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ENVIRONMENTAL ISSUES IN RUSSIA

- The Russian Federation possesses a unique variety and scale of geographic features, even after the collapse of the larger Soviet Union, but it faces grave problems in managing its abundant natural resources. Although the potential remains for constructive exploitation of Russia's environment, the economic and political condition of the country does not bode well for an organized effort in that direction. Meanwhile, a large percentage of Russia's population is threatened by numerous grave ecological hazards left behind by Soviet regimes as well as by the tolerance the post-Soviet government has for most of those conditions. These threats combine with other health problems, a low birthrate, and a declining life expectancy to give Russia one of the least positive demographic profiles in the world. [Source: Library of Congress, July 1996 *]
- Environmental problems in Russia include: air pollution from heavy industry, emissions of coal-fired electric plants, and transportation in major cities; industrial, municipal, and agricultural pollution of inland waterways and seacoasts; deforestation; soil erosion; soil contamination from improper application of agricultural chemicals; scattered areas of sometimes intense radioactive contamination; groundwater contamination from toxic waste; urban solid waste management; abandoned stocks of obsolete pesticides. [Source: CIA World Factbook =]
- Largely because Soviet-era industrial, energy, and agricultural policies ignored environmental protection, many sectors of Russia are considered environmentally hazardous. Most major industrial centers have poor air and water quality, and air quality in all urban centers is substandard. The Caspian and Black seas, the Sea of Azov, the Volga River, and Lake Baikal are areas of severe water pollution. Industrial nodes in the Kola Peninsula, central Siberia, and the Urals emit especially large amounts of air pollutants. Persistent, large-scale pipeline leaks have saturated the soil in large areas of Western Siberia and Chechnya with oil. [Source: Library of Congress, October 2006 **]
- Rapidly increasing numbers of vehicles, using unleaded gas, exacerbate air pollution. Agricultural soil quality is reduced by erosion and overgrazing, and unrestricted harvesting reduces natural forests. Unsafe disposal of radioactive materials pollutes coastal water, rivers, and terrestrial areas. Russia's 12 operational RBMK-type nuclear reactors are considered unsafe; some reactors (with design modifications) are not scheduled for shutdown until after 2010. Official environmental protection has declined since the early 1990s, when the public briefly supported meaningful reversal of Soviet environmental practices. In 2000 the Putin government abolished Russia's Environmental Protection Committee (which earlier had lost its ministry status) and the Federal Forest Service. After substantial delay, in 2004 Russia ratified the Kyoto Protocol on greenhouse gases, making possible the enforcement of the protocol in signatory nations. **
- There are some very polluted places in Russia. The southern districts of Krasnoarmeysk near Volgograd is one of the most polluted areas in Russia. Chemicals spewed out by a former chemical-weapons factory that now makes pesticides have collected in 50 square miles of settling ponds, some of which are bright yellow and red in color.
- Environment - international agreements: party to: Air Pollution, Air Pollution-Nitrogen Oxides, Air Pollution-Sulfur 85, Antarctic-Environmental Protocol, Antarctic-Marine Living Resources, Antarctic Seals, Antarctic Treaty, Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Wetlands, Whaling signed, but not ratified: Air Pollution-Sulfur 94. =
- Environmental problems are discussed at length in D.J. Peterson's *Troubled Lands: The Legacy of Soviet Environmental Destruction and in Ecocide in the USSR: Health and Nature under Siege*, edited by Murray Feshbach and Alfred Friendly. The "Environmental and Health Atlas of Russia," edited by Murray Feshbach, provides useful details on the health crisis and its causes. [Source: Library of Congress, July 1996 *]

Pollution and the Environment in the Soviet Era

- The Soviet and Russian environmental record has been generally dismal. Seven decades of Soviet rule left irradiated landscapes and marine ecosystems, a desiccated inland sea, befouled rivers, and toxic urban air as reminders of the consequences of seeking industrialization at any price. Russia and the other Soviet republics responded to the pressures of the long and costly Cold War by developing a defense-oriented, production-obsessed economy amid ecological devastation. Without a genuine environmental movement until its final years, the Soviet Union left in its wake an environmental catastrophe that will take decades and perhaps trillions of dollars to repair even partially. [Source: Library of Congress, July 1996 *]
- Protecting the environment was not a high priority in Communist countries. Increasing the output of heavy industry and building dams and massive irrigation projects were regarded as more important than clean air and water. Most waste-water treatment plants worked poorly; outdated metal-working factories emitted thick toxic air pollution; and the old Soviet-made nuclear power plants were unsafe. Files and figures concerning pollution were kept secret. The west didn't really find out how the

problem was in some areas until the Eastern bloc countries opened up in 1989.

