# A Christian's Guide to Planet Earth

## WHY IT MATTERS AND HOW TO CARE FOR IT

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ZONDERVAN

*A Christian's Guide to Planet Earth*



Requests for information should be addressed to:
Zondervan, *3900 Sparks Dr. SE, Grand Rapids, Michigan 49546*

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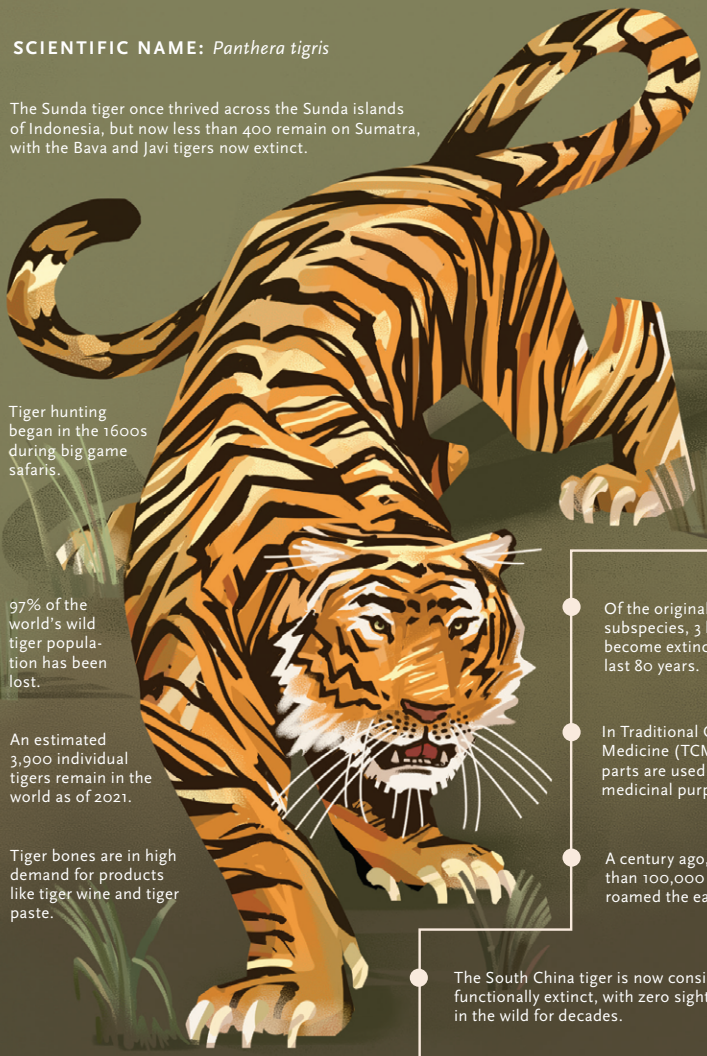
# Aquifers *and* Wells


Humans rely on aquifers for drinking water. These bodies allow water to move up through the saturated rock and sediment, providing the majority of our groundwater. These water-bearing stratums release the water in appreciable amounts, which make up about 37 percent of our drinking water—noting that wells can be drilled into aquifers, for easier potable water access.

# *The* Endangerment *of* Tigers

**SCIENTIFIC NAME:** *Panthera tigris*

The Sunda tiger once thrived across the Sunda islands of Indonesia, but now less than 400 remain on Sumatra, with the Bava and Javi tigers now extinct.



Tiger hunting began in the 1600s during big game safaris.

97% of the world's wild tiger population has been lost.

An estimated 3,900 individual tigers remain in the world as of 2021.

Tiger bones are in high demand for products like tiger wine and tiger paste.

