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Introductory remarks

Russia's human population has interacted with Russia's environmental diversity and vastness to create several ironies, many of them tragic. On the one hand, Russia still contains some of the world's largest expanses that have barely been impacted by humans. On the other hand, Russia's contains some of the most environmentally degraded and polluted air, water, and landscapes anywhere on the planet. Accordingly, Russia's environmental policy challenges in the era of globalization are legend and physically, spatially, and institutionally exacerbated by the legacy of decades of Soviet policies, priorities, irrational resource pricing, ineffective environmental protection legislation, pitfalls of central planning and other practices that placed low value on the rational use of the environment and its resources, including the protection and preservation of ecological health and biodiversity. Years before the breakup of the Soviet Union, global economic and political processes, referred to here collectively (no pun intended - CZB) as "globalization" had arguably had an ever increasing powerful effect, both indirectly and directly, on Russian environmental policy. Here rather than providing a litany of the empirical record and major geographical dimensions of Russian environmental problems that have been well documented elsewhere¹, the focus will be twofold. First, a review of the role of transnational corporations and globalization will be presented. Second, some of the ideological, political, economic, and various institutional factors that have generated the myriad of Russia's past, current and future environmental policy challenges will be presented while concomitantly attempting to illuminate somewhat the indirect and direct roles globalization processes have played in Russia's environmental problems and policies. While there are some positive developments, the evidence strongly suggests that the current situation and trends are far from sanguine for the health of either Russia's physical environment or her human population.

Human economic activity has always imposed various scales of and types of deleterious impacts upon the physical and biological environment. However, since the industrial revolution and especially since the end of World War II - both the scale and the qualitative nature of these impacts have increased and changed dramatically. The nearly

global diffusion of sophisticated technologies has resulted in geometric increases in the scale and pervasive spread of negative environmental impacts ranging geographically from local habitat destruction and air and water pollution to unprecedented rates (in human time) of species extinction, deforestation, several threatened oceanic fisheries, and anthropogenic climate change, notably global warming. Part and parcel of these impacts have been the discovery, manufacture and dispersed use of tens of thousands of new synthetic substances, having no naturally occurring biological decomposition chain, that have fundamentally altered the qualitative nature of these harmful impacts.

A significant force in these negative environmental diffusion processes has been in my view transnational corporations (TNCs), key actors in globalization processes. Their prodigious growth in number scale and scope in the post-war period has complicated many attempts to control the environmental problems associated with the adoption of "modern" technologies. Increasingly, TNCs are absolutely critical entities that must be reckoned with in any attempts to implement policies of international pollution control. We first made these arguments twenty-nine years ago this week², yet these arguments bear repeating.

Transnational Corporations (TNCs) and the Environment – Nagging Questions

A number of important questions seem to constantly arise regarding TNCs and the environment. Given their supranational operations capabilities, how easily can TNCs avoid national (or sub national) environmental controls? What types of TNC operations have strong bargaining positions in foreign, especially developing countries, because of monopsony or near monopsonistic conditions? How are TNCs related to international pollution 'free rider' problems and the creation of pollution havens? Finally, and perhaps most important, what are some of the implications of these issues for the economic development and ecological health of "transitional" countries, such as Russia, as well as developing countries?

Physical and Social-Economic-Ecologic Linkages. The basis for this discussion must be the externalities that inevitably are associated with pollution and its control. Such spillover effects almost always prevent the successful implementation of environmental protection schemes based only upon local or regional needs.

Physical linkage effects may be global or regional. Global problems are those problems that physically involve all or nearly all the nations of the world, such as global warming and ocean pollution, in which nations are either differential emitters (e.g., CO₂, or waterborne contaminants) or damaged parties (receptors) or both. Solutions to such problems must involve some sort of agreement among all nations in order to be effective. Without such international agreement a particular pollution may conceivably do as much damage as if no nations had agreed to discontinue use. With regard to

global warming, clearly the United States is the chief obstacle today to an effective international agreement, which will require a far more aggressive and concrete CO₂ reduction plan than that called for by the quite modest Kyoto Protocol, which the United States has refused to sign. As another example, while use of DDT and other pesticides are banned in the U.S., U.S.-based TNCs still continue to manufacture and export such pesticides to other countries. Ironically, some of the pesticides return to U.S. food consumers as TNCs import increasingly large quantities of food into the U.S. In some cases the physical linkages or spillover effects are more regional in scope and require only that the affected groups of nations set up agreements regarding them. The use and misuse of international and interior water basins fall within this category.

