More Valuable Than Gold

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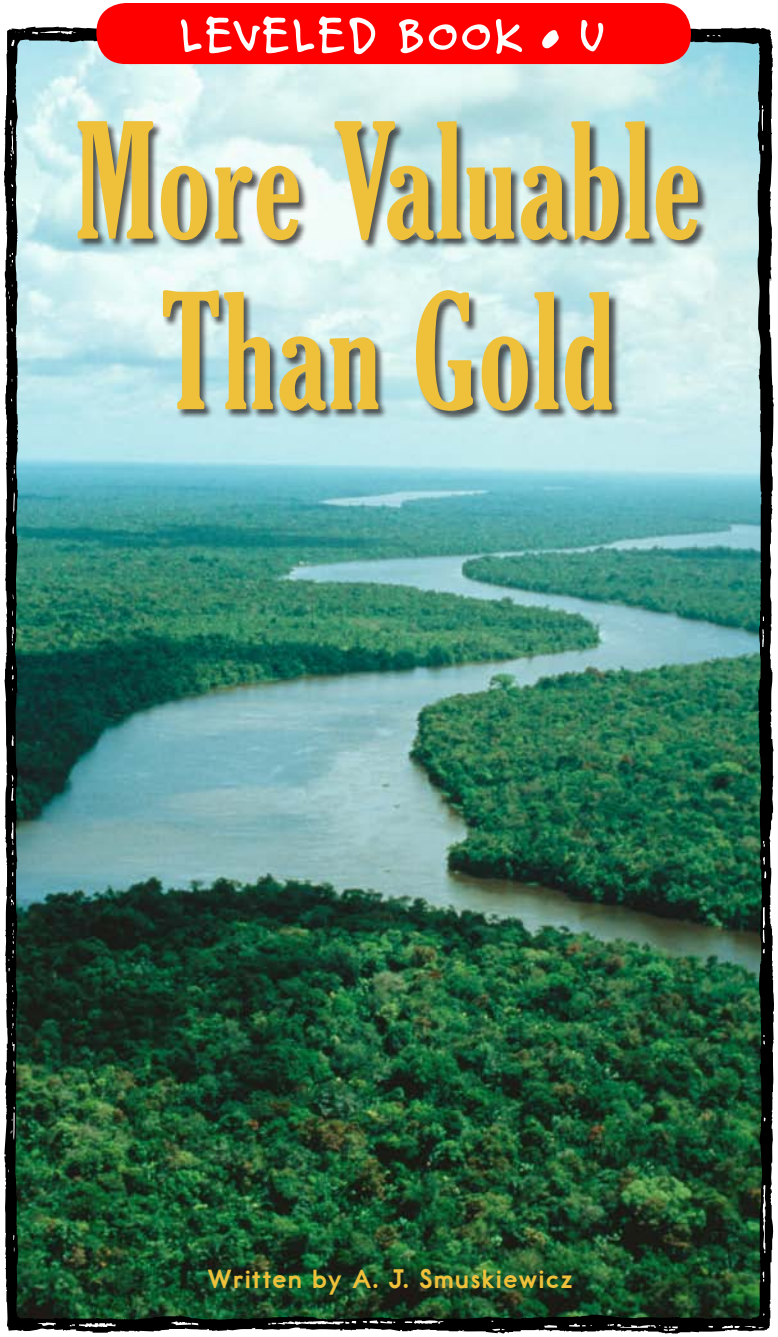