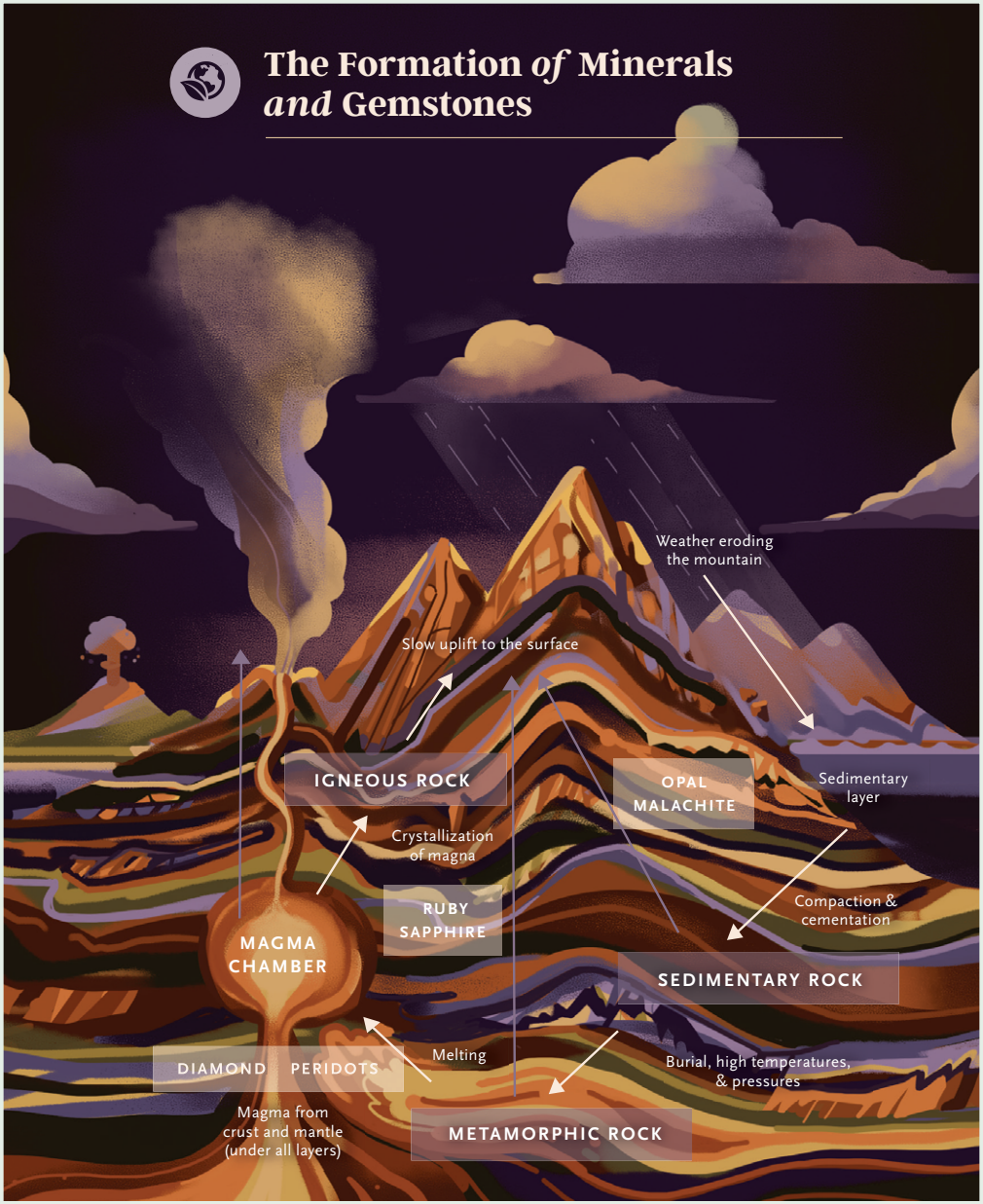
Of the original 9 subspecies, 3 have become extinct in the last 80 years.

In Traditional Chinese Medicine (TCM), tiger parts are used for medicinal purposes.