Social-economic linkage effects involve other, often more complex dimensions of controlling pollution and other forms of environmental degradation. Such linkages are increasingly legend in the current era of globalization and they are present when "...no physical linkages exist but in which, nonetheless, the policies of one national government impinge directly on the well-being of citizens of one or more other nations."³ Pecuniary effects arise when the actions of one country affect the cost structure of certain activities in other countries. For example, the imposition of environmental standards on products in country A will raise the costs of foreign manufactures intending to import similar products into country B. At the same time, of course, it will to varying degrees affect the competitiveness of country A's products in international trade. Non-pecuniary effects involve aesthetic or cultural losses or gains in foreign nations due to actions of the country in which a certain resource exists. Russia's assistance in building of the Aswan Dam, for example, resulted in non-pecuniary losses for citizens of other nations who wished to see the wonders of ancient Egypt preserved "in situ".

Pertinent Features of TNCs. TNCs are distinguished here from other corporate businesses by the fact that such organizations have technical and managerial facilities already established in more than one country and consider their "theatre of operations" to include more than one country and increasingly have global operations. As in any other "for profit" business enterprise, corporate growth and profit maximization are two of TNCs' prime motives. However, part and parcel of globalization has been and is the fact that TNCs are far more successful at achieving their goals than their "nation-bound" cousins. Back in 1972 John Fayerweather argued that: "Their advantages lie in the ability to achieve efficiencies of scale in particularly advantageous locations – for example, where costs are low – and the ability to draw on various resources spread in various locations to serve individual local activities...in research and development there is an obvious advantage for a country that can amortize product creation costs over sales to the world market as distinguished from a limited local market; in the logistics of operations there is substantial advantage to the firm that can locate its manufacturing plants in countries with relatively low costs, selling from them into markets that have good demand but higher costs; on the financial side, there are benefits to firms that can readily shift resources from countries with low interest rates to places where capital is

in strong demand and returns are high; and in a host of phases of operation there are advantages to a firm that acquires skill in one country that can be applied in assorted other nations.³⁴

Current "out-sourcing" issues, "global automobiles" and "Made in China" are clear examples of this TNC phenomenon. With regard to Russia the recent growth in the number, scale, and scope of current TNCs operating within the natural resource extraction sector in Russia, especially in the forestry and petroleum sectors points inescapably to the conclusion that environmental pollution control efforts must specifically address the supranational capabilities and externality effects of TNCs. More will be mentioned later about the global pressures of TNCs on the former Soviet Union's command economy's structure and operations.

An Environmental Taxonomy of TNCs. Serious efforts to maintain global environmental quality must be predicated upon a reasonably accurate understanding of the environmental consequences of various TNC operations. This is an exceedingly difficult area to research because almost inevitably it involves corporate and industrial proprietary secrets about production processes, production functions, and corporate decision-making. In the Russian case, "state" corporate secrets are being replaced by Russian private corporate and foreign TNC secrets. Regardless, three criteria or types of information are required for the suggested environmental taxonomy of TNC operations. First, one must establish the pollution generating potential of a given TNC activity. This potential is a function of the scale of operation, the type of activity, and the specific technology employed. The second criterion pertains to pollution control costs as a percentage of final product value. The third refers to the degree of "foot looseness", or ease with which an industrial concern might relocate itself into a more advantageous cost location to avoid or lessen environmental maintenance expenditures.

As rule of thumb, the lower the pollution control cost to final product value ratio, the easier it will be to achieve effective pollution control. Or, the more idle will be enterprise threats to relocate. The degree of "foot looseness" is also directly related to the production cost/production value ratio. Perhaps more important factors are the quantity of fixed capital invested in a given enterprise operation. Assuming the capital does not represent obsolete facilities, foot looseness would be an inverse function of fixed capital. Resource extraction operations, of course, are the least footloose of a TNC's activities. Accordingly, to the extent that many of the TNCs operating in Russia today are in the resource extraction sectors, then Russia as the host nation may be able to exercise the most potential environmental control.