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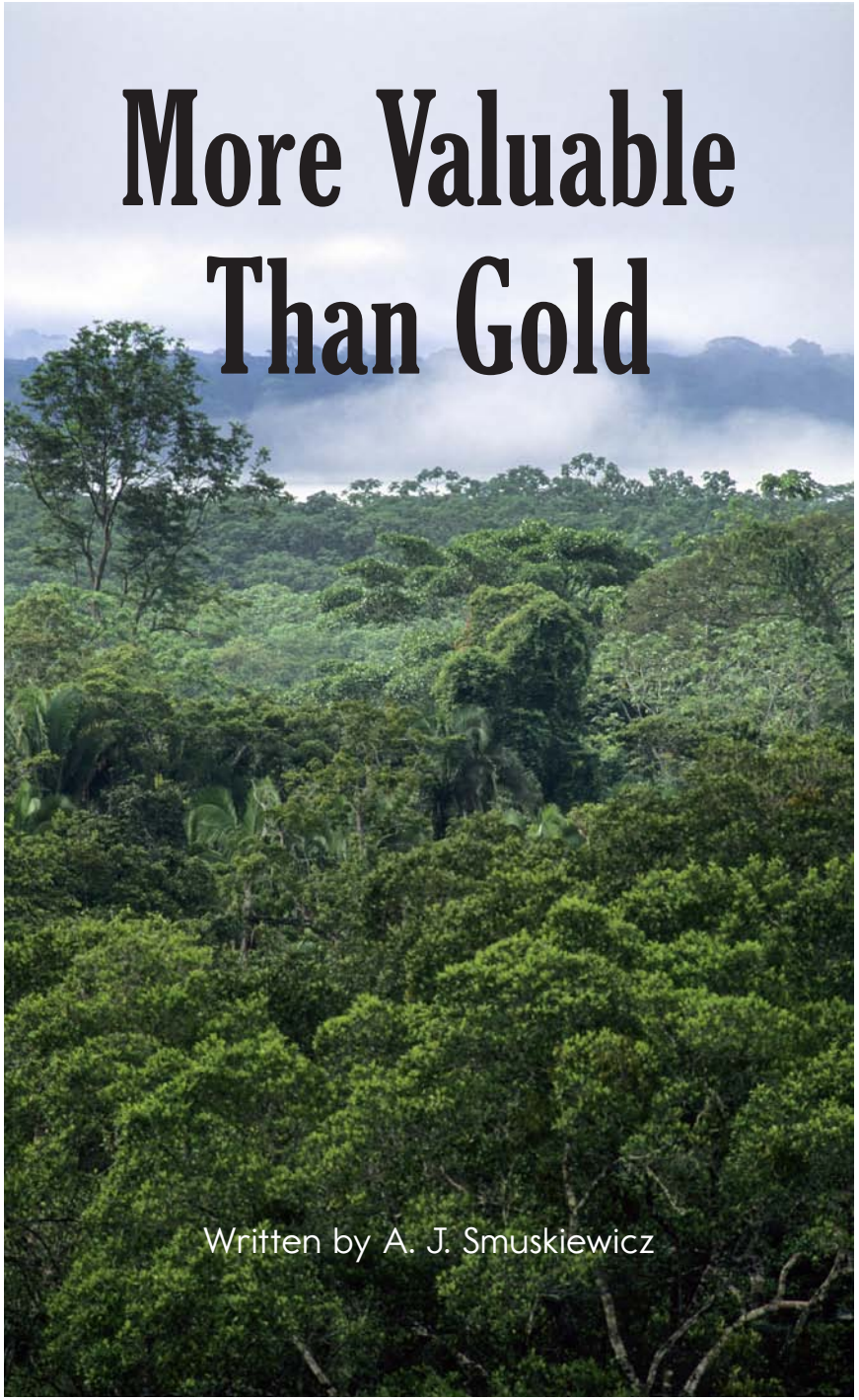

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More Valuable Than Gold
Level U Leveled Book

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The tangled trees of the Amazon rainforest are home to millions of species of animals and plants.

The Amazon Rainforest

Imagine walking through a beautiful forest with giant trees, vines, and large, colorful flowers. Strange sounds made by birds, monkeys, and other wild animals fill the air. Big, brightly colored snakes, frogs, and insects crawl along the branches. The temperature is high, but raindrops sprinkle through leaves overhead.

It takes years for the rainforest to recover from the destruction caused by illegal mines, such as this one near the border of Brazil.

Suddenly you come upon a bare area with no plants or animals and an enormous, deep hole gouged into the ground. The grinding of machines and the yells of people replace the wild forest sounds. Many workers hurry in and around the hole. They are **mining** for gold.

This is South America's Amazon **rainforest**—a place with more kinds of plants and animals than any other. However, human activities are destroying this rainforest, and gold mining is among the most harmful.

Threats to the Rainforest

The Amazon River flows for about 4,000 miles (6,437 km) from the Andes Mountains to the Atlantic Ocean. In the river valley, constant warm temperatures and large amounts of rain allow for amazing **biodiversity** in the rainforest. The Amazon rainforest is so vast that it seems as though nothing could harm it. However, people destroy huge areas of the rainforest every year through **deforestation**.