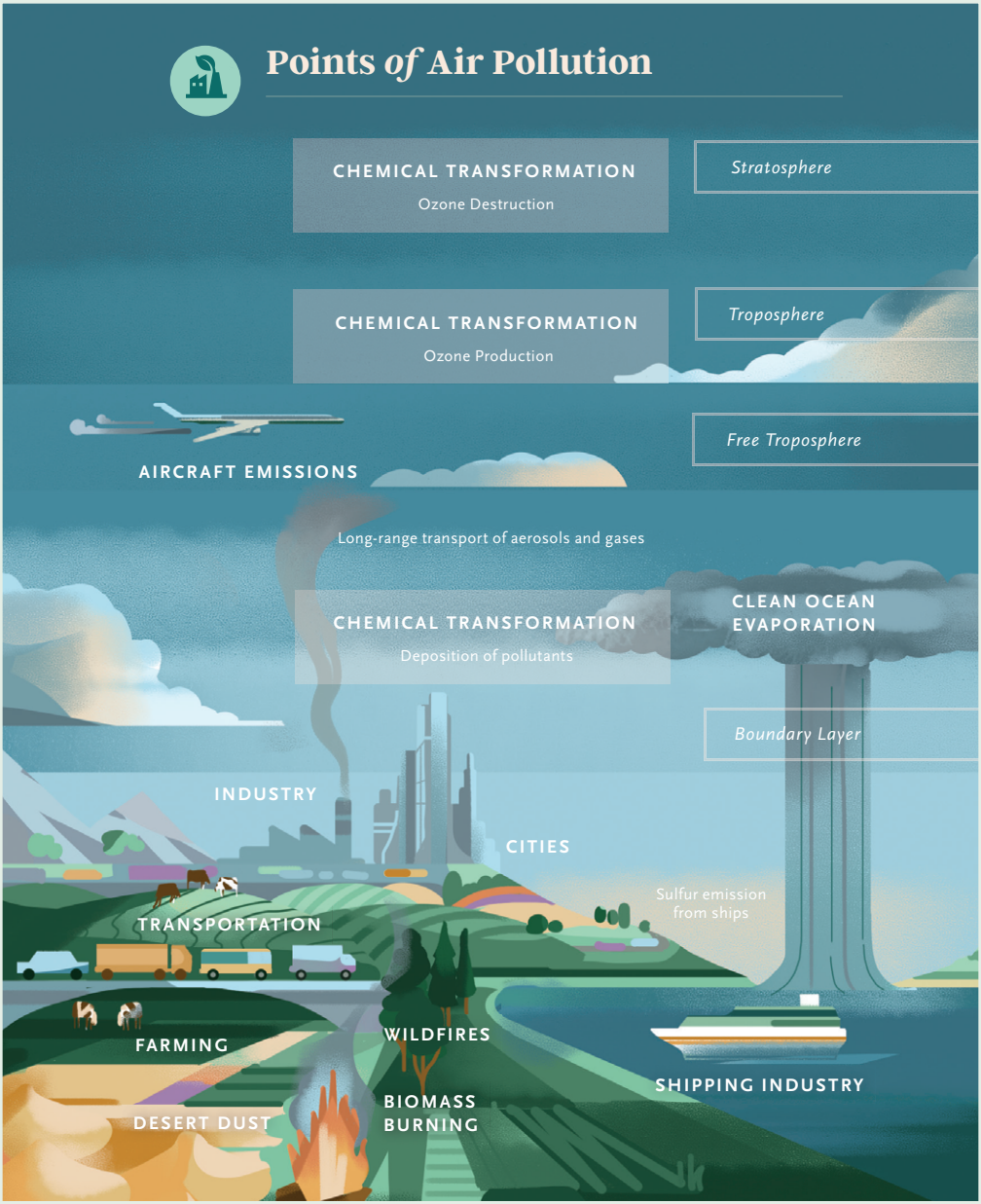
A century ago, more than 100,000 tigers roamed the earth.

The South China tiger is now considered functionally extinct, with zero sightings in the wild for decades.