TNCs and International Pollution Control. If it is assumed that TNCs will in fact move in response to changes in the degree of pollution control and environmental protection enforcement in various parts of the world, then the question arise of what if any relative geographic changes in social welfare will result. Specifically, how will or do such relocations, coupled with different types of national policies, affect international trade?

The implication of this problem was perhaps first illustrated superbly at the 1972 Stockholm Conference on the Environment by the very different attitudes of developed (DCs) and underdeveloped or less developed (LDCs) countries to environmental problems. To representatives of the former countries, now commonly referred to as the rich Global North, the conference was an opportunity to establish international guidelines regarding the use of the atmosphere, oceans, threaten flora and fauna, certain diminishing resources and dangerous pollutants. For the then referred to as underdeveloped countries, now commonly referred to as the Global South, however, participation in the conference was predicated upon very different motives, indeed. Their preliminary reports indicated very clearly that for them, poverty alleviation was the overriding environmental concern. Their strategy was one of safeguarding their interests and making them known to other nations. If anything, this North-South conflict has become sharper as wealth disparity has increased and critics of globalization processes point to a constellation of international governance organizations and institutions that lack transparency and are largely unaccountable. Chief of these singled-out entities are the International Monetary Fund (IMF), the World Bank (WB), the World Trade Organization (WTO), North American Trade Association (NAFTA) and Organization for Economic Co-operation and Development (OECD). The so-called "Battle of Seattle" during the 1999 WTO Seattle meetings personified this conflict.

A systemic understanding of why this apparent sharp division of goals exists is crucial before any successful attempts to resolve international environmental problems can occur. Within several related academic disciplines in the United States which deal with development theory major critical rethinking has been underway for nearly three decades in which critical theory, post-colonial theory, dependency theory, and Marxist analysis play prominent roles in a critique of neo-liberalism.⁵ From a purely pragmatic or empirical perspective, developing countries and several so-called transitional economies, can barely afford to set aside a portion of their GNP for the alleviation of pollution. The perceived social benefits of not doing so in most cases offset any social costs of environmental degradation. The pressure to provide employment for their citizens most often still outweighs any complaints over the smoke emissions from factories providing the jobs. However, whereas 30 years ago there may have been so-called under-utilized assimilative capacities in many countries of the Global South, it is much less so today as a result of globalization resulting in the Global North relocating many of its most polluting industries to the South (i.e., exporting pollution). Outside of vast Siberia (and even their in such places as Noril'sk), much of the populated "fertile triangle" of Russia is classified as environmental threatened. In contrast in the Global North basic necessities of life have been provided to most citizens at the expense of the environment and there has been a willingness to sacrifice some materials goods to improve environmental quality locally.

TNCs and Pollution Havens. However, globalization processes have shifted environmental pollution problems increasingly to developing and transitional countries.

Citizens of many countries of Global South understandably view TNCs with more than a kernel of suspicion, both politically and economically. The benefits these TNCs theoretically bring to a country are numerous – resource development, export opportunities, new technologies and additional employment. But the experience in many developing countries, and I expect increasingly as well in transitional countries, has been and will be that many of these potential benefits are not attuned to the needs of the host country. There is quite legitimate fear that allowing exploitation to occur in terms of the environment as it has in other areas in the past. There is also the credible possibility that when the environmental costs do become large in relation to benefits, and changes in environmental policy are initiated that the TNCs will threaten to leave rather than comply. Critics of globalization have powerful empirical evidence to support their contention that institutions such as the WTO and NAFTA do not really support strong environmental safeguards and in fact there are numerous instances where not only do they not create incentives for TNCs to install the best available pollution control technologies in poorer host nations, they have supported reduced environmental standards in the Rich North by claiming such standards constitute unfair trade practices.⁶ In other words, where problems of not-tariff barriers would be minimized if standards were established as general terms-of-trade agreed upon by all countries involved in establishing the same level of pollution control/prevention activity, this appears to have been the exception rather than the rule. Viewing from afar, it seems as though the EU's environmental policies have, however, has been for the most part powerful and positive exceptions to the globalizing TNCs' pressure for an ever lowering of environmental standards as noted in the previous section.

