly toxic chemicals, like bisphenol. So when the animals eat the plastic, toxins will be released into their body. The toxins can hurt and kill the animals. In conclusion, plastic is very deadly to animals and plastic will most likely always affect animals.



This is a picture of an animal eating plastic



This is a picture of an animal eating plastic

How people can help animals not die, or get hurt from trash islands

So many animals die from trash in the ocean every year, we can help prevent an animal from dying by not throwing plastic in the ocean, and by not throwing ghost gear in the ocean. Another way we can prevent animal fatalities is by making sure that there are no more garbage patches in the ocean. An agency that has been trying to do some of what I listed is the Clean Water Act. They have heavily lessened the amount of plastic that goes into the ocean. Some of the ways you can help are, by not littering when you're near an ocean, by picking up any garbage you see near an ocean, and if you can, help animals get untangled from a net. Overall, if you do your part in helping these animals, there would be no more injuries or deaths for animals because of trash in the ocean.



This is a picture of a person helping an animal get out of a net



This is a picture of an animal, who is stuck in a net, getting helped by a person

Causes of Trash Islands- JP



Trash Islands

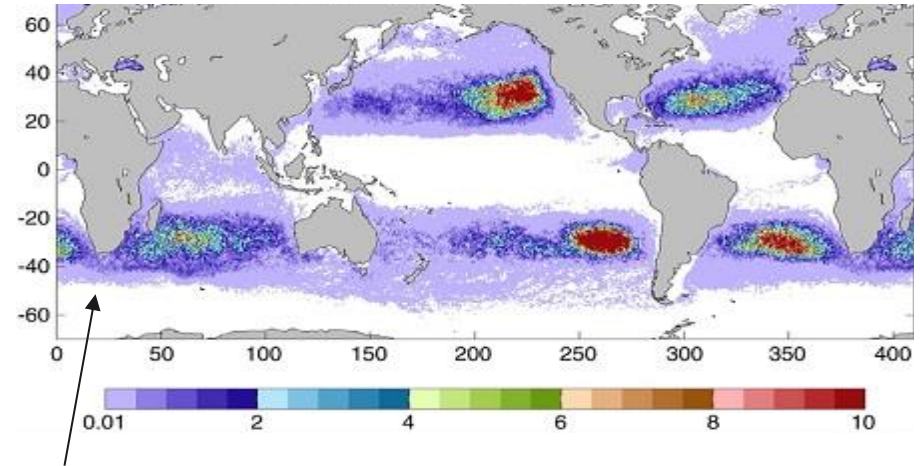
I am sure you have heard about large islands of trash in the middle of the oceans. Have you ever thought about how they were created and how all the garbage comes together and created an island of garbage?



Where does all of the trash come from?



A large reason for all of the trash in the ocean is caused by fisherman leaving or dumping their supplies into the ocean and careless people dropping trash near oceans which eventually gets collected by an island of garbage. It takes about 10 years for garbage to travel across the ocean and to be collected by garbage islands because of a Gyre. See what a Gyre is on next slide.



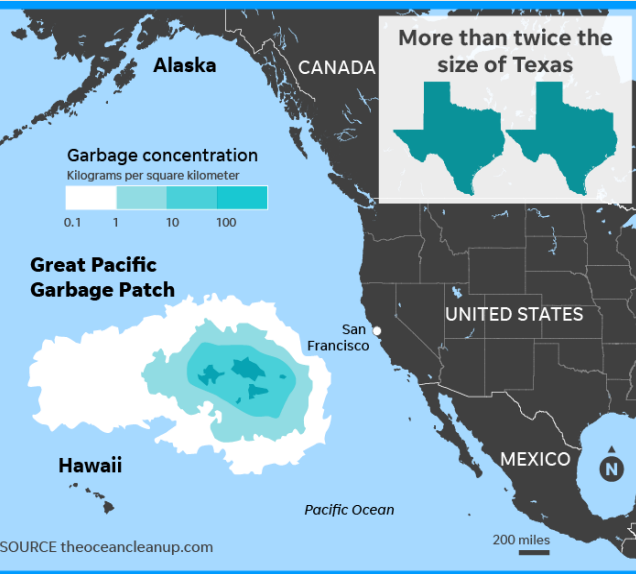
This map shows how the garbage starts off on the coast than eventually gets collected into a gyre.

Why the garbage is collected and creates an island.

Trash Islands are created by Gyres. A Gyre is a kind of vortex where the garbage is collected. It is formed by the earth's wind patterns and the forces created by the rotation of the earth. Gyres are located in the middle of the major oceans. The largest gyre is located in the North Pacific. See more about the Great Pacific Garbage Patch in Alex's Slides (slides 2 - 11).



Down to the Numbers



An estimated amount of 1.15 to 2.41 million tons of plastic enters the ocean each year from rivers. About 1.8 trillion pieces of plastic are in the ocean. The Great Pacific Garbage Patch is the largest of the garbage islands (1 on the map in the bottom right) and is 2x the size of Texas and 3x the size of France. See more about the Great Pacific Garbage Patch on Alex's slides.