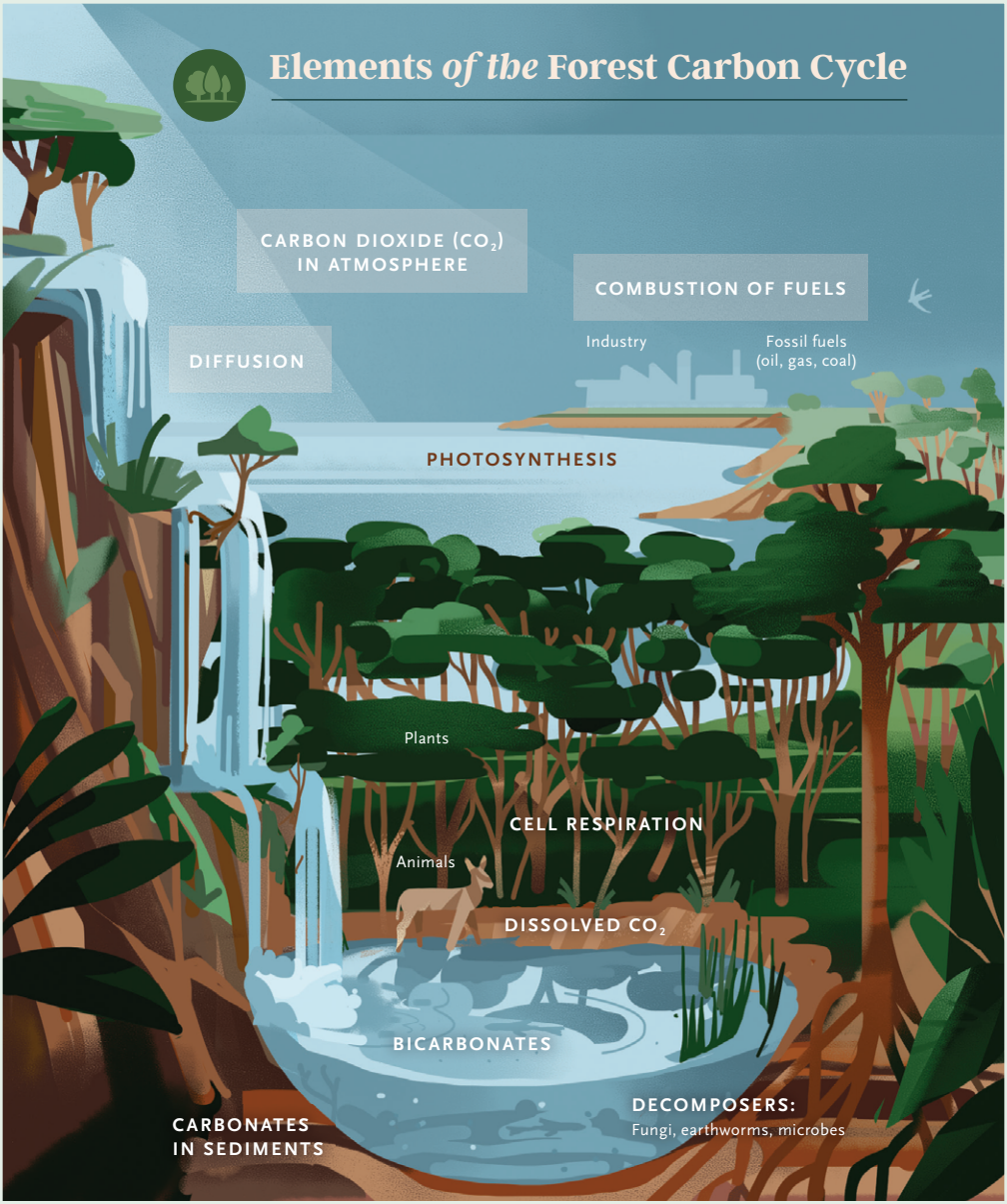
Tigers have faced extinction since the 1970s, when their population dropped to fewer than four thousand remaining in the wild. Poaching, fragmentation, and habitat loss have led to their endangerment. Unless wildlife conservationists succeed at protecting both the animals and their habitats, it's estimated that tigers could become extinct in the next twenty years.




Minerals and gemstones form under various conditions in the earth's crust, with the exception of diamond and peridot, which form much deeper in the earth's mantle where magma is found. Through what's called the *igneous process*, magma rises through volcanic pipes to the crust and cools, crystallizing and forming minerals and a long list of precious gemstones.




When solid and liquid particles—along with certain gases—become suspended in the air, they form air pollution. These gases and aerosols are created by everything from dust, pollen, and mold spores to car exhaust, factory farming, and wildfires. Most air pollution is caused by the burning of fossil fuels, transportation, agriculture, landfills, and exhaust from factories.

