

7

The Environmental Movement and Environmental Politics

An ecologist is a healthy guy in boots who lies behind a knoll and through binoculars watches a squirrel eat nuts. We can manage quite well without these bums.

—Nikita S. Khrushchev

The people's growing ecological environmental awareness is one of the manifestations of the democratization of society and a key factor of perestroika. . . .

We must welcome this in every way possible.

—Mikhail Gorbachev

Like a steady wind fanning a forest fire, the revelations of eco-glasnost in the 1980s fed the rage of a public long suppressed by the communist regime. In response to the state's inaction, citizens formed hundreds of environmental organizations to take matters into their own hands. The political impact of environmental interest groups has been augmented by the demise of centralized authority and the natural affinity between environmental and ethnic issues in the former Soviet context. As a result, environmental groups have evolved into an important catalyst for change in the Soviet and post-Soviet era. In a society where the state once attempted to organize and control virtually all social activities, the rapid mobilization of independent nongovernmental organizations (NGOs) is remarkable and indicates the rise of a "civil society" in the former Soviet Union.

Nevertheless, numerous obstacles remain: The dead hand of bureaucracy discourages citizens' initiatives, and authorities, threatened by the rise of independent and powerful voices, often put up obstacles to their newfound challengers. Moreover, poor communications facilities thwart interaction among groups, and their relative poverty prevents their undertaking any large-scale programs. Finally, the stresses of economic reform and upheaval draw attention away from ecology. The effect is that environmental groups have been slow to evolve beyond movements of opposition into the types of grassroots self-help organizations that have been so effective at promoting local development and environmental protection in the United States, Latin America, Asia, and elsewhere around the world.

THE MAGNITUDE OF CONCERN ABOUT THE ENVIRONMENT

With the revelations of glasnost, citizens became acutely aware that environmental conditions in their neighborhoods were far from favorable. Though crude by Western standards, local public opinion polling has revealed the magnitude of concern about the environment.¹ In a 1989 USSR Goskomstat survey, 1 in 10 people surveyed said the environment was the country's most serious problem. Of twelve major problems enumerated, cleaning up the environment was listed fourth, behind food supply problems, poor housing conditions, and inflation. Surprisingly, it surpassed such pressing and visible issues as ethnic tensions, social injustice, poor healthcare, and crime.² In 1990 and 1991, official surveys reported by USSR Goskomstat revealed that almost one-half of the urban population polled considered environmental conditions in their neighborhoods to be "unsatisfactory."³ In July 1991, the Russian state statistical agency reported that of those polled in another study, three-quarters considered environmental conditions in their hometown "intolerable."⁴ In a survey conducted in the Moscow region in spring 1990, environmental degradation was ranked as the most important social problem. Of those polled, 98.1 percent rated the issue "important" or "very important." Less pressing issues, by comparison, were crime (94.7 percent), food shortages (94.4 percent), and consumer goods shortages (93.4 percent).⁵ In a 1989 survey conducted in Ukraine, environmental problems were "the main concern" of 26 percent of the population, behind economic problems (44 percent) but well ahead of political and cultural issues.⁶

Of all environmental issues, citizens are most strongly antinuclear; so powerful is their aversion, that the mood aptly has been labeled

“radiophobia.” Two nonbinding, unofficial referendums conducted in 1990 illustrate the level of sentiment against nuclear power.⁷ In February, voters in the small Ural Mountains city of Neftekamsk went to the polls to decide the fate of the Bashkir Atomic Energy Station, located 30 kilometers away. The referendum, organized by the Neftekamsk (population 109,000) city government along the lines of a regular election, attracted an 80 percent turnout of voters—a stunning 99 percent of whom voted to halt construction of the plant immediately.⁸ Three months later in the Russian city of Voronezh (population 895,000), a local group calling itself Ecological Initiative prodded the city government into holding a referendum on the fate of a nuclear-powered citywide heating system. Of the 82 percent of the voting-age population who went to the polls, 96 percent turned down the scheme.⁹

The environmental movement has garnered great respect from the public, in part as a result of its efforts to discover the truth about ecological conditions. In the spring 1990 survey of Muscovites previously mentioned, the Green movement had earned the trust of over 54 percent of the population. Only the Russian Orthodox Church (64 percent) and the military (56 percent) scored better. Far down on the list was the CPSU (39 percent), the official trade unions (37 percent), and the government (28 percent).¹⁰ Anatolii Panov, vice-president of the Zelenyi Svit (Green World) environmental association, claimed his organization enjoyed the highest trust rating of any group in Ukraine in 1991.¹¹

THE RESPONSE OF THE GOVERNMENT TO THE ENVIRONMENTAL MOVEMENT

The best way to gauge the strength of the environmental movement is to examine its impact on the government policy process. Responding to the public's concern, many politicians make a point of showing their awareness of environmental problems and their desire to resolve them. Officials and politicians frequently visit ecological hot spots to render some measure of political first aid. For example, in August 1990, Boris Yeltsin, recently elected chairman of the Supreme Soviet in the Russian Federation, took advantage of this traditionally quiet period in Soviet politics to make a three-week tour of Siberia and the Far East; he wanted to assess environmental conditions. “I received a very strong sense of colossal problems on my trip,” he told Radio Moscow.¹² One year later, campaigning for the Russian presidency, Yeltsin again made a point of visiting ecological hot spots such as Chelyabinsk oblast and Sakhalin Island.

Obsessed with bolstering its public image, even the KGB took pains to demonstrate its environmental awareness. In October 1990, the Soviet news agency TASS noted that the KGB had prepared a report to challenge the military's plans to use a nuclear device to create an underground storage facility for high-level radioactive wastes near the Ural Mountains city of Chelyabinsk.¹³ On the occasion of the agency's seventieth anniversary two months later, Soviet television screened a program illustrating the KGB's environmental consciousness. The agency was so bold as to claim partial responsibility for the government's decision in 1986 to cancel the Siberian rivers diversion project. Although conceding the impact of scientific and cultural figures working in opposition to the scheme, Major-General Eduard N. Yakovlev of the KGB's analytical department added: "We spoke from an objective, unbiased position."¹⁴

Local as well as national officials often turn to environmental groups for expertise and input. Sometimes the relationship goes beyond this; many environmental officials consider the public a helpful ally in bureaucratic battles against industry. Thus, although Ukrainian industries were required to submit an environmental impact statement (EIS) for development projects, they also were able to pressure the Ukrainian environment ministry to waive its standards and to accept their plans. According to one official at the environment agency, independent EISs conducted by environmental groups along with public pressure were welcomed as an aid to the beleaguered agency in enforcing its regulations.¹⁵ A deputy of the Latvian environmental agency told a local paper that his agency "must make a major effort to consolidate the various movements and organizations of the Greens."¹⁶ The general director of Moldova's environmental agency went much further: "We will utterly and completely support any movement to protect the environment, including through rallies, strikes and picket lines." Said I. I. Deyu, formerly a professor at Moldova State University, "We are trying to do it in a way that people trust us."¹⁷

Evidence of a growing alliance between government environmental officials and the environmental movement also can be seen in the plethora of ecology-oriented newspapers that have sprung up. By jointly publishing newspapers, environmental groups can gain access to state publishing facilities, and officials seek to tap into the popularity and respect earned by these organizations. In 1991, the Moldovan environmental agency announced that it was publishing an ecological newspaper, *Abe natura*, jointly with the Moldovan Green movement.¹⁸ The Kurgan oblast Committee for the Protection of Nature joined with the local branch of the All-Russian Society for the Protection of Nature to publish *Ekologicheskaya gazeta* (The Ecological Newspaper). The RSFSR environ-

mental agency teamed up with the Ekopress information and publishing association to put out *Zelenyi mir* (Green World).

ENVIRONMENTALISM STRIKES THE ECONOMY

Rising protests in the 1980s had a strong impact on the region's economy, as environmentalists began to demand a rapid solution to pollution problems in their neighborhoods. In all, over 1,000 production units either were closed or had their output scaled back in 1989 for "violation of environmental protection laws," USSR Goskomstat reported (see Table 7.1).¹⁹ In the city of Moscow alone, 72 plants and production lines were closed.²⁰ A trade union leader pointed out that over 100 plants in the chemical industry were idled around the country in mid-1990 because of demands from the communities in which they were located to be "dechemicalized."²¹ In 1990, output sacrificed was projected to total 5.2 million tons of fertilizer, 951,000 tons of soda, 400,000 tons of cellulose, 387,000 tons of methanol, 500,000 tons of polymers, and over 250,000 tons of synthetic rubber, among other goods, and leading economists were worrying that the ecological movement would deal a fatal blow to the already failing economy.²² Indeed, in his report on the performance of the Soviet economy during the first quarter of 1990, USSR Goskomstat chair Vadim Kirichenko blamed a sharp downturn in economic performance, among other causes, on the closing of factories for not meeting "basic ecological demands."²³ Most of these plants were shut down only temporarily as a form of sanction, it must be pointed out, but in many cases, the closure was intended to be permanent.

TABLE 7.1 Selected plant shutdowns for violation of environmental protection regulations, 1989

<i>Enterprise (location)</i>	<i>Number of Days Closed^a</i>	<i>Reason Cited</i>
Yenakievo Metallurgical Factory (Ukraine)	178	Air pollution control equipment not started up
Dzhambul Superphosphate Factory (Kazakhstan)	128	Ineffective air pollution equipment
Azot Production Association (Novgorod, Russia)	125	Lacking air pollution control equipment
Belgorod Vitamin Kombinat (Russia)	115	Exceeded atmospheric emissions standards
Zaspensk Starch Factory (Belarus)	84	Delays in installing wastewater treatment equipment
Titan Production Association (Crimea, Ukraine)	79	Exceeded atmospheric emissions standards
Crimea Soda Factory (Ukraine)	77	Ineffective air pollution equipment, exceeded atmospheric emissions standards
Taganrog Fish Combine (Russia)	60	Delays in installing wastewater treatment equipment
Nisporeni Wine Factory (Moldova)	60	Released wastes in protected watershed

^aClosure involved only specific production unit where the environmental infraction occurred.

Source: USSR Goskomstat, *Press-vypusk*, No. 136, April 4, 1990.