TNCs and International "Free Rider" Problem. While one could cite some examples of positive, effective cooperation amongst nations regarding environmental pollution problems, such as the Montreal accord on ozone, there remain many painful reasons for a somber assessment. This perspective is engendered by three factors: (1) the supranational structure of TNCs which control a very large fraction of the earth's resources, (2) the increasing disparity in wealth between the rich Global North and poor Global South, and (3) the international "free rider" problem.

Except for resource extraction activities, the supranational structure of TNCs means that they can either relocate or threaten to do so in order to extract various kinds of favorable treatment including avoiding the imposition of environmental protection practices and technology. Since firms have no incentive to install abatement equipment unilaterally, some form of legal or fiscal sanctions, or incentives are required. The WTO and NAFTA have not been up to this task.

The increasing disparity between rich and poor nations means that their priorities will continue to differ. To the extent that TNCs are owned and controlled by developed countries, the less developed or developing countries are placed in a serious dilemma. On the one hand, they frequently need and want TNC investment in order to grow. On the other hand, they perceive, often correctly, that TNCs exploit their resources pri-

marily for the benefit of rich nations. In these terms, pollution havens, in deed, are correctly interpreted as a means by which the rich nations export pollution and still reap the benefits of that pollution. If country A adopts stringent pollution control standards, what incentive does country B have to follow suit? Unfortunately, the answer is often very little. First, country B may receive some positive externalities in the sense of improved environmental quality without paying any pecuniary costs. Second, country B's products will have an increased competitive advantage over country A's. Thus, country B has an incentive to try to obtain a free ride (if B's own industrial activities are imposing severe environmental degradation on its own immediate environment, the "free rider" will have to pay a toll at some point).

In short, the situation at present seems to be very typical of all those in the international sphere. In the long run, it would seem that all countries have much to gain from cooperation regarding the environment. But it is much more likely that short-term gains will be emphasized. Whatever the motives of national governments, without some sort of explicit recognition and strategies to mute the powerful role of TNCs in influencing governmental decisions regarding the environment, it is doubtful that few successful international environmental agreements will be developed and implemented.

Russia, Globalization and the WTO⁷

To claim that neither the Soviet Union nor Russia has been immune to the powerful interrelated political and economic forces of globalization and the role of TNCs is about as informative as stating that someone has a profound grasp of the obvious!. Indeed, perhaps nothing is more powerful in understanding and explaining the disintegration of the Soviet Union than "globalization." But, how may one define what is meant by the commonly used but rather difficult to operationally define term of "globalization"? Rikowski⁸ has captured six key trends and features of globalization as follows:

- Increasing importance of the financial structure and global creation of credit, leading to the dominance of finance over production.
- Growing importance of "knowledge creation" and "knowledge structure", knowledge and information as increasingly important factors of production.
- Transnationalization of technology and the increasing rapidity with which technologies become redundant increase the emphasis on "knowledge industries".
- Rise of global oligopolies in the form of transnational corporations (TNCs), corporations must "become global" acting simultaneously in a number of different contexts.
- Globalization of production, knowledge and finance, leading to a decline in the regulative power of nation-states.
- New "freedom" of capital from national regulative control and democratic accountability, leading arguably to increasing poverty, social fragmentation, and environmental destruction.

Time and space do not allow for the volumes, which could be written arguing that the entire Soviet command economy was placed under fatal strains by these globalization processes. One simple fact may be used to illustrate this line of argument. The Soviet economy became increasingly left behind technologically as Five-Year Plans became ever more obsolete as Western just-in-time manufacturing led to entire product cycles commonly being far less than five years in duration. The OPEC embargo in the seventies wetted the Soviet bosses appetite for windfall profits from petroleum exports. Reasonable may disagree as to whether or not "shock therapy" was even tried in Russia, but what has become ever more clear is that culture and history and rather than purely economic theory may be a better predictor of Russians collective economic behavior. While the total number of Russian private enterprises has grown from something like 1.2 million in 1995 to nearly 2.9 million in 2003, there is not clear link between Russia's market reforms and embrace of a type of "cowboy" capitalism and its practice of democracy and development of democratic institutions. Practically overnight, Russia's middle class was eliminated and replaced by a highly wealthy *novo riche* populated to a considerable degree by former CPSU members and apparatchiks and tens of millions of poor people. Primed by high oil prices Russia's economy grew at a rate of 7.2% last year, but the wealth declines steeply away from the handful of cities and raw material rich regions which have been able to enter the global market.⁹