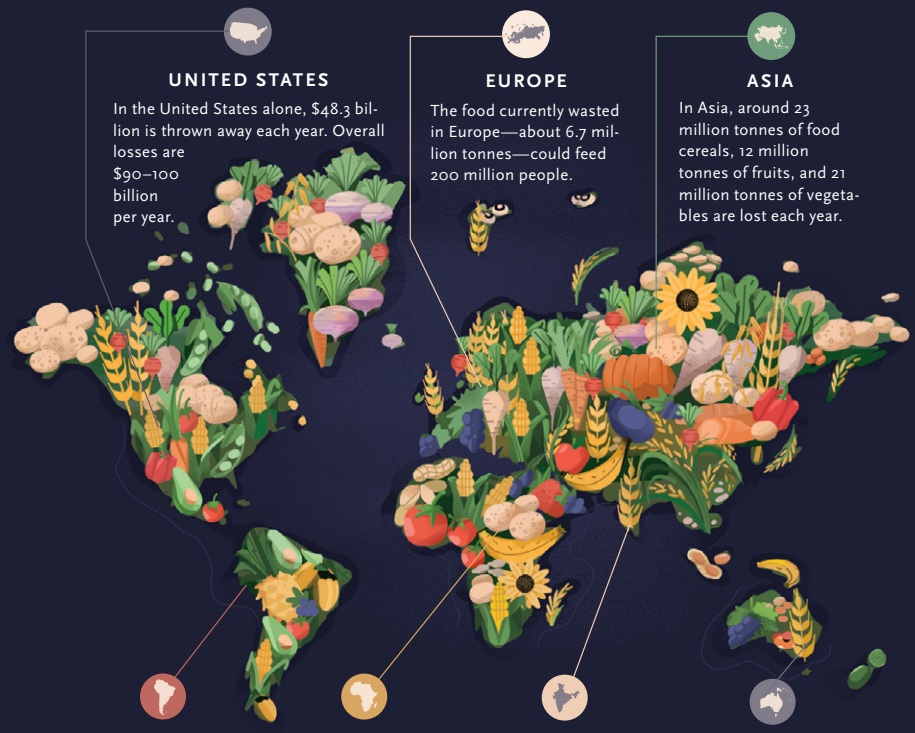



The carbon cycle is the biogeochemical process by which carbon is exchanged and is critical for maintaining a stable carbon balance and climate. It consists of these steps: carbon moves from the air to plants (in photosynthesis), from plants to animals, from plants and animals to soil (through decomposition), from living things and fossil fuels to the atmosphere, and from the atmosphere to the ocean.

# Global Food Production *and* Waste

$1 TRILLION DOLLARS' WORTH OF FOOD IS LOST OR WASTED EVERY YEAR.

IF EVEN 25% OF THE FOOD CURRENTLY LOST OR WASTED COULD BE SAVED, IT COULD EASILY FEED 870 MILLION HUNGRY PEOPLE IN THE WORLD.



### UNITED STATES

In the United States alone, $48.3 billion is thrown away each year. Overall losses are $90–100 billion per year.

### EUROPE

The food currently wasted in Europe—about 6.7 million tonnes—could feed 200 million people.

### ASIA

In Asia, around 23 million tonnes of food cereals, 12 million tonnes of fruits, and 21 million tonnes of vegetables are lost each year.

### LATIN AMERICA

In Latin America the food lost or wasted could feed 300 million people.

### AFRICA

In Africa, losses can reach up to 50% for some less-hardy crops, such as fruits, vegetables, and root crops.

### INDIA

An estimated 580 billion rupees (nearly $8 billion) is wasted each year in India, in agricultural produce.

