## The Sea is Our First Home!

Have you ever seen a picture of the earth taken from a spaceship? If you have, wasn't its beautiful blue color incredible?

This beauty of our earth graced by the presence of water is what gives it other name, the "water planet." Among the other planets in the solar system, as far as we know, the earth is the only one with oceans. Mars has nothing but ice and on Venus the temperature is way too high for there to be any water.

There are many songs about the big wide sea. But just how big is the ocean? Let's find out.

Almost 70 percent of the earth is covered by the ocean and the average depth of water is 4,000 meters. That means that if, for example, Japan's tallest mountain, Mt. Fuji, was moved into the ocean, the water would cover it completely! The deepest ocean in the world is 10,000 meters deep. In this case, if you could stack up three Mt. Fujis, one on top of the other, and put them in the ocean, only the very tip of the top one would stick out!

The sea appeared on earth soon after the earth was created, and from it came the first signs of life. Human beings and other living things can all be traced back to the sea, meaning that it was our "first home." Even now, no matter how advanced our society becomes, all living things on earth, including us human beings, could not exist without the sea.

So, what kind of condition is our precious ocean in now? What's the relationship between us people and the sea?

The sea has many purposes such as supplying food, energy and various resources. It is also used to transport people and goods. Finally, it helps balance the climate of the entire world and releases oxygen into the atmosphere. Now let's take a look at food that comes from the sea.

How often do you eat fish? The average Japanese person eats 70 kilograms of fish per year. Compare this to the rest of the world that has an average of just 15 kilograms per year. So this means that Japanese people eat nearly five times the amount of fish eaten by other people around the world! Since the sea surrounds Japan, fish (along with rice) has been the most commonly eaten food in that country.

Fifty years ago, the total weight of fish caught in a year (the global fish catch) was 1,900 tons. But technological developments in the world's fishing industry, such as fish detectors and boats, called trawlers, which pull huge nets behind them, have made it possible to catch huge numbers of fish at once. The global fish catch skyrocketed to nearly 90 million tons in 1989 but ever since then, that number has been getting smaller. Meanwhile, the world's population has gone from 2.5 billion people 50 years ago to 6.4 billion today.

Next, let's compare the world population with the total global fish catches of the last 50 years. Up until ten years ago, the amount of fish caught from the sea, per person, grew from 7.5 to 17 kilograms. However, over the last ten years, while global fish catch has stayed the same, the population has quickly grown. So, the amount of fish per person is slowly shrinking. Can you think of ways we help protect fish in the sea?

## The Ocean is Alive

Humans and other creatures that live in the same area maintain a very close, interrelated balance with each other. The ocean is part of this balance, and it is easily affected by any changes. When people catch too many fish, this balance is destroyed, and it damages the ocean's health.

Off the coast of Central America is the Caribbean Sea, which has beautiful coral beds on the sea floor. However, shop owners who sell souvenirs there caught too many of a certain kind of fish for tourists. The result was a huge increase of sea urchins in the area, because the fish that used to eat the sea urchins were gone.

Sea urchins eat the algae that protect the corals! The corals in the area were destroyed after an uncontrolled number of sea urchins ate all the algae that could be found. As a result, divers and tourists started going to other places to see beautiful corals, and local people's income decreased.

The souvenir shops might have made a lot of money from selling the fish at first, but ended up having to close down. Because they caught as many fish as they wanted just for their profits and without thinking about the future, it came back to haunt them.

The same can be said about trawler fishing. Trawler boats pull big nets with chains that scrape everything from the bottom of the sea. By doing this, fishermen can catch a lot of fish at once. But trawlers dig up mud, rocks and sand, and destroy the precious homes where fish eggs are spawned and tiny fish grow. As fishermen use more and more trawlers, the number of fish will decrease, and soon there won't be any fish to catch at all.

Also, trawlers catch various kinds of fish. Some fish are by catches, which are incidentally caught with the targeted species. They sometimes include even turtles and dolphins. A large number of fish are thrown back to the sea after being caught, and most of them die. It amounts to 20 million tons a year--the same as a quarter of the world's fish catches.

We need a method of catching fish that doesn't destroy so much other sea life. An increasing number of countries use specially designed nets that turtles cannot get into. In Japan, trawling is being banned in some communities, and some people are trying to reduce the number of trawlers used.

Even so, fishermen still use trawlers to catch shrimp. Why? Well, it's because there are many people who buy shrimp. In Japan, an average person eats as much as three kilograms of shrimp a year, as Japan is the world's top "shrimp consumer." So, we have to think not only about how we catch fish, but also about our diet.

## Let's Unite Our Efforts to Protect Our Precious Seas

Do you know about any of the plans or activities that protect our precious seas?