Deforestation happens for many reasons. Loggers cut down trees to make paper and wood products, such as furniture. Ranchers clear land for cattle. Farmers use land to grow soybeans, corn, and other crops.

These satellite photos show the effects of logging in one section of the Amazon rainforest from 2000 to 2006.

A scientist holds a young Hyacinth Macaw. These endangered birds are native to the Amazon rainforest.

Tens of thousands of plant species, billions of insects, and many fish, amphibians, reptiles, birds, and mammals live in the Amazon region. The forest's destruction has likely wiped out thousands of plant and animal species. Many of these may not have been discovered or studied by scientists. From some of these extinct plants and animals, scientists might have been able to discover things that could help people, such as medicines. The Amazon rainforest also produces about 20 percent of Earth's oxygen, and water vapor released by the vast number of rainforest plants affects the global climate.

Do You Know?

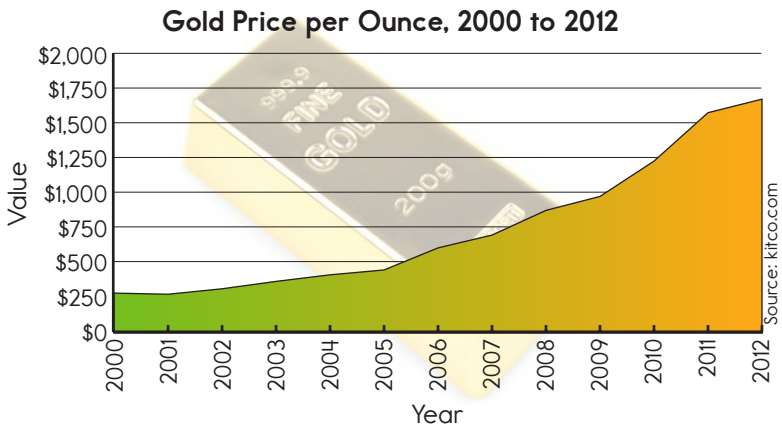
Plants store large amounts of carbon, which they use to make energy. When they are burned, large amounts of carbon dioxide are released into the air. Scientists think that in the future, the Amazon rainforest will produce more carbon dioxide than it removes.

The deforestation of the Amazon rainforest may add to global climate change as well. Rainforest plants remove carbon dioxide from the atmosphere for photosynthesis, the process by which they make their own food. With fewer plants, more carbon dioxide stays in the atmosphere. Large amounts of carbon dioxide trap heat in Earth's atmosphere and contribute to global warming.

Though not the greatest causes of deforestation, gold **prospecting** and mining cause long-term damage. They also affect more than just the areas around the mines. The high price of gold fuels demand, which means the destruction will continue for years to come.

Why Gold?

Gold is very valuable and difficult to find in nature. Large amounts of it exist underground in the Amazon Valley. People mainly use gold to make jewelry. However, many computers, cell phones, and televisions contain gold wires. Dentists use gold when repairing teeth. Gold on the outside of spacecraft keeps the Sun's heat from damaging equipment. With so many uses for gold—and more expected—the price of this rare metal has increased in recent years.



Many people living in the Amazon region are poor and have little opportunity to make a living. Gold miners can earn more than $70 per day, which is more money than a farmer in the area would earn in a month. To these people, money to feed their families is worth the damage to their health and the health of the rainforest.

Illegal miners in Peru search for gold in a protected part of the rainforest.

Gold Mining in the Amazon

The methods used in gold prospecting and mining are harmful to people as well as the rainforest. Many of the gold mines are small, **illegal** operations located in parts of the forest protected by governments. Many South American governments do not have enough money or officers to protect the land, which means these mines wipe out more and more of the forest every year.