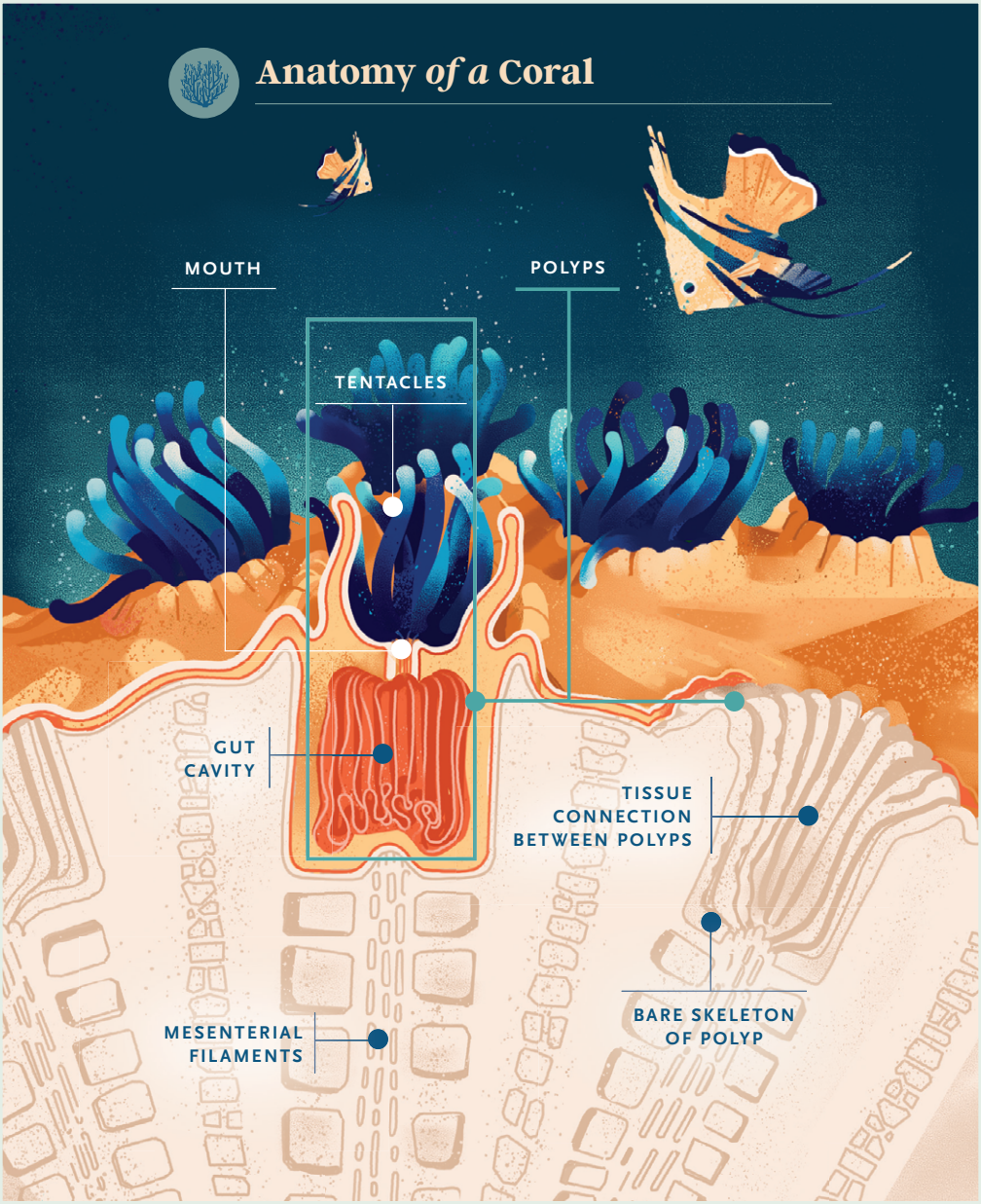
### AUSTRALIA

In Australia, an estimated $10.5 billion was spent on items thrown away (more than $5,000 per capita per year).

