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Ecocide in the USSR: Health and Nature under Siege

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European nuclear deterrent. On 26 July 1993, the Franco-British Joint Commission on Nuclear Policy and Doctrine became a permanent organization. With the rebirth of the Anglo-French *Entente Cordiale*, the Anglo-French nuclear deterrents have collectively the potential to alter the strategic calculus, and not only in Europe. This development alone justifies the inclusion of British and French deterrents together in the same volume. As the U.S. and Russian nuclear weapons arsenals are reduced over the next decade, the British and French deterrents will attain greater geostrategic significance.

Writing in the *Armed Forces Journal* over a decade ago, Anthony Cordesman observed that French nuclear deterrence doctrine was premised upon a "'nuclear trigger force' policy that relies for deterrence on its ability to trigger a theatre wide, or world-wide nuclear conflict . . . ." Since the French Force de Frappe was and is strategically inferior to the British deterrent, then it follows that Britain also commands a "nuclear trigger force." Both nations, then, have the capability to affect unilaterally the strategic balance, albeit that France's ability is not in any way equivalent to that of the United Kingdom.

With reference to China, however, no such claims can be made. In their evaluation of Chinese nuclear weapons, the authors have rescued a hitherto obscure topic from even more obscure sources. Although they have included much data and photographs of rockets and aircraft, their section on China could have been left to a study of lesser nuclear powers such as India; China's nuclear capability cannot really be compared with either that of France or Great Britain. Nevertheless, the data on China will provide an excellent starting point for further research into its nuclear weapons program.

The book's only flaw, if flaw it is, relates to the size of the introductory chapter. It would have been more helpful to have a larger introductory chapter and also a concluding chapter that dealt with the post–Cold War world. These observations aside, Norris and his colleagues have approached their subject without polemics and in so comprehensive a manner that their efforts will set the standard for similar works in the future. A great debt is owed to the authors for their magnificent achievement.

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Feshbach, Murray and Friendly, Alfred, Jr. *Ecocide in the USSR: Health and Nature under Siege*. New York: Basic Books, 1992. 376pp. $24

"I have seen the future, and it works!" declared journalist Lincoln Steffens after his visit to the Soviet Union in the early 1930s, becoming thereby forever a symbol of liberal reformers dazzled and duped by the false promises of communism. For what Steffens observed turned out to represent anything but the future, even for the Soviet Union—and as the authors of this seminal work demonstrate, it most certainly did not work. Page after page, chapter after chapter, Feshbach and Friendly present the

dismal statistics. Originally the research for this book was conducted by Feshbach for the Office of Net Assessment, Department of Defense. The authors have extrapolated much of their information from the incomplete, cryptic, and deliberately misleading data of the pre-perestroika period, and even more has been culled from the flood of information released after Mikhail Gorbachev recognized that the only hope for reform lay in allowing public access to the truth, however damning.

And damning it is. Murray Feshbach, whose exhaustive demographic research of over more than twenty years earned him a unique credibility, even among Soviet officials, and Alfred Friendly, Jr., once a Moscow bureau chief for *Newsweek*, have collaborated to forge a mountain of raw data into a readable, interpretive work that is destined to remain a classic. *Ecocide in the USSR* could well serve as a handbook to guide the efforts of those in Russia and other former Soviet republics who face the monumental task of cleaning up the ecological catastrophe they inherited.

The picture the authors paint is almost uniformly bleak. In 1985 the life expectancy of a fifty-year-old Soviet male was lower than in 1939; in 1990 life expectancy of Moscow residents was ten years below what it had been in 1970. The Soviet Union was the only industrialized nation whose infant mortality rate rose in the 1970s and 1980s, and a senior officer reported in mid-1991 that no more than 48 percent of citizens were healthy enough to be drafted. The human implications aside, such statistics have an economic cost. The authors calculate that in 1989 losses from illness equaled 3 percent of total Soviet output (seven billion rubles in sick pay and twenty billion in lost production).

In some measure, the chapter titles tell the story. "Harvests of Neglect" describes the devastating impact of an agricultural policy that ignored human and environmental concerns and sought to maximize production through forced collectivization, mechanization, and excessive use of fertilizers and pesticides. The result was a system in which a Soviet farmer by 1990s might produce enough food for five people, while his American counterpart fed fifty. Soviet agriculture was notorious for its wastage; in 1989 thirty million tons of grain—14 percent of the total crop—rotted in the fields or soon after harvest.

In misguided efforts to correct these deficiencies, the centralized system ruthlessly exploited both human and natural resources. Vast irrigation schemes eroded arable land or turned it into useless bogs. Fertilizers and pesticides poisoned the soil and waterways. A chapter entitled "A Sea of Troubles" documents how draconian measures imposed by Moscow resulted in the virtual death of the Aral Sea, while the cotton production that was supposed to benefit, fell. Only barely, and at the last moment, were environmentalists able to block a desperate attempt to amend the results of earlier policies by diverting the flow of Siberian rivers to the south—a massive tampering with nature that would have had incalculable and potentially disastrous consequences.