The Historical Legacy¹⁰

Soviet Legacy and Inheritance. Academic discussions of environmental issues had already emerged in Soviet scientific circles in the 1960s.¹¹ During the late Soviet period, a number of precursors to Russia's state environmental protection in the 1990s had emerged. An elaborate set of environmental laws and several agencies required a detailed reporting of environmental conditions and violations.¹² But those laws existed largely on paper rather than in practice. Legislation such as the 1960 Law on Air Protection and the 1972 Water Code established seemingly strict norms, in some cases stricter than in the West, but in practice those norms were not widely enforced.¹³ Soviet factory managers often misreported water effluent and air pollution data. A number of Western specialists have demonstrated that even officially published environmental statistics could be largely inaccurate.¹⁴ The late Soviet period was also a time of relative detente and unprecedented numbers of exchanges between Soviet and Western scientists. Yet the knowledge about environmental issues was considered specialized and not for public consumption or analysis. To an unfortunate degree the Soviet public at large remained without access to scientific knowledge of environmental issues, their health effects, and the extent of environmental degradation in their own country.¹⁵ Soviet officials justified their silence on the topic under the pretense of not wishing to alarm the public with information that the public was seen as unprepared to interpret scientifically.

A number of highly visible cases of environmental disruption nevertheless came to be discussed in the press in the second half of the 1980s as press censorship was lifted. The old environmental cause cerebra from the 1960s, Lake Baikal, once again took center stage.¹⁶ Even the Soviet planners' greatest ambitions for industrialization of the region could not entirely outweigh the threat to the lake's large number of unique biological species. The total number of planned paper plant projects to be built on the lake, especially on the northern shore where the Baikal-Amur-Magistral (BAM) railway line passed, was eventually revised and lowered, and a ban was imposed on the movement of logs on the lake itself.¹⁷ A similar ban on log floating on Baikal's tributaries had been imposed by decree in 1960, but obviously was neither effective nor enforced.¹⁸ Debate over construction of a flood barrier project in Leningrad also captured national attention and debate. The proposed reversal of Siberian rivers in order to make them flow south to the arid lands of Central Asia, which had a long history of debate, much of it translated by Ted Shabad for *Soviet Geography Review & Translation*, once again became part of public discussion.¹⁹ The 1986 Chernobyl incident tragically reinforced the conclusion among the Soviet public that the Soviet government had not placed public health first. Indeed, it has been argued that environmental degradation and its accompanying health consequences played an important role in discrediting the legitimacy of the Soviet state in the eyes of its own citizens.²⁰

Placing the Blame on Capitalism's Institutions. Prior to Gorbachev a common Soviet refrain was that environmental problems were the natural outcomes of capitalism's institutional triad of private property, the profit motive and "free market" competition, all of which create powerful incentives for individuals and firms to generate environmental externalities or social costs by discarding their unwanted industrial, mining, forestry and agricultural by-products into the air, water, and land of the surrounding environment; thereby lowering their production costs and increasing their entrepreneurial competitiveness in the market place. Indeed, Western economic theorists since the time of Pigou's writings in the 19th Century developed and honed such arguments. Soviet leaders pointed to the work of Pigou to affirm this perspective to Western observers and their own citizens as environmental problems began to surface in the former Soviet Union. They attributed these problems to vestiges of capitalism rather than to shortcomings of the Soviet command economy or rapid economic growth in general. Accordingly, while the environmental movement in the West was burgeoning rapidly even before the first Earth Day in 1970, Soviet and Marxist theoreticians and policy makers were arguing that Western environmental problems provided convincing empirical evidence that capitalism and its profit related greed breed environmental disruption and destruction.