Energy is one sector in which the public virtually has dictated policy. Media reports suggest that not one nuclear power plant has been safe from opposition as the public has been gripped by radiophobia. In the fallout from the Chernobyl accident, public pressure had forced the abandonment of 60 projects by January 1991, including the much-disputed Crimea, Rostov, Tatariya, and Bashkiriya atomic energy stations (AESs), and expansions at the Smolensk, Khmel'nitski, Tver (Kalinin), and Zaporozhye stations. The generating capacity of these plants was projected to total 160 million kilowatts.²⁴ The fates of numerous others remain uncertain as officials have been forced to undertake a complete reappraisal of nuclear energy development plans. As if to beat a dying horse, one week after its inauguration in the summer of 1990, the popularly elected Supreme Soviet of the Russian Federation voted to issue a moratorium on nuclear projects beginning in 1991.²⁵ One month later, the Supreme Soviet of Ukraine passed a five-year moratorium on all nuclear

projects in that republic,²⁶ and after a turbine fire at Chernobyl's power unit No. 2 in October 1991, the Ukrainian parliament voted to de-commission immediately the crippled reactor and the two other units (1 and 3) still operating on the site by 1993.²⁷

With less nuclear power on which to rely in the future, the region will have to turn more to oil, coal, gas, and hydroelectric resources. These options are limited as well, however, as environmental pressure mounts against the diversion of water and the submersion of land for hydroelectric projects and against the continued use of aging and dirty coal-fired power plants. In one of its first actions, the first democratically elected Moscow city council voted in May 1990 to scrap construction of the Severnaya station—planned to be the largest gas-fired heat and power plant in Europe.²⁸ Opponents, led by the Moscow Green Party, collected 300,000 signatures against the plant, arguing that it was not necessary. Instead, they pointed out that massive heat losses in the distribution network, estimated to average 25–40 percent, could be reduced with the improved insulation of heating pipes and the construction of small, local heat and power cogeneration facilities.²⁹ On the other hand, Vasili Selyunin, a prominent radical economist and government critic, warned: "It is not possible now to stop even one, even the tiniest, power station because of the shortage of electricity."³⁰

Unexpectedly, environmental activism has also had an effect in the area of pharmaceuticals. Much of the region's drugs are produced by the metallurgical and chemical industries—two sectors of ill ecological repute. Environmental protests halted production of pharmaceuticals at the infamous Azot (nitrogen) production enterprise in Kemerovo, at Yerevan's Nairit, and at the Kirovgrad copper smelter. In some cases, Radio Moscow reported, these plants were the only ones in the USSR producing certain essential medicines.³¹ According to USSR Minister of Health Igor Denisov, the domestic pharmaceuticals industry was able to meet 39 percent of the Soviet Union's demand for drugs in 1990, down from 52 percent five years earlier. Denisov predicted that domestic production would fall to 30 percent of demand in 1991.³²

In preparation for the Second USSR Congress of People's Deputies in December 1989, the USSR Supreme Soviet Committee on the Protection of Public Health also looked into the medicine crisis; the head of the USSR Ministry of the Medical and Microbiological Industry (Minmedprom) reported that local opposition had prevented the siting of new plants to produce pharmaceuticals, including those to produce disposable syringes, desperately needed to avoid the spread of AIDS.³³ Construction had been halted in Arkhangelsk, Kursk, and Saratov oblasts and in Novosibirsk, the Mari Autonomous Republic, Latvia, and

Uzbekistan.³⁴ Of the 36 Minmedprom pharmaceutical projects slated for the 1986–1990 plan, 21 had yet to be initiated because local forces had refused to allocate any land to the ministry.³⁵ Public opposition stemmed from Minmedprom's reputation as an inveterate polluter, an example being its petroleum-based livestock supplement operations at Kirishi, outside St. Petersburg. The labor daily *Trud* noted pessimistically that the pharmaceuticals industry was "falling apart with even greater speed" than the rest of the Soviet economy.³⁶ "Until we convince the population that our production units can be safe—and there are already some that are—we will not move the sector forward," gravely testified Minister Valerii Bykov. "'Green' extremism will not let the pharmaceuticals industry take a breath."³⁷ "We have already seen cigarette shortages," concluded *Trud*. "Should we prepare for aspirin shortages?"

ENVIRONMENTAL OPPOSITION TO THE MILITARY

Even before the demise of the Soviet Union the prestige of the military was suffering. There were retreats from Afghanistan and Eastern Europe, criticism at home, budget cuts, draft evasion, and ultimately, the collapse of the USSR. Under the Soviet regime, the military was allowed to pollute the environment egregiously by appealing to the imperative of national security. Nevertheless, in the late 1980s and early 1990s the prerogative of the military to act regardless of public opinion was checked by a growing environmental movement. The defense industry accounted for a very large share of the Soviet economy, and there were correspondingly many objects of public opposition. In 1990, for example, the defense sector came under strong criticism after the Navy was implicated in the massive death of sea life in the White Sea near Arkhangelsk and after industrial accidents at its explosives plant in Gorlovka in eastern Ukraine and at a nuclear materials facility at Ust-Kamenogorsk in eastern Kazakhstan. These and many other clashes show that public opposition to the military, especially to military activities that posed a threat to the environment, was forceful and widespread.

Speaking at an international conference on arms control in Paris in January 1989, Foreign Minister Eduard Shevardnadze announced that the USSR unilaterally would begin destroying its stocks of chemical weapons at an undisclosed facility the government was about to open. Upon hearing that a top-secret site twenty kilometers from their city was this facility, the citizens of Chapaevsk (population 97,000) were stunned. Shock quickly turned to outrage at the fact that the Ministry of Defense would dare to build the plant in their heavily populated region close to the Volga River without studying the potential impact on the environ-

ment and without the public's consent. A spontaneous and vociferous protest campaign led by the group *Initsiativa* focused on safety issues and the already severe pollution problems of the region, caused by local chemical plants. An expert commission designed to placate the protesters concluded that the plant's equipment was safe, "provided there are no accidents."³⁸

Needless to say, the community was displeased with such findings. With 60,000 signatures in hand and frequent pickets at the plant site, *Initsiativa* convinced city and oblast leaders to oppose the commencement of operations at the plant (they too were unaware of its purpose apparently) and forced Moscow to appoint another commission to study the project.³⁹ In August 1989, the commission, led by Nikolai Laverov, chairman of the USSR State Committee of Science and Technology, recommended against opening the 50-million-ruble facility, citing public unrest and the existing pollution problems in the region. The government finally agreed and decided to convert the plant to a training center.⁴⁰ Soviet officials, however, were left with the problem of finding the means to comply with the treaty signed in June 1990 by Presidents Gorbachev and Bush in which they pledged to begin destroying stocks of chemical weapons by 1993.⁴¹

In April 1990, Radio Kiev announced that a government commission headed by academician Yevgenii Velikhov had recommended scrapping a ballistic-missile early warning station near the town of Mukachevo in western Ukraine.⁴² The radar, under construction since 1985 at a cost of 100 million rubles, was one of nine large, phased-array radar systems being built across the Soviet Union and expected to be operational by the mid-1990s. For two years, local residents protested the radar's construction on grounds of the health hazard from electromagnetic radiation and because of the large volume of water the installation would use for its cooling systems; 700,000 citizens signed a petition calling for its closure. In January 1990, the movement gained strength when the oblast soviet backed the public's demands. Nevertheless, residents complained that the military had accelerated construction, with work proceeding at the site day and night. Though the Velikhov commission sided with the environmentalists, stating that their concerns were "well founded," the military's construction brigades pressed on throughout the spring. Frustrated by the military's refusal to comply with its order, the oblast soviet posted police officers at the site to prevent the delivery of construction materials. In August, Moscow finally acceded to the local demands and ordered the dismantling of the site and the restoration of the territory to its original state.⁴³

THE CASE OF NUCLEAR WEAPONS TESTING AT SEMIPALATINSK

The greatest impact of the environmental movement has been on the military's nuclear weapons testing program at Semipalatinsk and Novaya Zemlya. The Soviet Union conducted its first test of an atomic device at Semipalatinsk on August 29, 1949. Since then, over 300 nuclear explosions are known to have been conducted at the site, located on the hilly steppe of eastern Kazakhstan. Before the signing of the Limited Test Ban Treaty in 1963, almost all tests at Semipalatinsk were conducted aboveground.⁴⁴ Although the military routinely evacuated residents from the area before a test (albeit with little warning or explanation), many people have spoken of witnessing the blinding flashes and mushroom clouds. After a test, soldiers would pass through the villages to repair damage resulting from tremors—some settlements were located as little as thirty kilometers from the seat of the explosion.⁴⁵ A local teacher, a Volga German exiled to Kazakhstan on Stalin's orders during World War II, told a correspondent of *The European*:

When a test was about to be carried out, we were driven from our houses to the riverside, even at night, and told to push wool into our ears. The light was so bright you could see a needle on the ground. I saw the yellow and red mushroom clouds and felt the earthquakes. Once my father was sitting near a window and the window smashed and cut his face. During the last blast aboveground, in 1963, the door flew off the oven and fire was thrown into the room, almost blinding my younger brother. On another occasion, the roof fell in and crushed to death a young woman.⁴⁶

Atmospheric testing stopped in 1963, and the 1974 Threshold Test Ban Treaty limited the explosive yield of the nuclear explosions to 150 kilotons. Nevertheless, the frequency of tests remained steady; according to research by the National Resources Defense Council, Semipalatinsk averaged about one blast per month between the mid-1960s and late 1980s.⁴⁷

By the 1990s, half a million people were living in the immediate vicinity of the Semipalatinsk test range. In response to public demands, a government commission was dispatched to the region to examine public health conditions as well as to survey medical archives. The commission determined that as many as 10,000 people living in several regions adjacent to the test range had been contaminated during the course of atmospheric tests; the researchers also noted that indicators of health in the region had shown a decline during the period of testing but since then had recovered to the national average.⁴⁸ Numerous anecdotal reports,

however, speak of continuing high rates of cancer, miscarriage, infant mortality, hair loss, skin disorders, depression, and suicide among the region's population, conditions many doctors have labeled collectively "Semipalatinsk AIDS."⁴⁹ *Izvestiya* compared problems at Semipalatinsk to the disasters at Chernobyl and the Aral Sea and noted that the average life span in the region declined by three years between 1970 and 1990.⁵⁰ Comparisons in the type and frequency of cancers have been drawn to the epidemiology of the populations of Hiroshima and Nagasaki.⁵¹

The Soviet government impeded thorough epidemiological studies of the region by maintaining tight control over health data. Military and government officials countered the allegations of abnormal health conditions by repeatedly stating that radiation levels in the region were normal and that any health problems there could not be attributed to radiation from the test range.⁵² After visiting the site as a member of a USSR Supreme Soviet delegation organized by the conservative Soyuz faction, Colonel Nikolai Petrushenko stated that the area was "absolutely safe," and a Soviet defense ministry spokesman stated categorically that "no local residents had suffered from radiation sickness as a result of a nuclear test."⁵³ Ultimately, linking the region's public health problems to nuclear testing at Semipalatinsk may prove impossible, given the traditionally poor monitoring and recordkeeping practices by Soviet officials. On this point, the government commission asserted that persistent health problems could be traced to the region's poor air quality and to ground-water contamination by pesticides and by runoff from livestock farms.

An environmental lobby was slow to appear in Central Asia, but as the case of the Nevada-Semipalatinsk antinuclear testing movement illustrates, once it was organized, public interest exploded. This opposition organization finally came into being after an accident at the site in which gas was vented during a test in February 1989. Within a year, the organization, whose name was intended to stress the international ramifications of nuclear testing, had collected over 1 million signatures calling for the Semipalatinsk test site to be closed and had enlisted as its leader the popular Kazakh poet and member of the USSR Supreme Soviet, Olzhas Suleimenov. The group's primary tactic was to stage large street demonstrations in various cities and towns around the republic, including Alma-Ata, the capital. The Nevada-Semipalatinsk movement also maintained close contacts with Moscow through other sympathetic parliamentarians, such as Yurii Shcherbak, and received favorable press coverage, most notably in the government newspaper *Izvestiya*. By 1991, Nevada-Semipalatinsk had become the largest and most influential public organization in Kazakhstan, drawing its support from a broad range of people—from the intelligentsia to the working class.⁵⁴

In response to the growing pressure, Soviet Prime Minister Nikolai Ryzhkov announced in November 1989 that further tests at the site would be halted until the end of that year. One week later, the USSR Supreme Soviet called for a study on closure of the range as part of its resolution of emergency environmental protection measures.⁵⁵ The moratorium was extended until the end of March 1990, when Deputy Prime Minister Igor' Belousov told the USSR Supreme Soviet that the government had decided to postpone indefinitely all tests at Semipalatinsk until "new measures" were taken to safeguard the people living there. By that time, the government had also made known its intent ultimately to close the site.⁵⁶