Not surprisingly, health problems among the rural population soared over

the years, but the government did little to alleviate them. In 1988 the Minister of Health revealed that nearly two-thirds of rural district hospitals lacked *hot water*, and 17 percent had *no water at all*. Given such conditions, it is not surprising that the Soviet Union witnessed a steady migration of rural dwellers to the cities, where overcrowding compounded a different set of problems.

Indeed, Soviet agricultural mismanagement had an equally devastating industrial counterpart. In the chapter "Dark, Satanic Mills," the authors chronicle the effects of a seventy-year policy of expanding heavy industry regardless of costs to the population and environment. In the city of Nizhny Tagil, for example, where the principal industry is metallurgy, decades of unrestricted efforts to expand production created an environment where in 1990 each inhabitant breathed in 1.5 *tons* of harmful pollutants per year, not counting those from vehicle emissions. The effects on the health of the population were predictable. In 1987 the incidence of first-time diagnoses of cancer in the Soviet Union was 57 percent higher than the U.S. rate.

Such hellish conditions were not, of course, intended or expected by the pioneers of socialism, whose promises of full employment, housing for all, universal health care, and equal access to education held enormous appeal. Indeed, many visitors from today's world, if stripped of hindsight, might look no less favorably than Lincoln Steffens did upon the ideals of the Soviet state of the early 1930s, set against a backdrop of economic uncertainty, nationalist conflict, and incipient fascism.

So where did the Soviet system go wrong? The authors attribute its downfall to the very fervor with which it pursued its goals: "The utopian quest became a blinding compulsion . . . that justified destruction and deceit on a huge scale in the name of progress toward an earthly paradise. . . . Like other assaults on human dignity and hope—mass arrests and deportations, man-made famine—the indifference to pollution and human health is a consequence of the Revolution. Ecocide in the USSR stems from the force, not the failure, of utopian ambitions."

Feshbach and Friendly also cite the mechanism by which Soviet communism sought to implement its philosophy. "For the environment, the central planning system became Frankenstein's monster. . . . The plan and its fulfillment became engines of destruction geared to consume, not to conserve, the natural wealth and human strength of the Soviet Union."

One of the few bright spots in this dreary picture is the remarkable response of the traditionally passive public as Soviet health and ecological problems became known. The authors cite the Chernobyl disaster of April 1986 as the galvanizing event that forced the regime, after attempting a coverup, to allow full and open debate of the disaster and related environmental problems. In 1988 and 1989, environmental protest turned into a political force throughout the Soviet Union, sparking calls for political and economic reform. In non-Russian republics, it fused with ethnic

passion and became a protest against Russian exploitation.

Despite the political revolution that evolved at least in part from the environmental movement and subsequently swept away the Soviet state, the authors offer a sober assessment of the future. They note that once in power, environmentalists have discovered obstacles of unexpected magnitude. Even under the best of circumstances, cleanup would require decades and cost trillions of rubles. (The authors note that the U.S. spent $1.5 trillion on environmental cleanup between 1972 and 1988; a comparable Russian effort would cost at least 255 billion in 1991 rubles for pollution abatement alone.) Given the current economic plight of Russia and its sister republics, such expenditures are out of the question, and simply shutting down polluters is politically untenable during a time of rising unemployment and inflated living costs. Dramatic improvement is therefore not in sight, despite encouraging developments at the grassroots level.

What are the implications for the U.S.? In a chapter entitled "Crippled Giant," the authors discuss the impact of health and environmental problems on the military capabilities of our former adversary. By effectively cutting the conscript pool in half and weakening the morale and readiness of existing forces, those problems significantly undermined the Soviet threat; a resurgent, nationalist Russia would face similar liabilities.

Nonetheless, the massive problems portrayed here should be no cause for satisfaction, even to Russophobes. These catastrophes complicate Russia's path to economic reform and political democracy, considerations of major import for the West. They will affect the operations and profitability of Western-financed businesses, particularly in the manufacturing and extractive sectors. Further, in today's global economy, the long-term costs of repairing the damage are likely to extend well beyond the borders of the former USSR. It is small compensation to contemplate the irony that the greatest wounds inflicted by the Soviet empire turned out to be upon its own resources and people.

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Gleick, James. *Genius: The Life and Science of Richard Feynman.* New York: Random House, 1992. 531pp. $34.50

James Gleick has done it again. The author of the award-winning *Chaos: The Making of a New Science* has again combined expository power with his appreciation for the excitement of scientific endeavor and a sensitive understanding of the creative process, to present a thoughtful biography. This book is not just a recitation of the accomplishments of Richard Feynman and his colleagues in mathematical physics; it is a series of essays about creative genius, the nature of science and of scientific proof, and on the intersections of fundamental science and philosophy. Gleick shows the many manifestations of Feynman's genius, though he can give no "recipe" for that quality.