



1. Norilsk Mining Region



Human environment interaction is the way that people use the environment for natural resources. The **Norilsk Region** of Russia is rich in copper, cobalt and nickel on which many people depend on for trade. They mine these resources, but as a result modify the environment causing pollution. The Norilsk Region gained popularity during the second world war when metal production increased rapidly throughout the region. Due to this need, Norilsk became an important region for Russia (and the future Soviet Union). The negatives for this region include rapid pollution and toxic runoff that is produced within the region. Since Russia was so involved in war efforts, they had little time, money, and focus on environmental factors when creating the mines throughout the region. This pollution has inhibited vegetation growth in the immediate area, and any berries/fruits are inedible because of the toxicity in the environment. In fact, environmental modification includes water pollution from manufacturing plants as well as increasing hazardous waste.

2. Chernobyl

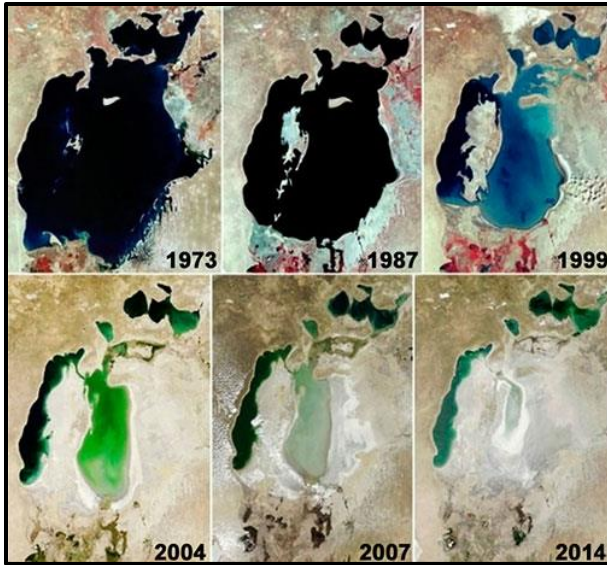


The Soviet Union built the Chernobyl plant, which had four 1,000-megawatt reactors, in the town of Pripjat. At the time of the explosion, it was one of the largest and oldest nuclear power plant in the world. The explosion and subsequent meltdown of one reactor was a catastrophic event that directly affected hundreds of thousands of people. Still, the Soviet government kept its own people and the rest of the world in the dark about the accident until days later.

It soon became apparent that the Soviets were covering up a major accident and had ignored their responsibility to warn both their own people and surrounding nations. Two days after the explosion, Swedish authorities began measuring dangerously high levels of radioactivity in their atmosphere.

Years later, the full story was finally released. Workers at the plant were performing tests on the system. They shut off the emergency safety systems and the cooling system, against established regulations, in preparation for the tests. Even when warning signs of dangerous overheating began to appear, the workers failed to stop the test. Xenon gases built up and at 1:23 a.m. the first explosion rocked the reactor. A total of three explosions eventually blew the 1,000-ton steel top right off of the reactor. Flames shot 1,000 feet into the air for two days, as the entire reactor began to melt down. Although firefighting was futile, Pripjat's 40,000 people were not evacuated until 36 hours after the explosion. Potentially lethal rain fell as the fires continued for eight days. Dikes were built at the Pripjat River to contain damage from contaminated water run-off and the people of Kiev were warned to stay indoors as a radioactive cloud headed their way.

3. Shrinking Aral Sea



A recent visitor to an old Aral fishing village described the change: “I stood on what had once been a seaside bluff . . . but I could see no water. The sea was **twenty-five miles** away.” The dried-up seabed had become a graveyard for abandoned ships. The powerful winds were covering local populations with polluted dust picked up from the seabed. Thousands of people have left the region, and those who remain risk illness, or even death. Between 1960 and the present, the Aral Sea lost about 80 percent of its water. Central Asian leaders now face one of the earth's greatest environmental tragedies.