The defense ministry countered with a proposal to conduct up to 27 tests during "a transitional period" before closing the site permanently in 1993.⁵⁷ Local opposition, however, was intent on thwarting these plans. Soon after it convened, the first democratically elected Kazakh Supreme Soviet called on Moscow to stop nuclear testing and in October 1990 banned testing outright in the republic as part of its declaration of state sovereignty. The parliament reiterated its call in December 1990, with added demands that Moscow improve social services in the region and compensate victims of the tests.⁵⁸ The Semipalatinsk city and Karaganda oblast governments likewise asked Moscow to end testing, and in October 1990 the Semipalatinsk oblast soviet banned further testing at the range.⁵⁹ The mayor of Kurchatov, a once-secret city of 12,000 residents, most of whom worked at the test range, countered in the military press that "the situation around the test site is such that the continuation of tests appears to be out of the question."⁶⁰

The conflict over Semipalatinsk climaxed in 1991. By spring, the Ministry of Defense and its ally, the USSR Ministry of Atomic Power and Industry, had reduced their demand to three tests: two 20- and one 0.05-kiloton explosion to occur before closing the site permanently in 1992.⁶¹ Apparently bowing to pressure of the military, Mikhail Gorbachev announced his support of the tests during a June visit to Kazakhstan. Kazakh President Nursultan Nazarbaev refrained from taking a prominent stand in the debate as he attempted to balance the opposing pressures coming from both Moscow and from his constituency in what Vladimir Yakimets, science adviser to Olzhas Suleimenov, described as "just a terrible struggle."⁶² For their part, local officials raised the pressure on Moscow by demanding compensation payments to those living in the area around the test site. According to Yakimets, the USSR Ministry of Defense originally offered Kazakhstan 250,000 rubles for the three explosions to be carried out in 1991. By June, the military raised the offer to 1 billion rubles, as the devices were already in the ground, and

time for preparations and for notification to the United States (according to treaty obligations) was growing short.⁶³ In July, Suleimenov reported that the military had agreed to compensation of 5 billion rubles for just two tests, or about 2,500 rubles for every inhabitant living in the three oblasts bordering the test site.⁶⁴ However, no payments were ever made: With the failed coup attempt of August 19–21, 1991, the closure of Semipalatinsk became a reality. On August 29—the day an explosion was scheduled to have taken place—President Nazarbaev issued a decree formally closing the site. The USSR Ministry of Defense in Moscow agreed.⁶⁵

The closure of Semipalatinsk would not necessarily have represented a major setback for the military's nuclear weapons testing program. Resources could be shifted to Novaya Zemlya, an archipelago along the eastern edge of the Barents Sea, which from 1958 to 1963 served as the primary Soviet test facility. Between 1954 and the signing of the Limited Test Ban Treaty in 1963, many tests of very large-yield weapons were conducted aboveground and underwater at Novaya Zemlya. After 1964, the site served as the USSR's secondary test range and was used for its largest nuclear weapons tests. According to Western observers, an average of 1–2 tests have been held there annually since 1965, compared with about 12 per year at Semipalatinsk.⁶⁶ After several years of silence at the site, a test was conducted at Novaya Zemlya in October 1990, probably as a result of the political troubles to the south. However, because of its remote location and harsh climate, conditions for the military at Novaya Zemlya are not as propitious as at Semipalatinsk.⁶⁷

The political climate in the north also has grown somewhat unfavorable; opposition to testing at Novaya Zemlya grew rapidly after the government's original decision to halt testing temporarily at Semipalatinsk. Several peace and environmental groups banded together to form the Novaya Zemlya–Nevada and For Novaya Zemlya movements, and the governments of Arkhangelsk oblast and the Russian Federation have expressed their opposition to testing there.⁶⁸ The Norwegian government also has weighed in with its opposition to nuclear testing in the Arctic. A decision to close the range, argued Vladimir Burakov of the Russian Peace Committee, "is no less radical than that made with regard to Semipalatinsk."⁶⁹

After the closure of Semipalatinsk, President Boris Yeltsin issued a decree in October 1991 banning testing for one year at Novaya Zemlya. To the dismay of environmentalists, however, he subsequently issued another decree claiming Russian jurisdiction over the site and granting the military the right to prepare for up to 2–4 tests per year, when and if he decided to lift the moratorium.⁷⁰ Moreover, Yeltsin chose as his minister

of atomic energy (the post responsible for Novaya Zemlya) Viktor Mikhailev, former head of the USSR's nuclear weapons program and a staunch advocate of continued weapons testing.⁷¹

THE DIVERSITY OF THE ENVIRONMENTAL MOVEMENT

Despite major successes like that at Semipalatinsk, most proenvironment groups are loosely organized, small, and often short-lived. In April 1990, the co-chairman of the Leningrad Green Party counted approximately 60 "ecological organizations" in that city, most of which had fewer than a dozen members.⁷² Environmental groups usually focus on a single issue in their own locality. As elsewhere in the world, the rallying cries are numerous, and groups span the ideological spectrum, ranging from fiercely nationalist organizations to apolitical bird-watching societies. *Sovetskaya Rossiya*, the staunchly conservative Russian newspaper, sponsored the Committee to Save the Volga, whereas the Committee to Save the Ob is based in the scientific research center of Novosibirsk. Reflecting its constituency, the latter group announced plans to conduct research and environmental impact studies on all developments threatening the Ob and Irtysh river basins.⁷³ Founded in October 1989, the Chernobyl Union, with member chapters throughout the former Soviet Union, aims to serve as a support and legal advocacy group for victims of the nuclear accident as well as the 600,000 people it estimates have participated in the cleanup operation, 50,000 of whom reportedly have become unable to work.⁷⁴

Although each group has its own eclectic agenda, many express similar principles and objectives—ecological glasnost, comprehensive environmental monitoring and assessment, public education, grassroots cleanups, and direct political action. For example, environmental NGOs often spend a large share of their resources to establish themselves as alternative and credible sources of information. Although government agencies have made major strides in bringing environmental information into the public domain, much remains hidden or unknown. "A lot of interesting information is out there," says Sheryl Belcher, coordinator of Greenpeace International's "Children of Chernobyl" project based in Kiev: "[Environmental groups] need to access it."⁷⁵ Thus, environmentalists persistently lobby for full disclosure of government data. Paradoxically, however, they and the public at large remain highly suspicious of much official data that are released, arguing that accurate data would indicate problems so severe as to be too risky politically to be made public.⁷⁶ Such a situation lies in stark contrast to that in the United States,

where environmental groups rely heavily on access to official government data through the Freedom of Information Act, for example, to pursue their objectives, including challenges to the government.

Where reliable data are either lacking or unavailable, groups have sought to acquire their own monitoring equipment and to conduct independent studies. Using a battery of radiation monitoring devices, Vladimir Mikheev of Krasnoyarsk's Green World association, conducted several informal surveys revealing high radiation levels in the Yenisei River north of the Krasnoyarsk-26 nuclear facility. Often environmentalists turn to their counterparts in the West for monitoring equipment as well as information that is considered independent and credible. Greenpeace's "Children of Chernobyl" project, for example, imported a special truck outfitted with diagnostic equipment to travel around Ukraine and sample environmental conditions. Because membership in NGOs frequently includes highly qualified scientists, groups often aim to serve as an independent source of expertise for policymakers and the public. The Chelyabinsk Ecological Fund, for instance, retains several medical and scientific specialists to assess and to inform the public about environmental conditions.

Similarly, many environmental groups place a strong emphasis on educating the public, especially the youth, about ecology and the environment. Activists often describe the general public as being "ecologically illiterate"—a consequence of the Soviet government's low priority on raising environmental consciousness and teaching ecology in public schools, its suppression of information, and its hostility to independent thought. Anatolii Grebenyuk, a parliamentarian from Kyrgyzstan, stressed the legacy of Soviet environmental education thus: "We have been taught since kindergarten that we have no ecological problems, and that we can live for millions of years with no concerns. Today we see this is not so. It is very difficult to change people's opinions, to make them realize the severity of our situation."⁷⁷ To correct this attitude, many groups have opened environmental libraries (with donations often coming from abroad) and educate the public through their own publications, the mass media, and the schools.

THE TACTICS OF ENVIRONMENTAL GROUPS

Despite the liberalization of politics in much of the former Soviet Union, democratic politics remain in a nascent and tentative stage. Democratic institutions and instruments such as referendums, public opinion polling, parties, lobbyists, public hearings, fundraising and advertising are still in the early stages of development. The lawsuit, the

mainstay of environmentalists in the United States, is not an effective or realistic option in the newly independent republics, given that environmental laws remain weak and often unenforceable. This problem is compounded by an often unsupportive judiciary. As a result, organizing traditional mass demonstrations—with attendance frequently numbering in the tens of thousands—has been the most visible and popular tactic of environmental groups and has served to send the most potent messages to the authorities about the legitimacy of their public's demands.⁷⁸

Environmentally concerned individuals need not form organized groups to be effective participants in the policy process. Scientists, for example, with their high prestige in society and privileged access to information, have formed effective lobbies, as was the case with the relatively unorganized yet successful campaign against the Siberian rivers diversion plan. Physicists and writers formed a strategic alliance to oppose successfully the development of nuclear power, most notably in Ukraine: The physicists were able to disseminate their authoritative information and forebodings about the government's plans, exploiting writers' access to such media as the influential newspapers *Literaturnaya Ukraina*, *Komsomol'skaya pravda*, and *Moscow News*.⁷⁹

Analysis of the political agendas of various ecological groups makes clear that not all "green" organizations are what they appear to be. The Russian ultranationalist group Pamyat' has been charged with creating the innocuous-sounding All-Union Ecological Society in an attempt to use environmental issues to add a veneer of legitimacy to its less benevolent pursuits (e.g., its harassment of Jews and non-Russians). Leaders of the Social-Ecological Union (SEU) have leveled similar charges against the Committee to Save the Volga.⁸⁰ In addition to political opportunists, the environmental movement also attracts people and institutions motivated by material impulses, and their actions may not bode well for nature. Environmentalists have accused Communist Party *apparatchiks* of founding or supporting front organizations, such as the Green Party of Leningrad, to draw support away from real opposition groups.⁸¹ In Chelyabinsk oblast, conservative interests put forth the Green Party, while the "real Greens" in the region are said to be represented by the Democratic Green Party.⁸² Similarly, leaders of the SEU have accused the Green movement of being a tool of the Communist Party and agro-industry: "The one who pays the piper calls the tune," they write.⁸³

Some ministries also have formed their own environmental front organizations much in the way U.S. industries form political action committees with ecologically correct-sounding names. The Ecological Foundation, a group that announced its intention to establish a bank that would finance purchases of environmental technology, reportedly is

controlled by the oil and chemical industries' ministries. Acquisitive individuals are also seeking to profit from widespread concern about the environment. It is relatively easy for an organization to open a bank account and solicit donations by publicizing the account number, but there is no mechanism to ensure that the money collected is spent on environmental improvement.⁸⁴

THE POLITICS OF THE GREEN MOVEMENTS

Practically all Soviet successor states have some form of Green party or political organization. This process of creating Green movements has been most advanced in the Baltic states of Estonia, Lithuania, and Latvia; the first Green Party was formed in Estonia in spring 1988. The Baltic region's Greens scored remarkable successes in early elective politics: Juhan Aare of Estonia and Vaidotas Antanaitis of Lithuania, running as official Green candidates, won election to the USSR Supreme Soviet in March 1989.⁸⁵ Both served on the USSR Supreme Soviet's Ecology Committee before withdrawing from the parliament in 1990 in recognition of their republics' political sovereignty. In the 1990 republican elections, the newly created Green Party of Lithuania won three seats in the state's Supreme Council.⁸⁶

Georgia's Greens movement is described as a "public-political organization" and bases its action on the following principles: ecological safety, democracy, and nonviolence.⁸⁷ Leaders of the Armenian Union of Greens conceive of their movement as one of human rights, such as fighting for the right to breathe clean air. As a result, they decided not to create a Green party because they hoped to count a large number of people and political parties in their movement without making a bid for power.⁸⁸