- In the Soviet Union, rapid industrialization was given precedence over environmental concerns. The result was a number of environmental disasters created in a relatively short period of time. Stalin and Khrushchev were not big supporters of the environment. The environment was ravaged to such a degree during their tenure that the word “ecocide” was coined to describe it. This occurred despite the Soviet era belief that the nation's forests and resources belonged to the people, not some oil or timber company. [Source: Mike Edwards, National Geographic, August 1994]
- So little attention was paid environmental concerns for several reasons. First of all the government failed to finance expensive pollution-control devices like sulfur-dioxide-collecting scrubbers on smokestacks. Secondly, bureaucrats, under pressure to meet quotas and exceed them to advance their careers, ignored the environment costs.
- Only in the late 1980s and early 1990s was a linkage identified between the increasingly poor state of human health and the destruction of ecosystems in Russia. When that linkage was established, a word “ecocide” was coined to sum up the environmental record of the Soviet era. Gorbachev created an environment ministry.

Russian Environment After the Break Up of Soviet Union

- With the breakup of the Soviet Union in 1991, Moscow and the Russian Federation escaped direct responsibility for some of the world's worst environmental devastation because many of the Soviet disaster sites were now in other countries. Since then, however, the gravity and complexity of threats to Russia's own environment have become clear. During the first years of transition and reform, Russia's response to those conditions was sporadic and often ineffectual. [Source: Library of Congress, July 1996 *]
- The extent of Russian's environmental problems became clear only gradually during the 1990s. Among the most serious hazards in Russia are pollution of ground water and bodies of water in most of European Russia; air pollution from the venting of unprocessed industrial by-products; large concentrations of waste chemicals from industry and agriculture; and actual and potential radiological pollution from civilian and military nuclear installations. In the 1990s, the largely broke Russia and the former Soviet state governments had little money or political will to tackle the enormous environmental problems they faced.
- After the collapse of the Soviet Union, the environment was not a high priority as people struggled to survive and feared losing their jobs, which in some cases were connected with polluting industries. Democracy, the profit motive and survival is some cases made Russia's environmental problems worse. Putin seem to have been guided by business and political concerns not environmental ones despite his highly visible outdoor fishing trips and efforts to help Siberian tigers. One Russian environmentalist told the New York Times, “In the new Russia, short-term economic desires won over the country's long term interests. Business dropped even the appearance that it is obeying the laws of conservation.” A businessman in Irkutsk told the New York Times, “The environment is not even second priority. It is close to last.

Major Environmental Problems in Russia

- Dangerous environmental conditions came to the attention of the public in the Soviet Union under the glasnost policy of the regime of Mikhail S. Gorbachev (in office 1985-91), which liberated the exchange of information in the late 1980s. The three situations that gripped public attention were the April 1986 nuclear explosion at the Chernobyl' Nuclear Power Station in Ukraine, the long-term and ongoing desiccation of the Aral Sea between Uzbekistan and Kazakstan, and the irradiation of northern Kazakstan by the Semipalatinsk (present-day Semey) nuclear testing site. The overall cost of rectifying these three disasters is staggering, dwarfing the cost of cleanups elsewhere, such as the superfund campaign to eliminate toxic waste sites in the United States. By the time the Soviet Union dissolved in 1991, such conditions had become symbols of that system's disregard for the quality of the environment. [Source: Library of Congress, July 1996 *]
- Since 1990 Russian experts have added to the list the following less spectacular but equally threatening environmental crises: the Dnepropetrovsk-Donets and Kuznets coal-mining and metallurgical centers, which have severely polluted air and water and vast areas of decimated landscape; the Urals industrial region, a strip of manufacturing cities that follows the southern Urals from Perm' in the north to Magnitogorsk near the Kazak border (an area with severe air and water pollution as well as radioactive contamination near the city of Kyshtym); the Kola Peninsula in the far northwest, where nonferrous mining and metallurgical operations, centered on the region's nickel reserves, have created air pollution that drifts westward across northern Scandinavia; the Republic of Kalmykia, where faulty agricultural practices have produced soil erosion, desertification, and chemical contamination; and the Moscow area, which suffers from high levels of industrial and vehicular air pollution and improper disposal of low-level radioactive waste. The experts also named five areas of severe water pollution: the Black Sea, the Caspian Sea, the Sea of Azov north of the Black Sea, the Volga River, and Lake Baikal.*
- Each of Russia's natural zones has suffered degradation of specific kinds. In the tundra, the greatest damage stems from extraction and transportation of mineral resources by crude techniques. In delicate tundra habitats, oil spills, leaks in natural gas pipelines, and the flaring of natural gas destroy northern marshland ecosystems, which take many years to purify naturally. Also endangered are reindeer grazing lands, upon which indigenous peoples traditionally have depended for their livelihood. In the permafrost zones that constitute about 40 percent of Russia's territory, lower air, water, and ground temperatures slow natural self-cleansing processes that mitigate contamination in warmer regions, magnifying the impact of every spill and leak.*
- In the taiga, or forest, zone, the overcutting of trees poses the greatest threat, particularly in northern European Russia, the Urals, and the Angara Basin in south-central Siberia. Uncontrolled mining operations constitute the second major source of damage in the taiga. In the broad-leafed forest zone, irrational land use has caused soil erosion on a huge scale. Urbanization and air and water pollution also are problems.*
- The forest-steppe and steppe regions are subjected to soil exhaustion, loss of humus, soil compacting, and erosion, creating an extremely serious ecological situation. The soil fertility of Russia's celebrated black-earth (chernozem) region has deteriorated significantly in the postwar period. Overgrazing is the main problem in the pasturage regions of the Russian steppe and has severely affected the Republic of Kalmykia in southwestern Russia and the region east of Lake Baikal. In Russia's limited semiarid and arid territories, poorly designed irrigation and drainage systems have caused salinization, pollution, and contamination of surface and underground water, but not to the degree that these problems exist in Uzbekistan, Turkmenistan, and Kazakstan.*