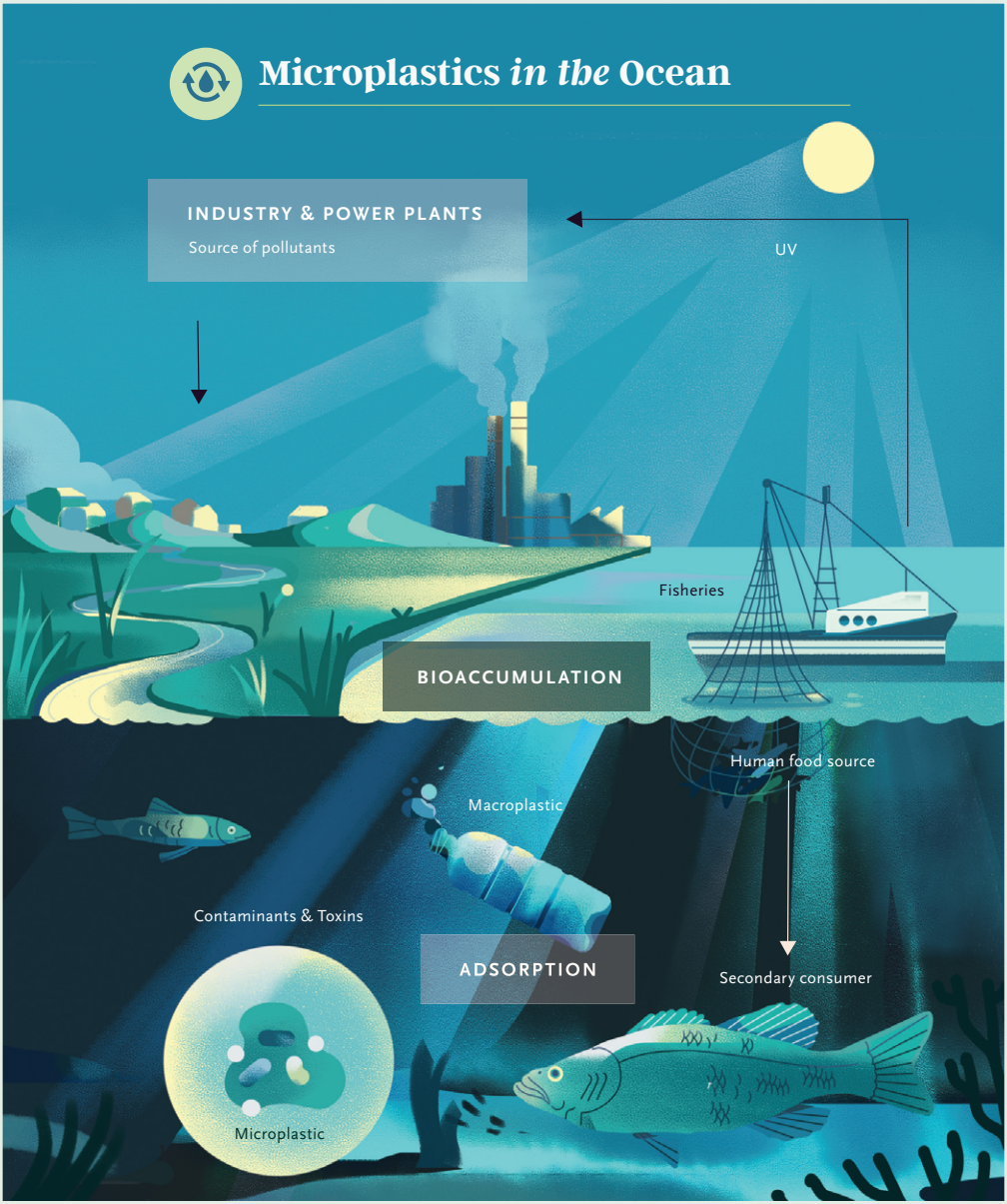
An estimated 690 million people are hungry in the world—primarily in Asia and Africa—with the main problems being massive global food waste and poor distribution. A third of the food produced—around 1.3 billion tonnes—is either lost or wasted every year. About 35 percent are losses at the farm level, and another 26 percent are lost at the retail sector. Supermarkets, however, lost only about 1 percent.


Pollination is critical to our survival. Approximately 85 percent of all plants—more than 150 food crops in the US—depend on pollinators to produce seed, which are key to forming the next generation of plants. This, in turn, provides food for the next generation of pollinators and other life. Since the plants are rooted in place, pollinators act as the agent to transfer pollen for them.