By far the most politically significant Green movement to have developed in the former Soviet region is Ukraine's Zelenyi Svit (Green World). In the late 1980s, Communist officials at the regional and local levels, sensing the strength of environmentalism and Zelenyi Svit, cooperated with environmentalists to oppose the construction of potentially harmful enterprises.⁸⁹ After democratic elections held in 1990, Zelenyi Svit counted 7 of its adherents among the 105 members of the Ukrainian parliament.⁹⁰ In June 1989, members of Zelenyi Svit created the Ukrainian Green Party. The success and popularity of the Ukrainian environmental movement can be attributed in part to the high visibility and close proximity of environmental threats: from Chernobyl and the numerous other nuclear power plants in the republic, from wide-scale devastation in the Donets Basin, and from the ecological decline of the beloved Crimea and the Black Sea. Success may also be attributed to the symbiotic relation-

ship between the movement and its leader Yurii Shcherbak: The popular writer, doctor, and scientist brought a great measure of visibility and respect to Zelenyi Svit and to the Ukrainian Green Party; the movement, in turn, provided him with a strong group of supporters and a vehicle with which to further his political ambitions and, ultimately, to propel him into the government as minister of the environment in 1991.⁹¹

THE ENVIRONMENT AND LABOR

One of the most significant changes as a result of perestroika during the Soviet era was the reemergence of an independent and insurgent labor movement after decades of being smothered by an official labor bureaucracy that was ultimately loyal to the Communist Party and government instead of the workers. Strikes and other labor actions became commonplace, if not ubiquitous, attesting to a high level of worker dissatisfaction. Protests centered around traditional economic issues such as pay and benefits, work rules, and autonomy of their enterprises. Many strikes were organized with purely political goals or as part of nationalist and ethnic protests. Quality-of-life issues such as food supply, housing, and the environment also figured high on strikers' agendas. According to official reports, almost two-thirds of all strikes in 1990 centered around economic demands, 15 percent had a political nature, and about 4 percent were called to protest environmental conditions.⁹²

Improved working conditions have been one demand of labor. This is understandable because the workplace is exceedingly dangerous: In the late 1980s, about 14,000 workers were killed while on the job, 20,000 were maimed, and an estimated 10,000 suffered from work-related maladies every year. More than 9 million people were forced to work under harmful conditions, such as excessive noise, vibrations, and dust. According to one state study, 20 to 38 percent of all illnesses in the Soviet Union were believed to have been "connected with conditions in the workplace."⁹³ Conditions have only deteriorated under the rigors of economic reform, as new constraints have prompted managers to divert funds away from occupational safety.⁹⁴ According to one specialist on the issue, such economizing was "a very widespread problem." Commented Dr. E. Petrosyants: "The following is occurring at many enterprises: Having received the right to distribute a portion of their profits [managers are] releasing funds to boost wages and bonuses. Simultaneously, they reduce investment in occupational safety down to nothing." Thus, managers pay their workers more to put up with deteriorating conditions. Asked *Rabochaya tribuna*, "Is it worth the price?"⁹⁵

Labor's support for environmental cleanup was strongest in the late 1980s and early 1990s. Workers at the Volga Automobile Works, the former Soviet Union's largest car factory, for example, attempted a strike in September 1989; in addition to pay increases and more vacation time, the workers demanded improved working conditions and a cleanup of their city of Tolyatti, which also has been polluted by chemical factories.⁹⁶ In the Bashkir capital of Ufa, workers held a three-hour warning strike on May 21, 1990, paralyzing the city. They were protesting a chemical spill at a local chemical plant that left 600,000 residents—over half the city's population—without safe running water for a fortnight.⁹⁷ In Karaganda, Kazakhstan, 12,000 coal miners joined with Nevada-Semipalatinsk to call for a halt to nuclear testing at Semipalatinsk, 350 kilometers east of their city.⁹⁸

The strength and anger of labor were most clearly demonstrated in the wildcat strikes that paralyzed the coal industry and sent the Soviet government into a state of crisis for over two weeks in July 1989. After an initial walkout at one mine in the Kuznetsk Basin (Kuzbass) in central Siberia, strikes spread to other mines in the region as well as in Kazakhstan and the Donets Basin in Ukraine, the largest mining region. Throughout decades of centralized planning, the government packed these areas with large heavy industrial complexes to make use of the local coal. As a result, all of these areas still rank high as being environmentally distressed; Kemerovo oblast in the Kuzbass is arguably the worst. "I was in the Kemerovo region where the strikes took place," says Aleksei Yablokov. "People were walking around with masks because you couldn't breathe the air."⁹⁹ After the strike ended, *Pravda* examined conditions there. The state of people's health was "critical," concluded the newspaper: One-half of all workers in the oblast suffered from chronic ailments, and 87 percent of all children were born with "mental and physical anomalies."¹⁰⁰ The problem stems in part from the poor working conditions of women. Health workers in the city of Kemerovo report that there are "practically no healthy women" working in industrial enterprises, and 99 percent of all expectant mothers have been classified as "at risk." "If these trends continue," noted *Argumenty i fakty*, "by 2000 not one single infant will be born healthy."¹⁰¹ Said Vladislav Stergilov, a local environmental activist: "Only with the strike did people really become aware of the environmental crisis."¹⁰²

In its economic platform, the Kuzbass Union of Workers, an independent union set up by the coal miners, placed ecology at the top of its list of social concerns:

Several industrial centers in the Kuzbass are located on the verge of ecological disaster. Illnesses, caused by a polluted environment, victimize oblast

residents not only at work but also at rest. The ministries, oblivious to the region's interests, commit ecological crimes. The Kuzbass Union of Workers declares as its objective to work for legislation which will protect oblast residents from environmental degradation and which will create such an economic mechanism as to make dangerous production unviable. We reproach the oblast's previous management structure for allowing an unbalanced and rapacious approach towards natural resources and the interests of the Kuzbass population; we will demand a program of ecological recovery for the oblast, environmental assessments of construction projects, [and] for the provision of the population with reliable instruments for the monitoring of chemical and other forms of pollution of the environment and foodstuffs.¹⁰³

Still, for most blue-collar workers, the environment is a nonissue. Most are willing to discount their future in favor of immediate material gains, especially if that means holding onto a job—a growing concern as economic reform threatens tens of millions of workers in the 1990s. Conditions in the Arctic mining and metal refining region of Norilsk (population 250,000) provide a case in point. On most days, a sickly yellow-grey pall of sulfur dioxide, nitrogen oxides, carbon monoxide, phenol, and chlorine from the region's light metal smelters settles over the region. One can literally taste the sulfur in the air. Air and water pollution has poisoned local lakes and scorched the fragile tundra: "It's like Hell," summed Andrei Ivanov-Smolenskii of the SEU.¹⁰⁴ Most residents do not live past the age of 50.

After decades of rapid immigration and growth, the city's population decreased by 8,000 people between 1987 and 1990—attesting to increased dissatisfaction with the quality of life in the far north. By 1991, however, outmigration slowed and many workers began to return to Norilsk in search of their old jobs; in the south, economic reform had boosted the cost of living sharply and good-paying jobs had disappeared. In contrast, miners' wages in Norilsk stood at 40,000–50,000 rubles per month in the summer of 1992, while the local minimum wage (including a premium for hardship conditions in the far north) was approximately 10,000 rubles. By comparison, the average monthly wage in Moscow stood at about 6,000 rubles.

Vladimir Shishkov, a manager at the Volga Automobile Plant in Tolyatti, related the following story to *Moscow News* about a trip to Chelyabinsk to negotiate supply contracts for his firm: "At the shop producing lead-containing products, I saw men almost naked to the waist and without respirators. I asked how I could help them: with working clothes or protective means? They answered: if we could just have at least 50 cars [to sell to] our employees each year."¹⁰⁵ The Odessa city

government, under heavy pressure from environmental groups, decided in the summer of 1990 to shut down a local chemical plant. The city's leaders, in turn, quickly found themselves in conflict with the plant's employees, who challenged the measure in order to save their jobs. Higher-ups in the chemicals ministry ignored the city's order.¹⁰⁶ The city resorted to a public referendum on the plant "as the last means" to resolving the impasse. The result was that 83 percent of voters were in favor of the plant's closing.¹⁰⁷

In the Soviet era, industrial ministries perfunctorily absorbed the cost of fines for pollution from their enterprises as a routine business matter. With the transition to free-market relations and the rise of private and collective ownership, enterprises now are forced to pay these fines out of their own revenues and profits, hence impinging on their social benefits and wage funds. The result has been predictable: Miners striking on Sakhalin Island demanded, among other things, that fines assessed against their enterprise for polluting the environment be lifted.¹⁰⁸ In October 1990, oil and gas workers in the Tyumen region threatened to shut down their pipelines unless the government lifted pollution fines assessed on employees of the firm; accidents had garnered the west Siberian concern 26 lawsuits for violation of environmental regulations. *Moscow News* commented:

The oil workers found themselves unprepared for the demands of the oblast procuracy and committee for the protection of nature recently created in the oblast. For decades, oil poured onto the ground from the active pipelines; for decades, an indulgent system meticulously protected the guilty parties. And suddenly . . . popular concern, new people in the soviets, million-ruble suits against enterprises, criminal cases, fines.¹⁰⁹

The Tyumen workers were dismayed at being held responsible for the pipelines, which were laid through swamps and were shoddily built by other firms. In addition to the removal of the fines, the workers demanded that their enterprise be permitted to keep more of the hard-currency earnings it produced. Radio Moscow pointed out that the workers were not intending to pocket all of the money; instead, they planned to use much of it to purchase new drilling equipment and to renovate the pipelines, which were in "a dangerous condition."¹¹⁰

ENVIRONMENTALISM, NATIONALISM, AND NATIONAL MOVEMENTS

Parallel with the rise of environmental awareness, the Soviet Union witnessed a dramatic upsurge in nationalism. Yet the distinction be-

tween rising environmentalism and ethnic or nationalist sentiments often blurred, and during the 1980s and early 1990s, the two causes frequently proved mutually reinforcing. "The degradation of natural areas," an official in the USSR Council of Ministers wrote in 1989, "which people identify with their national dignity, aggravates relations between ethnic groups."¹¹¹ In some regions, such as the Baltic states of Lithuania, Estonia, and Latvia, environmentalism often was couched in a broader anti-Russian feeling. Everywhere, even inside the Russian Federation, environmentalism frequently turned anti-Soviet and anti-Moscow as activists attempted to break the grip of the center's "environmental colonialism." Everywhere the combination was explosive.