Toxins and the Human Costs of Pollution

- About 13 percent of the soil tested in the former Soviet Union in the 1990s was contaminated with heavy metals, oil, pesticides and other harmful substances. According to one study, the average person at that time consumed 28 kilograms of toxic chemicals in food grown in the Soviet Union by the time he or she dies.
- Two-thirds of the heavy metal and pollutants— such as cadmium and mercury—detected in the atmosphere in the Arctic originate from Russian smelting and metal process factories, such as those in the Kola peninsula and around the city of Norilsk.

- In the 2000s, Russia still produced polychlorinated biphenyls (PCBs), high toxic chemicals banned in the United States and other industrialized countries years ago, to make transformers. Because it lacked the funds to switch to alternatives, Russia planned to keep producing PCBs until 2005 and not destroy its last stocks until 2020.
- Sinister signs of pollution in the former U.S.S.R. include clusters of children born in the Moscow suburbs with the same birth defect (much of their left arm is missing); a young girl in Kiev with horrid-looking green splotches all over her face, arms and legs; and children in the Cherkasy region of the Ukraine who are completely bald at the age of three. Families near a sulfur factory in the Volga delta realize that fumes are being blown in their direction when their noses start to bleed. "We all feel sick" and "the kids get dizzy" people there say. [Source: Mike Edwards, National Geographic, August 1994<->]
- In the city of Oskemen, Kazakhstan, the home of a lead-zinc smelter, 40 percent of the children are chronically ill and the average lifespan is only 55, ten years below the rest of the nation. A chemical analysis of the city and its people revealed: 1) "the whole population was laced with lead; 2) lead and zinc are "in the soil, in the cucumbers of home gardens, in water, in air, in mother's milk." 3) Other poisons such as arsenic, mercury and cadmium are also present. 4) Immune system abnormalities "afflict 58 percent of the children. 5) Chromosome damages has been discovered in over half of the people sampled. [Source: Mike Edwards, National Geographic, August 1994]

Unnecessary Pollution

- Eugene Linden wrote in Time: "The perverse genius of the Soviet system was its ability to maximize the problems associated with modern industrial societies without producing many of the benefits."
- Waste was a serious problem. So much natural gas is burned in the oil-rich regions of Siberia that cosmonauts have said the glow is brighter than the light of Manhattan. Western experts claimed that 500 million cubic feet of natural gas was flared each year in the 1990s, more than the annual consumption rate of China at that time. [Source: Mike Edwards, National Geographic, August 1994]
- Some factories were built so quickly and carelessly, and with so little regard to the people that lived around it, that power shortages and shutdowns ensued because no electrical generating plant was built for the factory. Few areas have sewage treatment facilities and entire forests have been devastated by acid rain and toxic metals produced by nickel and cobalt smelters. City water has a funny taste because strong chemicals are used to counteract the effects of large amounts of pesticides and manure draining off of farmers' fields into reservoirs. In the 1990s exhaust escaped from Moscow's 1.3 million vehicles largely unmolested because hardly any of them had exhaust-cleaning devices. [Source: Mike Edwards, National Geographic, August 1994]