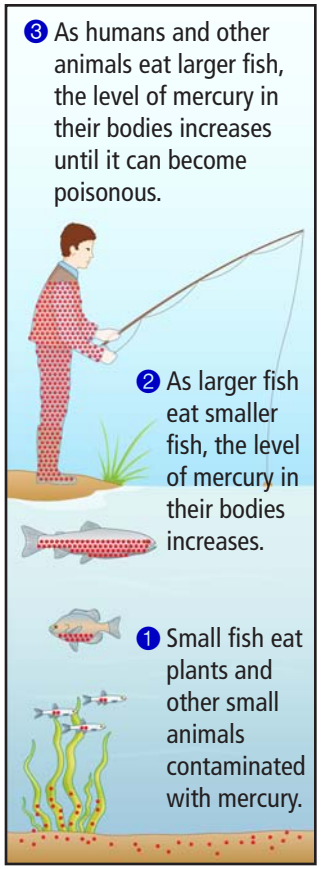
To get the buried gold, prospectors cut down or burn all the trees. They then dig a deep pit with machines or blast out a pit with dynamite. The pit may be as deep as 50 feet (15 m). Miners blast away the walls of the pit with powerful water cannons. This process loosens the **ore**, which contains the gold, from the walls. The loosened, muddy mixture is sucked up into dump trucks that empty the mud into containers.

The water cannons that miners use have enough power to lift a person off the ground.

A miner pours the mercury and gold mixture into a tub to be processed. Handling mercury is extremely dangerous. (Inset) After processing tons of soil, a miner shows how much gold he has found in one day.

Workers mix the mud with **mercury**, a **toxic** metal, sometimes using their bare hands or feet. The mercury separates the gold from the ore. Some smaller mines use copper pans or sheets to separate the gold and mercury mixture from the mud. Others use **sluices**, in which a filter captures the heavier gold and mercury mixture as the watery mud runs down. The mercury is removed from the gold, often by burning it away. The gold can then be sold.

This process **contaminates** the forest with mercury. In the soil, it poisons forest plants and farm crops. In rivers, it enters the bodies of fish. As larger fish eat smaller fish, the amount of mercury in the bodies of the larger fish increases until they become poisonous. When people or other animals drink contaminated water or eat contaminated plants or fish, they become poisoned by the large amounts of mercury. Because gold miners work so closely with mercury, they often become poisoned when they breathe in its fumes or touch the chemical with their bare hands or feet.



Mercury poisoning can cause many health problems, including lung disease, kidney disease, shaking, blindness, and trouble walking and talking. People who have been poisoned may be in great pain and so sick that they can barely move. It can take years for people to recover from some of the effects of mercury poisoning, while others will never heal.

Illegal miners must clear away the rainforest to make their camps.

Protecting the Rainforest

Many people are working to protect and preserve the rainforest. This is difficult work. Gold mining, logging, ranching, and other harmful activities are profitable and widespread throughout the Amazon region.

Some governments in the Amazon region are spending more money to enforce laws and close down illegal mines. However, as long as poor people have few jobs and little money, they may want or need to mine gold. The best solution to the problem of rainforest destruction may be for governments to improve economic opportunities. For example, the government of Brazil has programs to improve the education and job skills of poor people. This allows them to get other jobs besides those that harm the rainforest.

Governments are not alone in protecting the rainforest. They have help from **conservation** organizations. These groups work with government agencies, businesses, and other organizations to study and conserve natural places. Continued efforts by both governments and conservation organizations are necessary to stop illegal mining and protect the rainforest.

The Amazon region may seem far away, but its destruction affects the entire world. Are the jewelry and other things we make from gold really worth damaging the health of the planet and its inhabitants?

A farmer checks on a young tree as part of a reforestation project in Brazil.

Glossary

biodiversity *(n.)* the variety of life forms on Earth or in a specific habitat or ecosystem (p. 6)

conservation *(n.)* the protection of wild lands and the living things found there (p. 15)

contaminates *(v.)* makes something unusable or unsafe by adding a harmful or unwanted substance (p. 13)

deforestation *(n.)* the clearing away of trees and other vegetation in an area (p. 6)

illegal *(adj.)* against or forbidden by a law or rule (p. 10)

mercury *(n.)* a silver metal that is liquid at room temperature and very poisonous (p. 12)

mining *(v.)* taking minerals from the ground by digging or blasting (p. 5)

ore *(n.)* a rock that has useful minerals or metals inside it (p. 11)

prospecting *(n.)* searching for valuable things, such as mineral deposits or oil (p. 8)

rainforest *(n.)* a dense forest, usually in a tropical area, that receives a lot of rain and contains diverse animal and plant life (p. 5)

sluices *(n.)* artificial passages for water that often have a valve or gate to control the flow (p. 12)

toxic *(adj.)* poisonous; dangerous to life (p. 12)