In February 1990, Mikhail Gorbachev sent paratroopers into the Tajik capital of Dushanbe to thwart an attack by young rioters on the republic's Communist Party headquarters and to prevent the victory of "narrow egotistical aims."¹¹² According to Soviet press reports, however, the protesters' goals were not so narrow: In addition to demanding the ouster of party and government leaders in the republic, the deportation of Armenians (already refugees from recent pogroms in Azerbaijan), and the repatriation of profits from the sale of local cotton, protesters also demanded the closing of the Tajik Aluminum Plant—an inveterate polluter of the region. The following April, 150,000 people gathered in Yerevan to protest the accidental release of chloroprene gas from the Nairit plant, which caused 100 people to be hospitalized and many more to fall ill. The meeting was organized by the Union of Greens, the Ecological Union, and the Armenian National Movement to demand the resignation of Prime Minister Vladimir Markayants, who had been resisting the parliament's order to close Nairit at the end of 1989. After the demonstration, a group of about 1,000 youths marched to the republic's KGB headquarters shouting "provocative calls to liquidate the KGB" and laid siege to the building with homemade bombs and flare guns, causing heavy damage.¹¹³ Later that month, youths broke away from an ecological meeting in Kiev shouting "anti-Soviet and anti-Socialist slogans" and vandalized a statue of Lenin and a monument commemorating the Bolshevik revolution.¹¹⁴

Interestingly, it was environmental issues that first ignited many of the movements for national identity, which ultimately destroyed the foundation of the Soviet state. To many citizens, the destruction of nature in their homelands epitomized everything that was wrong with Soviet development, the Soviet economy, and the Soviet state itself, and these great injustices against nature were obvious and easy focuses for action. Nature became a medium for social change. In the early days of perestroika, government officials tolerated environmentalists' activity be-

cause it was seen less as a political threat and more as a catalyst for their style of change. One victory after another—the cancellation of the Siberian rivers diversion project in summer 1986 being the most symbolic—boosted the morale and aspirations of the “informal movement,” as it was called for years.

Events quickly ran out of officials’ control, however. In Latvia, a series of articles appeared in the local press in 1986 and 1987 criticizing Moscow’s plans to build a hydroelectric dam on the Daugava River. Dainis Ivans, an author of the articles, eventually was elected deputy chairman of the Latvian parliament and leader of the Latvian Popular Front, the movement that led the republic’s drive for independence.¹¹⁵ Janis Peters, another founding member of this group, boldly declared at the First USSR Congress of People’s Deputies that only republic sovereignty “now can lead us out of our political, economic, ecological, and national crisis.”¹¹⁶ At about the same time, concern over oil-shale and phosphate mining precipitated the formation of the People’s Front in Estonia. In Georgia, protests against the Transcaucasus Main Railway led to the creation in April 1988 of the Ecology Association under the auspices of the All-Georgia Rustaveli Society, the forerunner of the movement that asserted Georgian independence.

The experience of the Baltic environmental movement epitomized the synergy between environmental and ethnic issues. Having been forcibly incorporated into the Soviet Union in 1940, the Baltic people became convinced that their predominantly Russian rulers in Moscow were systematically destroying their economies, cultures, and natural resources. In a briefing issued to participants at the October 1989 Conference on Security and Cooperation in Europe (CSCE) meeting on the environment held in Sophia, the Lithuanian Greens argued that besides a lack of pollution control equipment, the republic suffers “a lack of control over its production and resources.” In the document, the authors went on to accuse Soviet occupiers of turning the republic into “a colonial industrial dump site producing goods and services far beyond the needs of its own inhabitants.”¹¹⁷ Given such language, it is clear the Baltic environmentalists had more on their agendas than planting trees. Apart from improving air and water quality, the Greens expressed a desire to cleanse the political, mental, and even ethnic environment of their republics. In one statement, the Estonian Greens associated environmental problems with immigration into their republic, namely by Russians: “The suffocating overpopulation afflicts ever more our space of living and culture. We are becoming a minority in our own country.”¹¹⁸ Opposition to Lithuania’s Ignalina nuclear power plant was based, in part, on the desire to force the predominantly Russian work force at the plant to leave the re-

public.¹¹⁹ Many Estonians considered the values espoused by the German Green Party—renunciation of economic growth, antimilitarism, and strict protection of the environment—a perfect antidote to problems created by what they referred to as the “Soviet occupying forces.” Their party proposed to reduce the number of resource-intensive industries situated in Estonia, to transfer land ownership from federal to republican or local levels, and to end in-migration from other republics. These demands, considered by many to be outlandish when they were first expressed, quickly became obtainable.

“We believe that the ultimate resolution of all problems is possible only after full restoration of state independence,” stated Zurab Zhvaniya, spokesman for the Georgian Green Party in 1990. “Georgia . . . must always exist independently, in a situation of real equality.”¹²⁰ In Ukraine, the Green Party was one of the republic’s strongest supporters of sovereignty and independence, and its leaders figured prominently in emotional celebrations when the Ukrainian bicolored flag was raised for the first time over Kiev’s city hall in the spring of 1991. The Green movements in Moldova and Belarus also developed in concert with national independence movements.

The interaction between environmental issues and nationality relations in the former Soviet Union can be viewed in a broader context as stemming from an ongoing struggle for control over resources. Nowhere have such pressures been greater than in Central Asia, which is presently in the midst of a population boom. In June 1989, communal violence broke out between native Uzbeks and Meskhetian immigrants in the Fergana Valley; over 100 people perished, 1,500 were injured, and 17,000 eventually were evacuated as a result of the bloody pogrom, largely precipitated by disaffected Uzbek youths. “Fergana can be seen as a direct result of a demographic explosion,” asserted demographer Mark Tol’ts.¹²¹ Moscow’s pressure on the region to produce cotton had led to a fall in the availability of food in the region, and heavy chemical and pesticide use had contaminated the water supply.¹²² Competition for jobs, water, and land is keen as a result of the skyrocketing population of Uzbeks in the valley. “There’s a feeling of competition, and it creates a feeling of resentment against the minority,” Tol’ts added.

As part of the effort to improve the social and economic situation in the Fergana Valley, Uzbekistan’s Goskompriroda in 1989 announced the closure of a chemical plant in the city of Kokand. The plant, which had recently been completed, was situated over the valley’s largest freshwater aquifer, and the republic’s prosecutor had opened an investigation to determine responsibility for this “gravest mistake.”¹²³ One month after tempers subsided in Fergana, a territorial dispute erupted nearby, this

time in the towns of Bakten and Isfara, which straddle the Kyrgyzstan-Tajikistan border. Noted *Pravda*: "The basis of the conflict" between the two nationalities was "a shortage of land and a deficit of water."¹²⁴

ENVIRONMENTALISM IN RUSSIA

The formation of a unified environmental movement in Russia has been much slower than in other states of the former Soviet Union. First, political cleavages in many parts of the Russian Federation have not produced the same situation found in the other republics, where ecology, nationalism, and anti-Moscow sentiments reinforced each other. Politics in the Russian republic have been generally far more complex than the "us versus them" attitude that has dominated politics in the non-Russian republics. Although many people like Valentin Rasputin have tended to blame bureaucrats in Moscow for problems in the countryside, the differences with Moscow have not been so great as to warrant secession. Rather, environmental interests in the Russian Federation have opted for more autonomy and control over the resources and industries of their region—a popular position given the spate of declarations of autonomy by numerous local and regional governments in the Russian Federation in 1990 and 1991. However, many of the center/periphery cleavages between the former Soviet government and the republics have been replicated in the minority ethnic regions of the federation in the post-Soviet era. Tatarstan and Bashkortostan, for example, have challenged the authority of Boris Yeltsin's Kremlin on national resources issues.

Second, geography has presented a major obstacle. The size of the federation and the lack of a reliable communications network have prevented the development of links between organizations. Environmental groups in neighboring cities, for example, often are unaware of each other's existence. Other Soviet successor states are small enough that the "backyard" metaphor accurately describes how citizens relate to their national territory. Russians feel equally strongly about their homeland, but Russia is not a backyard by any stretch of the imagination. Moscow residents want to eat rice; distance makes it more difficult to be concerned about the fact that fertilizer runoff from rice farms in Krasnodar is killing the Azov Sea, 1,200 kilometers away, especially when Muscovites are forced to contend with radioactive waste in their own city parks. This situation is an extension of the think-locally-act-locally model; environmental groups have formed in response to local needs. An overarching worldview or philosophy has yet to arise to unite these diverse groups spread across the Eurasian continent.

Third, as in the West, the environmental movement in the Russian Federation has been ideologically disparate and has attracted people from all points on the political and social spectrum. Journalist Viktor Yaroshenko noted that the Soviet Union in 1989 had "left-greens, right-greens, eco-socialists, and even eco-fascists." This is particularly true of Russia.¹²⁵ The case of Valentin Rasputin illustrates the strange and often incompatible bedfellows that Russian environmentalism brings together. Rasputin, one of contemporary Russia's most talented and famous writers, has been a longtime defender of the Siberian wilderness. As a native of Irkutsk oblast, he has been a vocal critic of the government's feeble efforts to protect Lake Baikal. Rasputin also has been associated with Pamyat', the staunchly Russian nationalist society that often has been accused of anti-Semitism.

Several large umbrella groups nonetheless have emerged that loosely link citizens associations from across the Russian Federation and the former Soviet Union. These NGOs, all based in Moscow, have achieved some measure of influence on policymaking and have successfully cultivated contacts with environmental groups abroad. The largest umbrella group is the Social-Ecological Union, with over 100 affiliated organizations, clubs, and societies drawn from virtually all former Soviet republics.¹²⁶ Formed at a national congress of environmentalists in December 1988, the SEU's goal is to serve as an effective counterweight to government. In its founding charter, the SEU calls for "the liquidation of the monopoly State Ministries and Departments maintain on receiving and disseminating information, and on elaborating plans and projects."¹²⁷ In April 1991, the Soviet Ministry of Justice issued a new charter to the SEU, giving the organization the same legal basis as a political party and granting it the right to monitor the enforcement of environmental protection legislation. The group thus became the first non-governmental organization in the Soviet Union with such privileges.

As its name suggests, the SEU's activities have extended beyond environmental protection per se in regions of particularly severe environmental degradation such as the Volga delta, where the group has expanded its agenda to include public health issues. Hence, its programs range from grassroots work educating the public about nitrate residue in foods to furnishing expert information to the former USSR Supreme Soviet Ecology Committee. The SEU does not have a centralized leadership, but international support has enabled the group to employ ten full-time coordinators responsible for diverse programs covering issues from the creation of nature preserves in the Pamir Mountains and Taimir Peninsula to the independent monitoring of radioactivity in Chelyabinsk oblast (the site of the Kyshtym disaster) and the creation of a pediatric

“ecoclinic” in St. Petersburg. One of the SEU’s leaders, Svetaslav Zabelin, is a close adviser to Aleksei Yablokov, who in turn serves as Boris Yeltsin’s adviser on the environment.

Another group, the Ecological Union, was formed at the same time as the SEU as the result of a disagreement among organizers at the founding congress of the SEU. The Ecological Union differs from the SEU in that it focuses more on the science—as opposed to the politics—of environmental protection. Its motto reflects this technocratic approach: “High professionalism in solving ecological problems; less emotion and more work.” Its leader remarked in an interview that he opposes “ecological hysteria.” Said biology professor Nikolai Reimers: “One must be a realist. Now it is time to roll up our sleeves and prepare our own cadre of experts.”¹²⁸ The Ecological Union has conducted studies on Lake Baikal, on economic development in the Altai region of Siberia, and on preserving the Black Sea. Like the SEU, the organization does not accept individual members; its approach is to form alliances with local environmental groups and to supply them with scientific support.