Air Pollution in Russia

- Most major industrial centers have poor air and water quality, and air quality in all urban centers is substandard. Industrial nodes in the Kola Peninsula, central Siberia, and the Urals emit especially large amounts of air pollutants. Rapidly increasing numbers of vehicles, using unleaded gas, exacerbate air pollution.
- Forty-four percent of Russians live in 120 cities with air pollution levels that are five times higher than what is acceptable according to government standards. The air pollution is so bad in 13 Russian cities that the health ministry has advised people it is unwise to go outside. It is estimated that about 14,000 Russians a year die from air pollution.
- Although reductions in industrial production caused air quality indexes to improve somewhat in the 1990s, Russia's air still rates among the most polluted in the world. According to one estimate, only 15 percent of the urban population breathes air that is not harmful. Experts fear that a return to full industrial production will mean even more dangerous levels of air pollution given Russia's current inefficient pollution control technology. Of the 43.8 million tons of pollutants discharged into the open air in 1993, about 18,000 industrial enterprises generated an estimated 24.8 million tons. Vehicle emissions added 19 million tons. [Source: Library of Congress, July 1996 *]
- In the early 1990s, Russia's Hydrometeorological Service, which monitors air quality, reported that 231 out of 292 cities exceeded maximum permissible concentrations (MPCs) for particulate matter, sulfur dioxide, nitrogen oxides, or carbon monoxide. Pollution levels in eighty-six cities exceeded MPCs by a factor of ten. The most polluted cities are centers of heavy industry (ferrous and nonferrous metallurgy, petroleum refining, chemicals, and pulp production). Not surprisingly, the largest industrial cities head the list. In European Russia, these are Moscow and St. Petersburg; the Ural manufacturing centers of Yekaterinburg, Nizhny Tagil, Magnitogorsk, and Ufa; and Astrakhan', Samara, and Volgograd on the lower Volga. In Asian Russia, the heaviest air pollution is in Omsk and Novokuznetsk in southwestern Siberia, Irkutsk on Lake Baikal, the Noril'sk industrial center in northwestern Siberia, and Khabarovsk in the Far East. Levels of airborne sulfur, nitrogen, and lead remain high.*
- Most vehicles in Russia continue to burn leaded fuel. In the early 1990s, motor vehicles contributed about one-third of total hazardous emissions in urban and industrial areas. Throughout the Soviet period and into the 1990s, trucks were the greatest vehicular polluters because privately owned vehicles were relatively scarce. As Russia adopts the culture of the privately owned vehicle, however, it is likely that transportation will increase its share of total emissions.*
- Pollution has declined in some places because of a drop in fuel consumption and industrial output. The air is somewhat cleaner than it was in the Soviet era because so many factories have closed down. However many factories are obsolete, producing more pollution than factories of the same size in the West.

Russian Factories and Pollution


- The Norilsk nickel processing area in central Siberia is the world's largest single source of sulphur pollution. The smelters of Norilsk may be the largest source of air pollution from a single source. Each year two million tons of sulfur and a variety of heavy metals and other poisons are released into the atmosphere.
- Describing Norilsk, the New York Times reported, "Clouds of soot from the smelters mix with snow to shroud the terrain in a thick layer of gritty black slime that sticks to pedestrians' clothing and the fur of pets...[In the summer] smoggy haze from the melting permafrost breeds unbearable humidity and giant mosquitos."
- The city of Karabash is called the "Black Spot of the Planet." One of the most polluted places in the world, it is the home of the 90-year-old Karabash Copper Smelting works, which was closed down in 1987 but then reopened because people were desperate for jobs. People live among 45-foot-high piles of industrial waste and the air is sometimes so acrid it stings the eyes. More than two thirds of the children suffer from lead, arsenic or cadmium poisoning and studies have shown high incidence of congenital defects, central nervous system disorders, cancer and other major diseases.
- Krasnouralsk in the Ural Mountains is the home of another huge copper smelter. Children here have high levels of lead in their blood, which may lead to brain damage and behavior problems, and chronic respiratory illnesses. The smelters use equipment made in 1932 that releases high levels of lead and poisonous gases.

Image Sources:

Text Sources: New York Times, Washington Post, Los Angeles Times, Times of London, Lonely Planet Guides, Library of Congress, U.S. government, Compton's Encyclopedia, The Guardian, National Geographic, Smithsonian magazine, The New Yorker, Time, Newsweek, Reuters, AP, AFP, Wall Street Journal, The Atlantic Monthly, The Economist, Foreign Policy, Wikipedia, BBC, CNN, and various books, websites and other publications.


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