The Aral Sea receives most of its water from two rivers, the Amu Darya and the Syr Darya. Before the 1960s, these rivers delivered nearly 13 million cubic miles of water to the Aral Sea every year. But in the 1950s, officials began to take large amounts of water from the rivers to irrigate Central Asia's cotton fields. Large-scale irrigation projects, such as the 850-mile-long Kara Kum canal, took so much water from the rivers that the flow of water into the Aral slowed to a trickle. The sea began to evaporate. Today the Aral Sea is only slightly replenished seasonally when the flood waters return. However, this is still drastically less than it was 50 years ago. Today there is still an enormous dependency on the water for crops, farming, and agriculture.

Scientists believe that to improve the Aral Sea you would have to remove 9 of the 18 million acres of agriculture currently dependent on the Aral Sea. To do this would cause a terrible hardship for millions of people throughout Central Asia that have grown dependent upon the farming lifestyle. Also, of the 24 native fish species once found in the Aral Sea, all are now gone. Lost due to both habitat removal and a sharp increase of pollution from farming run off (fertilizer and pesticides).

4. Siberia

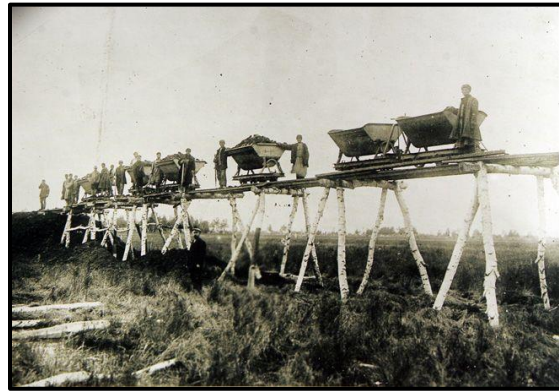


More than 32 million people make their homes in Siberia. The climate presents unique challenges to its inhabitants, especially during winter. Scientists have recorded the most variable temperatures on earth in Siberia. In the city of Verkhoyansk, temperatures have ranged from -90°F in the winter to 94°F in the summer—a span of 184 degrees. But most of the time it is cold. Temperatures drop so low that basic human activities become painful. A worker in the Siberian mining center at Norilsk explained how he and fellow workers turned up their collars and turned down the ear flaps of their fur caps so that only their eyes were visible. “Even then,” he reported, “your eyes would be so cold that you'd close one until the one you were looking with froze, and then swap over.”

Permafrost makes the ground in Siberia iron-hard. However, a heated building will thaw the permafrost. As the ground thaws, buildings sink, tilt, and eventually topple over. To prevent such problems, builders raise their structures a few feet off the ground on concrete pillars to help prolong a buildings life. In addition to building problems, when the ice begins to freeze large puddles of mud are left and mosquitos become a massive problem- one where people have to run from building to building or stay indoors! Permafrost also prevents vegetation from growing, so only small animals or plants are able to make Siberia a permanent home.

To survive in Siberia people have to deal with extreme darkness in the winter months for almost 24 hours a day. They also have to have constant access to heat and outfit machines, cars, technology, and clothing to survive the temperatures. Also interesting to note is that obtaining water is often difficult, as it can freeze so quickly. Siberia, although home to 32 million people is still sparsely populated and continues to be an extreme place to live and survive for both people and animals.

5. Trans-Siberia Railroad



At the end of the 19th Century, Siberia was much like the Wild West of the United States. It was a vast, barren land that people were often afraid of due to its stories and history. To help change the idea of Siberia, and to encourage people to move out to help populate the area, the government decided to begin the building of the Trans-Siberian Railroad. This railroad hoped to link Moscow in the West to the far east port of Vladivostok.

The project was a massive undertaking. The [distance](#) to be covered was more than 5,700 miles (twice as wide as the United States), and the tracks had to cross seven [time zones](#). Between 1891 and 1903, approximately 70,000 workers moved 77 million cubic feet of earth, cleared more than 100,000 acres of forest, and built [bridges](#) over several major rivers. Often overlooked, the Trans-Siberian Railroad is a marvel for Russia. Russian officials did not undertake this massive project simply to speed up travel. They also wanted to populate Siberia in order to profit from its many resources.

Ten years after the completion of the line in 1904, nearly five million settlers, mainly peasant farmers, had taken the railway from [European Russia](#) to settle in Siberia. As migrants streamed into Siberia, resources, such as coal, iron ore, and eventually petroleum began to flow out of Siberia. This railroad opened up new economies and created a new value for the Siberian Region.