CHALLENGES FOR THE ENVIRONMENTAL MOVEMENTS

Despite their successes, the environmental organizations have encountered serious obstacles. Because organizing independent associations was forbidden for so long by the Soviet Union and is still discouraged in many regions, environmental groups must spend a considerable share of their energy working merely to establish themselves, thus diverting them from actual environmental activities. Having trouble being accepted as legitimate participants in civil society, most groups find themselves battling on two fronts, ecological and political. Over decades of rule, Communist Party authorities became quite accustomed to running things without interference from the public. Similarly, it will take decades of democratic experience to eradicate dictatorial tendencies that continue to pervade the political cultures of the newly independent republics. Although he himself was once a dissident, Zviad Gamsakhurdia quickly began to demonstrate dictatorial tendencies shortly after being elected president of Georgia in the spring of 1990. Similarly, popularly elected officials like St. Petersburg’s Mayor Anatolii Sobchak and Russian President Boris Yeltsin have been accused of flouting democratic principles and practices in their haste to consolidate power.¹²⁹

Bureaucrats on the whole still do not accept the idea that citizens groups can make substantive contributions to the formulation and implementation of environmental policy. Although welcoming the public’s

support, many environmental officials (like those elsewhere in the world) do not want NGOs monitoring their every move, criticizing them, or offering unsolicited advice. The deputy chairman of Kazakhstan's Goskompriroda, Boris Mishariakov, admonished local groups for demanding too much too soon and labeled them "dilettantes" unqualified to take an active part in environmental policy. "They don't understand that resolving ecological problems requires time. They say, 'No, we want it now, it must be done now.'"¹³⁰

Officials have obstructed citizens groups from registering as independent organizations; often it is only through official registration, however, that a group can obtain office space, telephones, and other basic resources that Western NGOs take for granted. The bureaucracy can frustrate any initiative. It took an act of the Ukrainian parliament to secure three cramped rooms in a Kiev hotel for Greenpeace International's "Children of Chernobyl" project, and organizers had expected to spend another year fighting the bureaucracy and shortages to obtain, renovate, and outfit a simple storefront office.¹³¹

Negative attitudes toward environmental groups (indeed, toward the democratic movement as a whole) are shared by many people in post-Soviet society. With increasing troubles besetting the region's economy, many have begun accusing environmentalists of blocking or slowing economic recovery and growth. Under a September 1990 front-page headline, *Izvestiya* queried "Are the Greens always right?" and alleged that the "Green offensive" was implicated in shortages of everything from cigarette filters, washing powder, and fabric dyes to photographic film and eyeglass lenses.¹³² Alluding to the shortage of aspirin in Ukraine, *Rabochaya gazeta* attacked the popular Ukrainian environmental movement Zelenyi Svit, writing that "people literally have headaches from environmental problems."¹³³ Commentary in the liberal *Literaturnaya gazeta* accused Greens of acting with "a Red fury" and detailed how environmentalists had sought to shut down worthy enterprises and to assign guilt for transgressions. In a search for a resolution to the country's environmental problems, the newspaper criticized environmentalists for victimizing well-meaning enterprise directors, when the real culprits were the "achievements" of Soviet development—the polluting factories themselves.¹³⁴

To charges of economic sabotage, environmentalists counter that they unfairly have been made scapegoats for the failures of the Soviet economy; they claim that not all factories were closed or projects abandoned solely for environmental reasons. Many operations were shut down because they were outdated or simply were no longer needed. Many projects, like the famous Siberian rivers diversion scheme and those

concerning nuclear power, were shelved after impartial commissions concluded they were economically unfeasible or based on questionable technological merit.¹³⁵ However, it is true that the success of environmental groups came primarily in their vociferous opposition to ecologically hazardous projects rather than in abatement of pollution from an enterprise or in remediation of existing damage. Having demonstrated its power of opposition, the environmental movement must now provide credible alternatives to the status quo.

Much of the early environmental debate in the former Soviet Union was conceptualized in terms of “us” (the localities) versus “them” (Moscow and the ministries), engendering a “not in my backyard” mentality that became reinforced by sentiments for political autonomy and economic autarky. Environmentalists are aware of global problems such as climate change, ozone depletion, and acid rain, but the alarming conditions citizens must confront in their backyards everyday force them to concentrate on the more proximal dangers. As already noted, large distances between population centers, a shortage of communications equipment, and an underdeveloped telecommunications infrastructure prevent NGOs from spreading their message more widely and making contacts with each other.

In part, the local focus also can be attributed to the movement’s youth and inexperience. Even the most successful groups, such as Ukraine’s Zelenyi Svit, have at most a few paid or formally trained staff members. Despite the devotion and vigorous activity of their supporters, many groups are poorly organized, do not know how to obtain information or use what is available to support their positions, and become overwhelmed by the intricacies and arbitrariness of the legal system.¹³⁶ Even when groups have access to equipment like telephones, faxes, computers, and photocopying machines, they do not always use them to their full advantage. With support from U.S. foundations and the Institute for Soviet-American Relations, a Washington, D.C.-based nongovernmental organization, the SEU set up an electronic mail network to link environmental groups with each other as well as with the West. Although international communications have proved popular, few messages beyond the occasional greeting have been exchanged among groups within the former Soviet Union. This can be attributed in part to the lack of networking skills among environmentalists in the former USSR—a legacy of policies designed to atomize society over the decades of Communist Party rule.

In contrast to the pattern in other regions, particularly favorable local conditions were one reason for the Baltic Greens’ early organizational and political successes. With the inception of perestroika and glasnost,

the Baltic people (and governments quickly thereafter) were the first to adopt the goal of developing pluralist political structures. Moreover, they were quick to embrace the concepts of economic autonomy (i.e., control over the republics' resources and industry) and eager to promote the region's agriculture and to develop cleaner high technology and service industries. In addition, with official sanction, Baltic environmentalists were able to take advantage of a relatively well-developed (by Soviet standards) communications infrastructure. In the early 1990s, over 130 independent newspapers were published in Lithuania alone, for example, and local governments improved public access to local radio and television facilities.

Furthermore, international contacts, facilitated by the region's proximity to Scandinavia, proved crucial as a source of information and organizational support. During the Soviet era, the Estonians were able to receive Finnish television, allowing them to monitor events in that country and the West at large. Moreover, Baltic environmentalists were able to strengthen contacts abroad through their extensive participation in regional conferences, such as those concentrating on the cleanup of the Baltic Sea. Finally, the independence and environmental movements were supported by an energetic émigré community, particularly in the United States, where they had as advocates several members of the U.S. Congress. In recognition of these links, Vaidotas Antanaitis of Lithuania and Vello Pohla of Estonia were invited to testify before that body in October 1989. The Environmental Protection Club, one of the largest citizens organizations in Latvia, received computers, photocopiers, and Geiger counters from members of the organization's chapter in the United States.¹³⁷ Using office equipment donated from the West, many Baltic environmental groups began to exploit electronic mail and facsimile machines much earlier than their counterparts elsewhere in the Soviet Union. These advantages organizations in the Baltic states had are significant when compared with the situation of other groups in distant Siberia or even in neighboring St. Petersburg.

A lack of accomplishment by some environment activists also may be attributed to extreme and uncompromising positions they hold as well as to a marked lack of trust in their opposition. Although many environmental officials and politicians have made overtures toward environmental NGOs, the latter often consider any cooperation with government or industry tantamount to violating their principles and sacrificing their independence. Konstantin Ryabchikhin of the Leningrad International Center for Environmental Law disagrees with this stance. Whereas he feels the "radical environmental movement" is effective at influencing public opinion and political discourse, working with the government

and, in particular, the judiciary is more effective at achieving concrete results.¹³⁸

Similarly, one of the striking features of the overall environmental movement is its divisiveness—groups operating in the same arena seem to trust each other as little as they trust government officials. Despite the advances of democratization, many environmentalists remain in the mold of *Homo Sovieticus*, says Sergei Pomogaev, a prominent environmental organizer in St. Petersburg.¹³⁹ Environmental leaders often profess ignorance of other groups' activities, either local or national; when they do mention others, they frequently express little toleration for their perspectives and opinions—a reflection of the political polarization and disaffection of post-Soviet society. As for government bureaucracies, access to resources and information for NGOs—especially that coming from abroad—is critical to obtaining a measure of power, and groups often appear disinclined to share. Relations can even approach enmity between NGOs, as was the case between the SEU and the Ecological Union after their split. SEU leaders portrayed environmental specialists in the Ecological Union as unsophisticated moonlighters conducting research “in their free time for an extra ruble.”¹⁴⁰ Such frictions thwart cooperation, but they are not unique to the former Soviet Union: Similar cleavages mark relations among peak organizations, science-based groups, and grassroots activists in the United States. Like their counterparts elsewhere in the world, the environmental movements of the former USSR must learn to respect the diversity of opinions among their ranks to capitalize on the breadth of the movement and to learn from the experiences of others.

ENVIRONMENTALISM IN A PERIOD OF FLUX

Despite the surge in environmentalism witnessed in the 1980s, environmental leaders were admitting by 1991 that public concern and activism on behalf of the environment had dropped off significantly. Some have attributed the public's newfound apathy to the fact that the shock and indignation about the extent of environmental degradation revealed during the early days of glasnost has dissipated. Realizing that little can be done in the near future to resolve the staggering environmental problems, people once again have become resigned to living with them. This trend has been compounded by the fact that economic hardship has diverted attention and energy away from environmental concerns, as more time is devoted to obtaining the necessities of life.

In a society where citizens spend a large share of their earnings and free time trying to obtain the most basic of necessities and services, peo-

ple, particularly women, have little time or energy left to labor on behalf of the environment. A report carried by *Izvestiya* in 1991 indicated that as a result of economic reform, individuals had even less free time to spare—presumably because of the longer time spent waiting in lines and working to make ends meet.¹⁴¹ On this point, committed environmentalists frequently complain that their fellow compatriots show too little interest in protecting nature. In October 1990, for example, a group of academic, religious, and ecology figures organized the “Vozrozhdenie” (Rebirth) boat excursion down the Volga River to dramatize the river’s precarious fate. When their boat, the *Konstantin Smirnov*, pulled into Cherepovets, no one was at the dock to greet them, even though a demonstration had been planned. Instead, local citizens reportedly were standing in lines trying to cash in their ration cards for the previous month’s allotment of sugar.¹⁴²

Change in the political discourse since the inception of reform in the 1980s also has affected the nature of environmental activism. Environmentalism played a significant role in the early democratization of political life in the Soviet Union. In the first days of perestroika, before Communist Party officials sanctioned independent political activity, environmental degradation served as an issue around which people could organize and vent their frustration with the status quo in Soviet society. Environmentalism provided the issues and space around which other political movements could coalesce. Ironically, nuclear power stations, noxious chemical plants, and hazardous waste disposal sites provided the first safe political space in which individuals could organize and work against the Communist regime, because these targets of protest often were distant from the centers of political power and thus were not considered a direct and visible threat to the political leadership.¹⁴³

As these environmental movements evolved, experiences in them afforded emerging national political leaders valuable organizational skills and public exposure they could then transfer to other initiatives. Thus, many of the region’s major political figures—Gennadii Fil’shin and Valentin Rasputin from Russia, Vaidotas Antanaitis of Lithuania, Yurii Shcherbak of Ukraine, and Olzhas Suleimenov of Kazakhstan—achieved political prominence through their work on environmental issues. As previously noted, movements of ethnic awareness or national revival in Russia, Armenia, Ukraine, Lithuania, Georgia, and elsewhere can trace their roots to the early environmental movements. But glasnost and democratization broadened and deepened the discourse by incorporating more issues spread over a larger political spectrum. In turn, many political entrepreneurs transferred their investment of time and effort from

their narrower environmental focus to agendas of more broadly based political and ethnic movements in their ascendancy. According to Zurab Zhvaniya, spokesman for the Georgian Green Party, local politicians “speculated” on the environment in their bid for power. For example, opposition to the construction of the Transcaucasus Main Railway and the Khudon hydroelectric project in Georgia helped cement the opposition to the local Communist leadership. Once they came to power in 1990 and 1991, however, the same individuals who had challenged the projects as leaders of the opposition began to champion them as essential to Georgian national development and independence.¹⁴⁴