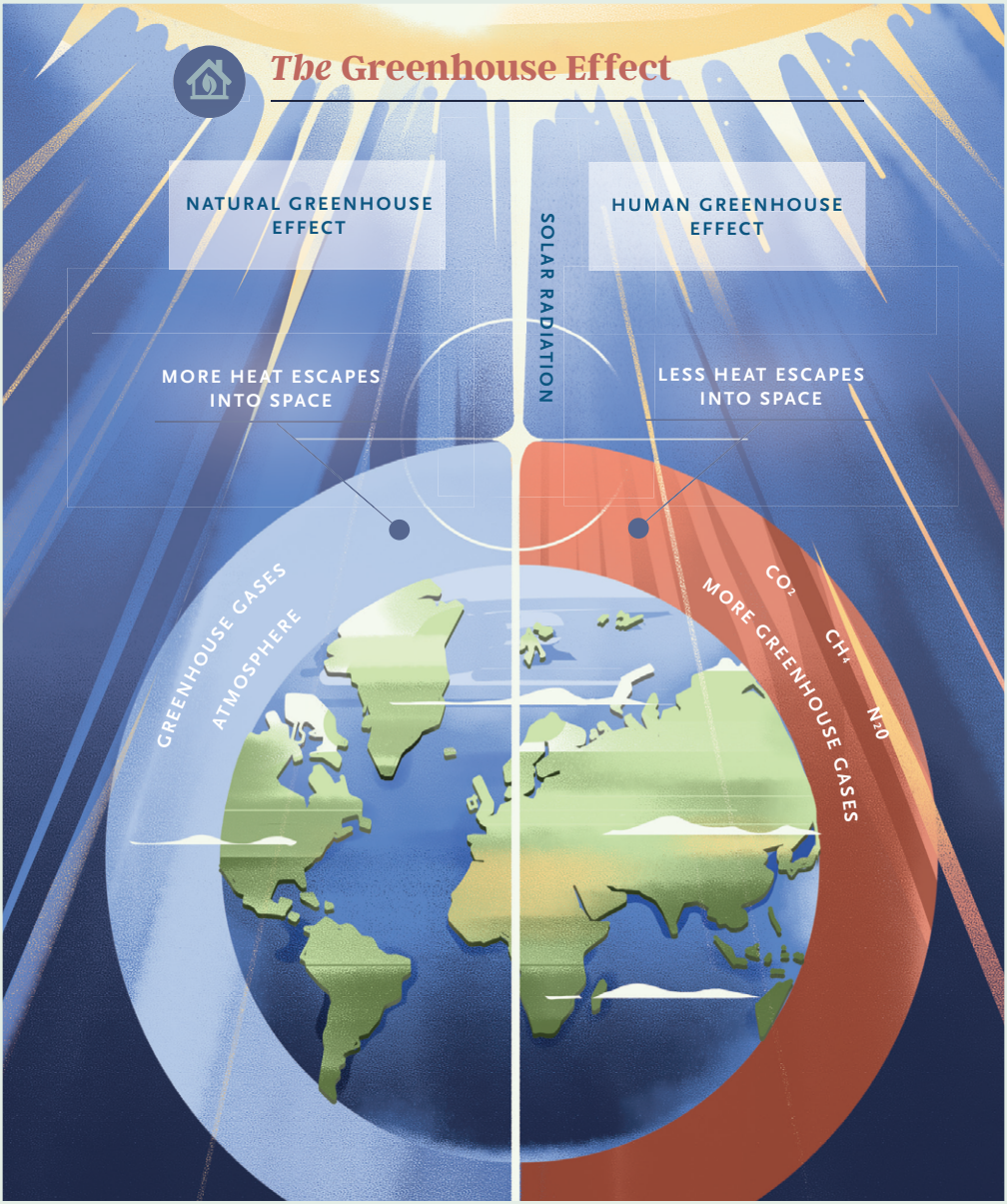

Mangroves keep coastal zones healthy, providing habitat for thousands of species, stabilizing shorelines, preventing erosion, filtering pollution, including carbon dioxide, and protecting the land from waves and storms. They filter up to 90 percent of salt from seawater, and excrete it through glands and leaves, or through bark shedding. The destruction of mangroves in wetlands leads to coastal damage and increased flooding, along with the release of large amounts of carbon dioxide into the atmosphere.




The coral reef structure is made of thousands of polyps. This illustration shows the basic anatomy of a single polyp—the main part of the structure affected by coral bleaching. Bleaching occurs when corals expel algae that live inside their tissue, causing them to fade, often turning completely white. When the ocean gets too warm, the coral becomes stressed and expels the vital algae.




Microplastics—pieces smaller than 5 mm in size—are present in the oceans around the world. They're formed when larger pieces of plastic are broken down by waves, wind, and UV radiation from the sun. Through adsorption, contaminants and toxins bind to microplastics. Ingestion of these microplastics moves the chemicals up the food chain from plankton, to small fish, to larger fish and mammals, and then to humans—a process called bioaccumulation.




The greenhouse effect is the natural warming of the earth's surface and atmosphere that results from the presence of carbon dioxide, methane, water vapor, and other gases or aerosols. Like a greenhouse, this radiating heat gets trapped in our atmosphere because certain gases allow sunlight to enter, while blocking the heat from escaping. Humans have augmented this greenhouse effect and interfered with the natural level of greenhouse gases in the atmosphere.