First of all, setting a limit on fish catches and staying within that limit is one solution against overfishing (catching fish faster than they can reproduce). The fish population will naturally increase year to year as long as we don't catch more fish than can be replaced naturally, so we can continue fishing forever. The amount which is set for this limit is called a "sustainable" fish catch. The word "sustainable" means it can continue forever.

Japan is making an effort to reduce overfishing of certain types of fish by limiting fish catches and fishing areas. The problem with this method though, is that fish swim beyond country borders without a passport! So, in order for fishing limits to work, it is necessary for countries, especially those around a common sea, to cooperate in protecting fish.

Japan and its neighboring countries, such as China and South Korea, made rules about fishing. For example, "Let's not catch fish in this area," and "Let's only catch a certain amount of fish." Japan and other Asian countries together are doing surveys and studies about the Asian seas in order to protect the seas.

The United Nations Convention on the Law of the Sea, or simply called "the Law of the Sea," is an international agreement about the rules governing the sea. It has many important laws designed to protect the sea and to prevent pollution.

The Ramsar Convention, another international agreement, was made in 1971 to preserve wetlands and tidal flats, which are important for water birds. Japan is also taking part in this important convention. There are about 40 tidal flats remaining in Japan, and 13 of them are said to be crucial for migratory birds. However, the Ramsar Convention only protects a few of these tidal flats; without protection, it is likely that the others may eventually disappear because they may be filled with soil to use the land for other purposes.

How far migratory birds can fly without rest varies with the type of bird. They cannot continue their flight if they cannot find wetlands where they can land for food and rest. Some wetlands are being preserved individually, but that is not enough because they are often located too far away from one another for the birds. Countries around the world need to cooperate to preserve all the wetlands along birds' flight courses.

The most important thing is how we think and act as individuals. After reading this website, you will know the functions of the sea and its importance. Maybe it will make you think, "We are so lucky to have the sea!" "It's a terrible waste to pollute the sea!" and "How can we save the sea?"

Please think of one or two things you can do to help the sea. Then it is up to you to bring your ideas to life. Without action, your good ideas can't take effect. We hope our planet (and seas!) remains like the one we sing about in a famous Japanese children's song, "The Ocean is so big and vast!"

## Is the Sea a Garbage Dump!?

Here's a riddle for you: What is the largest garbage dump in the world? Sadly, the answer is "the sea!"

About 3.5 billion years ago the first life on Earth emerged from the ocean. So, it makes sense to think of the sea as our home. But, now the sea, our precious home, is a garbage dump?

Yes, it's sad but true. The sea has become a giant garbage dump!

What kinds of garbage are thrown into the sea? Plastic bags, plastic bottles, cooking oil, leftover food, detergent powder and foam, empty cans, oil leaked from tankers, wastewater discharged from factories, etc. My goodness! Even cars and submarines have been dumped at the bottom of the deep sea.

Where did all this garbage come from? Well, some came from people who visited the sea for fishing or swimming. However, according to a survey, most garbage on the beach flowed from rivers out to the sea and then washed back up on the shore. Therefore, we can't say, "the garbage on the beach is none of my business because I don't go to the sea." The garbage found on the beach comes from everyone, everywhere!

If we throw away used cans or snack wrappers into a river after playing at the riverside, they will reach the sea and will make seabirds and fish suffer. So, please bring your trash back home with you. Also, by picking up trash you see along the riverside, it is helpful not only for the rivers but also for the sea.

Without our knowing it, wastewater from households is contaminating the rivers and oceans. In our houses, wastewater is generated in the kitchen by washing vegetables and dishes, and in the bathroom by washing our bodies and hair, and by flushing the toilet. An average person in Japan produces about 250 liters of wastewater per day. This amount is equal to a bathtub full of water.

In Japan, all wastewater from toilets is treated. However, surprisingly, 65 percent of all other wastewater runs into rivers without any processing at all. About 70 percent of pollutants in rivers come from household wastewater. In fact, household wastewater pollutes rivers much more than do industrial plants.

Usually, rivers and seas can become clean by themselves if the contamination is not too severe. Today though, with so many people dumping various wastes into drains and other waterways, this kind of "self-cleaning" is getting more and more difficult. As a result, river and ocean pollution is becoming a serious issue.

For this reason, it's important to be careful not to pour water with waste in it into drains. We should keep in mind that even though we can't see it, oil and detergent poured into kitchen sinks travel through rivers and flow into the sea. Therefore, before throwing garbage into rivers or the sea, or before pouring waste liquids into the sinks, just think about the invisible effects. Let's protect our rivers and oceans!