Thus, although in many regions, Green parties were among the first overt de facto political parties to form in opposition to the Communist Party, they quickly were eclipsed by more conventional mass political parties and organizations, particularly those oriented around nationalist platforms.¹⁴⁵ One observer commenting on the rocky start of the Latvian Green Party noted that “people feel rather skeptical about forming new parties at a time when all should act as one to achieve the supreme objective—a free and independent Republic of Latvia.” When they officially did form a party in January 1990, the Latvian Greens decided to nominate candidates for the republic’s Supreme Soviet to run under the banner of the Latvian Popular Front (which was acting as an umbrella group for all proindependence candidates) rather than to support environmental candidates in their own right.¹⁴⁶ The decline in the visibility of environmental concerns has been most noticeable in the non-Russian republics, where the issue was once strongest because of the affiliation of ecology with national and ethnic causes.¹⁴⁷ In an interview with the *Los Angeles Times*, Janos Tamulis, a leader of the Lithuanian Greens and a member of the Lithuanian parliament, asserted, “The Green movement here is weaker than it was two years ago, that’s for sure.”¹⁴⁸ Ukraine’s *Rabochaya gazeta* went so far as to describe the situation as a “profound crisis in the Green movement.”¹⁴⁹

The early 1990s indeed brought a decrease in public activism, but environmental issues are not disappearing entirely from the political agenda, and environmentalism continues to shape the region’s evolving political culture. Eliza Klose of the Institute for Soviet-American Relations argues that the early movement was like “a large-scale rebellion” carried by emotion and the newfound immediacy of environmental problems, as portrayed by the press. “The time for that is over.”¹⁵⁰ As in the West, mainstream political parties and movements have made significant efforts to incorporate ecological issues into their platforms, and the environmental movement must compete with them for the public’s support. Svetaslav Zabelin of the Moscow-based Social-Ecological Union ex-

pects support for the environmental movement in the former Soviet Union ultimately to settle at levels seen in the West—about 10 percent of the population.¹⁵¹ In place of mass movements, many environmental organizations are becoming professionalized with full-time scientists and staffs. Having supplanted Communist Party bureaucrats who traditionally managed environmental matters, the new NGOs have attracted the attention and support of international environmental organizations. Despite their lower profile, environmentalists in the former Soviet Union “are working harder than ever, and the quality of the effort has been enhanced on both sides,” asserts Klose.

The scale of environmental deterioration in the former Soviet Union, however, requires costly steps to ameliorate the situation. A severe lack of resources dictates that a political compromise be struck. To reach a satisfactory compromise between the goals of protecting the environment and improving the population’s material well-being, a democratic society must comprehend the consequences of its actions—both for the economy and for the environment—and develop a quality-of-life ethic that reconciles differences and meets these needs. Thus, the environmental movement has a prominent role to play in the deepening of democracy in the post-Soviet societies through the promotion of public awareness about the value of an unpolluted and healthy society. In this light, the environmental movement has registered success, concludes Aleksei Yablokov: “The consciousness of the people is growing. The people are starting to think.”¹⁵²

Notes

1. For reviews of problems in Soviet public opinion research, see Amy Corning, “Recent Developments in Soviet Public Opinion Research,” Radio Free Europe/Radio Liberty Soviet Area Audience and Opinion Research, AR 6-89, October 1989; Ronald Pope, “Public Opinion Research in the Soviet Union: A Firsthand Account,” *Report on the USSR*, No. 43, 1990; and William E. Freeman, “Soviet Telephone Survey Methods,” U.S. Information Agency Research Report, R-13-89, August 1989.

2. USSR Goskomstat, *Press-vypusk*, No. 226, June 7, 1990. In the Goskomstat survey, 46 percent of those questioned replied that the state of the environment gave them cause for concern.

3. *Vestnik statistiki*, No. 4, 1991, pp. 20–21; TASS, September 26, 1991.

4. Radio Rossii, July 1, 1991, translated in JPRS-TEN-91-015, p. 63.

5. *Moskovskie novosti*, No. 22, 1990, p. 7. The survey was conducted jointly by the USSR Academy of Sciences Institute of Sociology, a major institution involved in public opinion research, and the University of Houston.

6. Vladimir Paniotto, “The Ukrainian Movement for Perestroika—’Rukh’: A Sociological Survey,” *Soviet Studies*, Vol. 43, No. 1, 1991, p. 179.

7. The referendums were nonbinding because at the time they were held, there was no legal mechanism in the USSR for conducting such a poll.

8. Radio Moscow, February 27, 1990. For a report on the Neftekamsk referendum, see *Izvestiya*, March 1, 1990, p. 3. In another issue on the ballot, 98 percent voted against raising the level of the Nizhnekamsk Reservoir.

9. Radio Moscow, May 15, 1990; *Izvestiya*, May 17, 1990, p. 2. *Komsomol'skaya pravda*, May 24, 1990, p. 2, reported a slightly higher share (97.9 percent) against the scheme.

10. *Moskovskie novosti*, No. 22, 1990, p. 7.

11. Personal communication with Anatolii Panov, Kiev, July, 1991.

12. Radio Moscow, August 12, 1990.

13. TASS, October 26, 1990.

14. *Pravda*, December 20, 1990, p. 8. Interestingly, Yakovlev reported that his agency's position was based on research on global fresh-water resources that the KGB had obtained from Western intelligence services.

15. Anatolii Andrienko, public relations specialist, Ukrainian Ministry of Environmental Protection and Rational Use of Natural Resources, personal communication, Kiev, July 1991.

16. *Sovetskaya Latviya*, January 1, 1990, p. 4, cited in JPRS-UPA-90-012, p. 75.

17. *Molodezh Moldavii*, August 2, 1990, p. 2, translated in JPRS-UPA-90-056, p. 69.

18. Novosti Press Agency, July 30, 1991, reported in Radio Free Europe/Radio Liberty (RFE/RL) Daily Report, August 1, 1991.

19. USSR Goskomstat, *Press-vypusk*, No. 136, April 4, 1990.

20. *Vechernyaya Moskva*, December 23, 1989, p. 2.

21. *Pravitel'stvennyi vestnik*, No. 41, 1990, p. 6.

22. K. Malakhov, "Material'no-tekhnicheskoe obespechenie narodnogo khozyaistva," *Planovoe khozyaistvo*, No. 10, 1989, p. 7.

23. TASS, April 20, 1990.

24. *Izvestiya*, January 26, 1991, p. 3. In a July 1990 appeal to President Gorbachev and the all-Union and republic Supreme Soviets, physicists under the aegis of the USSR Ministry of Atomic Energy and Industry noted that "under public pressure, the design, survey, and construction work to build nuclear power plants with a total capacity of more than 100 million kilowatts has been discontinued," and that trained work collectives are "falling apart." TASS, July 17, 1990.

25. *Sovetskaya Rossiya*, June 28, 1990, p. 1.

26. *Pravda Ukrainy*, August 8, 1990, p. 2

27. TASS, October 29, 1991. Earlier in the year, the Ukrainian Supreme Soviet had voted to close the reactors by 1995.

28. Central Television, "Vremya," May 6, 1990. For a scathing critique of the project, see *Moskovskaya pravda*, January 11, 1990, p. 3.

29. Anatolii Stepanov, Yulii Petrovich, Aleksandr Gusev, Moscow Green Party, personal communication, Moscow, June 1991.

30. *Sotsialisticheskaya industriya*, December 31, 1989, p. 2.

31. Radio Moscow, February 6, 1990.

32. *Trud*, August 30, 1990, p. 1.
33. *Meditinskaya gazeta*, December 10, 1989, p. 3.
34. *Pravda*, November 9, 1989, p. 2.
35. *Meditinskaya gazeta*, December 10, 1989, p. 3.
36. *Trud*, August 30, 1990, p. 1.
37. *Meditinskaya gazeta*, December 10, 1989, p. 3.
38. *Izvestiya*, June 13, 1989, p. 6; *Sovetskaya Rossiya*, August 30, 1989, p. 2.
39. For more on Chapaevsk and the USSR's plans to destroy its chemical weapons, see *Pravda*, February 10 and August 22, 1989; *Izvestiya*, May 13, 1989; *Komsomol'skaya pravda*, October 18, 1989; *Svet*, No. 2, 1990; and *Khimiya i zhizn'*, No. 6, 1990.
40. Radio Moscow, August 28, 1989; *Izvestiya*, August 30, 1989, p. 1.
41. In July 1991, Aleksei Yablokov commented that the Soviet government had not yet elaborated any program to destroy its chemical weapons. Radio Moscow, July 10, 1991.
42. Radio Kiev, April 2, 1990; Radio Moscow, April 4, 1990.
43. Radio Moscow, August 13, 1990. For more on Mukachevo, see *Trud*, February 25, 1990; *Pravda Ukrainy*, March 21, 1990; *Pravda*, April 1, 1990; *Izvestiya*, April 26, 1990; and Central Television, "Television News Service," June 11, 1990.
44. Natural Resources Defense Council, *Nuclear Weapons Databook*, Vol. 4 (Soviet Nuclear Weapons) (New York: Harper & Row, 1989), pp. 355, 375 (hereafter NRDC, *Databook*).
45. *Izvestiya*, March 11, 1990, p. 4.
46. *European*, June 1-3, 1990.
47. NRDC, *Databook*, pp. 375-376.
48. *Pravda*, February 12, 1990, p. 4.
49. For example, Dr. Maira Zhangelova, a medical researcher and chair of the Semipalatinsk Oblast Peace Committee, and Dr. Boris Gusev, head of the USSR Radiology Research Institute, have separately argued that as many as 500,000 people were contaminated by tests in the course of 40 years, with 100,000 succumbing to cancer-related deaths. Agence France Presse, November 1 and 13, 1990; see also, *Stuttgarter Zeitung*, November 3, 1990; Reuter, October 1, 1990; *Kazakhstanskaya pravda*, January 28 and May 25, 1990; *Izvestiya*, March 11 and October 20, 1990; and Central Television, July 23, 1989. For an extended view of life and conditions around Semipalatinsk, see Kanat Kabdrakhmanov, "Lyudi na poligon," *Znanya*, No. 5, 1990.
50. *Izvestiya*, March 11, 1990, p. 4.
51. Ibid. Similar comments have been made by Saim Bamlukhanov, deputy director of the Kazakhstan Ministry of Health Institute of Oncology and Radiology. Novosti Press Agency, *Voennyi vestnik*, No. 18, 1989.
52. See, for example, *Sovetskaya Rossiya*, July 21, 1989; *Krasnaya zvezda*, July 17, 1990.
53. TASS, June 11, 1990. Petrushenko, a local deputy, was a vocal supporter of continued testing at Semipalatinsk. For instance, see his comments in *Krasnaya zvezda*, November 29, 1990; *Rabochaya tribuna*, September 14, 1990; and *Nedelya*, No. 35, 1990.

54. Bess Brown, "The Strength of Kazakhstan's Anti-Nuclear Lobby," *Report on the USSR*, No. 4, 1991, pp. 23-24; Bess Brown, "Semipalatinsk Test Site Finally Closed," *Report on the USSR*, No. 37, 1991, pp. 15-16.

55. TASS, November 27, 1989; *Izvestiya*, December 3, 1989, p. 3. The last test held at Semipalatinsk was in October 1989.

56. Central Television, March 6 and 28, 1990.

57. TASS and Radio Moscow, March 7, 1990; RFE/RL Daily Report, March 8, 1990. The military's plan was put forth by Colonel General Vladimir Gerasimov. The military apparently scaled back its proposed program to 18 blasts, according to comments by USSR Minister of Defense Dmitrii Yazov on December 19, 1990. Novosti Press Agency, December 20, 1990.

58. TASS, May 23 and December 6, 1990.

59. TASS, October 1, 1990; Radio Moscow, December 14, 1990.

60. *Krasnaya zvezda*, April 1, 1990, p. 2.

61. The experiments were billed not as tests of nuclear weapons but as calibrating explosions to test verification methods that would allow the USSR to meet treaty obligations, only after which could the site be shut down.

62. Personal communication with Vladimir Yakimets, Moscow, June 1991.

63. *Ibid.*

64. Interfax, July 13, 1991, cited in FBIS-SOV-91-137, July 17, 1991, p. 74.

65. Brown, "Semipalatinsk Test Site Finally Closed," p. 15.

66. NRDC, *Databook*, pp. 375-376.

67. According to the NRDC, most underground tests at Novaya Zemlya have been conducted in September and October, with a few being held in August, November, and December. *Ibid.*, p. 336.

68. TASS, April 23 and November 1, 1990; *Izvestiya*, October 26, 1990, p. 2, and November 13, 1990, p. 2.

69. TASS, October 14, 1991.

70. Ukaz Prezidenta Rossiiskoi Federatsii, "O poligon na Novoi Zemle," No. 194, Moscow, February 27, 1992.

71. Dr. Paula Garb, Program on Social Ecology, University of California, Irvine, telephone conversation, April 1992.

72. TASS, April 1, 1990. Apparently, ecologically oriented groups make up a large portion of citizens organizations in St. Petersburg. According to a sociologist studying the St. Petersburg political scene, there were about 150 "groups and organizations" in the city. This figure was not based on official data but on a count of groups that had "to one extent or another an expressed public orientation." E. Zdravomyslova, "'Neformaly' trebuyut," *Leningradskaya panorama*, No. 8, 1989, p. 18.

73. Radio Moscow, October 9, 1990.

74. TASS, April 8 and April 20, 1990. For reports on the Chernobyl Union's first congress, see Central Television, "Vremya," June 15, 1990, and *Sovetskaya molodezh*, June 20, 1990, p. 1.

75. Personal communication with Sheryl Belcher, Kiev, July 1991.

76. According to a 1990 government survey, only 23 percent of the general public canvassed expressed partial or complete confidence in the government's

information; 50 percent expressed no trust at all. *Pravitel'stvennyi vestnik*, No. 24, 1991, p. 10.

77. Anatolii Grebenyuk, presentation at conference on Democratic Federalism and Environmental Crisis in the Republics of the Former Soviet Union, Moscow, August 1991.

78. In May 1987, the first officially reported environmental demonstration was held in Tartu, Estonia. Between then and the end of 1989, 182 environment-related public demonstrations were reported in the official media. Mark Beissinger, University of Wisconsin, personal communication, Phoenix, Arizona, June 1992.

79. Jane Dawson, "Intellectuals and Anti-Nuclear Protest in the Soviet Union," unpublished manuscript, University of California, Berkeley, 1991.

80. Svetaslav Zabelin, Mariya Cherkasova, and Andrei Ivanov-Smolenskii, "Informal Ecological Movements in Moscow," unpublished manuscript, August 1991, p. 9.

81. This fact was conveyed by Jane Dawson, an observer of the Soviet environmental movement (telephone communication, December 1990), and reiterated in conversations with representatives of environmental groups in the USSR in June 1991.

82. Natal'ya Mironova, deputy chair, Chelyabinsk Ecological Foundation, personal communication, Moscow, June 1991.

83. Zabelin et al., *Informal Ecological Movements*, p. 7.

84. See, for example, *Izvestiya*, March 27, 1989.

85. Of the remaining 40 people's deputies elected to the USSR Supreme Soviet from the Baltic region, 33 were members or sympathizers of the popular front movements, which had platforms similar to the Green parties.

86. B. Yastrebov and A. A. Nelyubin, "Obshchestvenno-politicheskie organizatsii, partii, i dvizheniya v Litve," *Izvestiya TsK KPSS*, No. 3, 1991, p. 97.

87. *Zarya Vostoka*, February 20, 1990, p. 4.

88. Valerii Papanian, consultant to Union of Greens of Armenia, personal communication, Kiev, July 1991.

89. See David Marples, "The Ecological Situation in the Ukraine," *Report on the USSR*, No. 3, p. 23; and David Marples, "Ecological Issues Discussed at Founding Congress of 'Zelenyi svit'," *Report on the USSR*, No. 2, 1990, p. 21.

90. Anatolii Panov, vice-president, Green World, personal communication, July 1991.

91. Sergei Kurykin, member of coordination council of the Ukrainian Green Party, personal communication, Kiev, July 1991.

92. *Vestnik statistiki*, No. 4, 1991, p. 21.

93. *Argumenty i fakty*, No. 15, 1990, p. 1. The data were supplied by the All-Union Central Scientific Institute for Occupational Safety.

94. TASS, May 8, 1990; *Trud*, October 7, 1989, p. 1.

95. *Rabochaya tribuna*, April 18, 1991, p. 1.

96. *Financial Times*, October 6, 1989.

97. TASS, May 22, 1990.

98. *Argumenty i fakty*, No. 31, 1990, p. 5.

99. Elizabeth Shogren, "Reds Go Green," *Moscow Magazine*, October 1990, p. 42.
100. *Pravda*, August 21, 1989, p. 3.
101. *Argumenty i fakty*, No. 30, 1989, p. 8.
102. *Independent*, November 17, 1989. For more on the issue, see Theodore H. Freidgut, "Ecological Factors in the July 1989 Mine Strike," *Environmental Policy Review*, January 1990.
103. "Ekonomicheskaya platforma Soyuzu Trudyashchikhsya Kuzbassa" (no author), *Voprosy ekonomiki*, No. 2, 1990, p. 86.
104. Personal communication with Andrei Ivanov-Smolenskii, Los Angeles, October 1991.
105. *Moscow News*, No. 9, 1991, p. 9.
106. Radio Kiev, August 25, 1990, translated in FBIS-SOV-90-166, p. 102.
107. Radio Kiev, December 17, 1990, translated in FBIS-SOV-90-243, pp. 96-97; *Izvestiya*, December 23, 1990, p. 6. For more on the controversy, see *Rabochaya gazeta*, October 5 and 6, 1990.
108. N. V. Uspenskaya, "Nuzhna polnaya ekologicheskaya glasnost'," *Priroda*, No. 11, 1989, p. 6.
109. *Moskovskie novosti*, No. 42, 1990, p. 6.
110. Radio Moscow, October 6, 1990. For more on the incident, consult Reuter and *Financial Times*, October 19, 1990.
111. A. Tsygankov, "Gde ugodno, tol'ko ne u nas," *Pravitel'stvennyi vestnik*, No. 20, 1989, p. 9.
112. United Press International (UPI), February 14, 1990.
113. *Los Angeles Times*, April 16, 1990, pp. A1, A14.
114. TASS, April 28, 1990.
115. *Surviving Together*, Summer 1990, p. 22.
116. Central Television, June 2, 1989.
117. Lithuanian World Community and Lithuanian Green Movement, *The Degradation of the Environment in Lithuania*, briefing to the Conference on Security and Cooperation in Europe, Sophia, October 1989, unpublished manuscript, p. 4.
118. *Maaleht*, May 26, 1988, as translated in Eric Green, *Ecology and Perestroika* (Washington, DC: American Committee on U.S.-Soviet Relations, 1990), p. 39.
119. *Los Angeles Times*, October 2, 1991, p. A1
120. *Zarya Vostoka*, February 20, 1990, p. 4.
121. *Baltimore Sun*, June 19, 1989.
122. For more on the problems of the region, consult Ann Sheehy, "Social and Economic Background to Recent Events in Fergana Valley," *Report on the USSR*, No. 27, 1989.
123. Radio Moscow, July 7, 1989.
124. *Pravda*, July 19, 1989, p. 6. For more on the nexus between environmentalism and nationalism, see "Panel on Nationalism in the USSR: Environmental and Territorial Aspects," *Soviet Geography*, June 1989.
125. Green, *Ecology*, p. 42.
126. Andrei Ivanov-Smolenskii, program coordinator, Social-Ecological Union, personal communication, Los Angeles, October 1991.

127. *Ustav Sotsial'no-ekologicheskogo soyuza*, Moscow, 1988, translated in Green, *Ecology*, p. 44.

128. *Sotsialisticheskaya industriya*, November 4, 1988. For more on Reimers and the Ecological Union, see *Sobesednik*, No. 3, 1990, p. 9.

129. See, for example, Carla Thorson, "The Collapse of the Constitutional Order," *Report on the USSR*, No. 42, 1991.

130. *Izvestiya*, May 19, 1990, p. 2.

131. Sheryl Belcher, coordinator, Greenpeace International "Children of Chernobyl" project, personal communication, Kiev, July 1991.

132. *Izvestiya*, September 17, 1991, p. 1.

133. *Rabochaya gazeta*, January 30, 1991, p. 2.

134. *Literaturnaya gazeta*, No. 30, 1990, p. 11.

135. According to the Social-Ecological Union, about one-half of the nuclear projects scrapped were the result of environmental protests. *Rossiiskaya gazeta*, June 14, 1991, p. 4.

136. Many of these points were raised by Kristen Suokko, staff member, National Resources Defense Council, telephone communication, January 1991.

137. *Surviving Together*, Summer 1990, p. 22.

138. Personal communication with Konstantin Ryabchikhin, Leningrad, June 1991.

139. Personal communication with Sergei Pomogaev, Leningrad, June 1991.

140. Zabelin et al., *Informal Ecological Movements*, p. 10.

141. *Izvestiya*, July 3, 1991, p. 8. According to survey results, men spent an average of just 7 minutes per day on "meetings, visits, games, [and] entertainment." Women allocated just 3 minutes to such activities. In comparison, 1 hour 47 minutes by men and 50 minutes by women were devoted to television watching. The lower figures for women reflect the "triple burden" (profession, housework, and childcare) that taxed women particularly heavily in the Soviet Union.

142. Central Television, "Television News Service," October 17, 1990.

143. Examples are two early protests waged in Yerevan in 1987. On Saturday, October 17, a crowd of 2,000 people gathered at the Nairit Scientific Production Association on the edge of the city to protest pollution problems associated with Nairit. Attendees included many prominent party and government officials. The police were in force, but they only observed the proceedings. The following day, a crowd of 1,000 people gathered in the city center to protest the persecution of Armenians in the Nagorno-Karabakh enclave in neighboring Azerbaijan. The protesters set off for the republic's Communist Party headquarters, but got into scuffles with the police and were dispersed. *Literaturnaya gazeta*, October 28, 1987, p. 9; Agence France Presse, October 17 and 19, 1987, translated in FBIS-SOV-87-203, p. 63. The author thanks Michael Schlitzer, RAND/UCLA Center for Soviet Studies, for his insights on this case.

144. Personal communication with Zurab Zhvaniya, Kiev, July 1991.

145. According to Dr. Peter Hardi, executive director of the Regional Environmental Center for Central and Eastern Europe, a support agency for nongovernmental organizations working on environmental issues, a similar

trend occurred in Eastern Europe, most notably in Bulgaria. Before the democratizations of 1989, dissident and opposition figures gravitated toward various environmental movements that either had semiofficial status or were at least tolerated by the government and, therefore, enjoyed a modicum of political independence. With the opening of democracy, many leaders dropped the environmental movement for mainstream political parties. Personal communication with Peter Hardi, Los Angeles, February 1991.

146. *Atmoda* (in English), No. 4, 1990, p. 2.

147. For more on this issue, see DJ Peterson, "Environmental Protection and the State of the Union," *Report on the USSR*, No. 12, 1991.

148. *Los Angeles Times*, October 2, 1991, p. A8.

149. *Rabochaya gazeta*, January 30, 1991, p. 2.

150. Telephone communication with Eliza Klose, May 1992.

151. Personal communication with Svetaslav Zabelin, Los Angeles, April 1991.

152. Shogren, "Reds Go Green," p. 40.