The Soviet Theoretical Ability to Prevent Environmental Problems. The Soviet Union's leadership's counter-argument was that lack of capitalism with its private property rights, private profit motive, and free markets protected her from serious environmental problems. For example, some four decades ago the Soviet academician, Professor

N. A. Gladkov, asserted that: "In the Soviet Union it is not as if there were need of special measures for the protection of nature as the very structure of Soviet society founded on a planned economy and on the absence of private property ensures the preservation and growth of the natural world."²¹

The Soviets, thus, attempted to build implicitly, if not explicitly, their own environmental policy from their mainly improvised institutional "troika". The "troika" comprised: 1) state ownership and collective ownership of property based on the labor theory of value replacing private property, 2) a system of administrative and employee bonuses to replace the profit motive, and 3) central planning and allocation of resources and products to replace the market. Igor Petryanov (1979, 53), a former editor of *Khimiia i zhizn'* [Chemistry and Life] and a Soviet scientist argued, "...that the prerequisites for the most prudent use of resources of the biosphere are in the Soviet social system itself" and that a technologically "planned" society rather than a biologically "open democratic society" was the best hope for human ecological survival.²² A 1979 article in *Ekonomicheskaiia gazeta* was more blunt in its claim that: "History shows us that the sole objective of capitalist society is gain - the maximum possible profit. This attitude predetermines a destructive impact on nature. It's not only Marxists who point to capitalism as responsible for the destruction of the biosphere. All objective scholars realize that, despite certain rays of hope, the ecological situation remains alarming, and there is only one reason why these problems persist - the search for a quick profit....In contrast to capitalist production, which plunders nature, the socialist system, based on a planned economy, ensures an improvement of the environment, providing genuine guarantees that mankind will be able to ward off the threat to the ecology."²³

On the contrary, however, for over thirty years, from 1970 to the present, Western scholars as well as many Soviet /Russian scholars, scientists and policy makers have pointed to a multitude of serious and pervasive Soviet environmental problems that were not prevented, and, in fact, were engendered or exacerbated by the Soviet command economy's institutional "troika."

The Soviet Practical Propensity to Pollution and Degrade the Environment. The Soviet "troika" with its three Soviet institutional "horses" emphatically did not create a stable and wise environmental policy sleigh upon which to controllably slide forward toward a wise stewardship of the environment. In the labor theory of value resources from the environment are considered to be free goods and their value only represents embedded labor. The application of labor theory, did, indeed, generate absurdly low planned or "assigned" prices on environmental resources that led to enormous waste and inefficiencies in the Soviet economy. The managerial reward system with its reliance on bonuses for plan fulfillment transmogrified capitalist profit maximization into equally environmentally damaging incentives for production maximization. The best that can be said for the belief that central planning and allocation of resources would eliminate and preclude all environmental problems is that it was profoundly naïve. Other command economy impediments and shortcomings included: 1) its vertical - as op-

posed to horizontal – information flow structure with its incentives to distort and hind critical information needed for rational “planned” decision making, 2) a myriad of administrative failures, 3) non-aligned social preferences amongst the party *apparatchiki*, *nomenklatura*, scientists, and the average citizens, 4) the failure of political pressure by independent conservation/environmentalist forces, 5) an ideology – partially fueled by xenophobic fears – bent on rapid economic growth at any cost, and, more difficult to prove, 6) the sheer geographical vastness of the Soviet Union lead to an insidious form of complacency regarding the environment.²⁴

Even more naïve would be the opposite conclusion that the lack of planning in some non-transparent manner translates into sound environmental policies! Obviously, the manner in which humans interact with the environment as they individually and collectively pursue their economic lives is critically important and both crosscuts and must inform all institutional frameworks. Different institutions and policy instruments can yield similar harmful environmental results as environmental destruction case studies from both capitalist and command economies abundantly and tragically reveal. Thus, as the nation transitions away from a command economy, the fundamental Russian environmental policy challenge from an institutional capacity building perspective is to adopt policies and policy tools that stem environmental deterioration and foster ecologic-economic sustainability. Concomitantly, the new Russian Federation and her citizens must invest in and create the human, technological, and financial will to implement new scientifically, socially and economically sound environmentally related policies and actions. Unfortunately, the Russian Federation’s economy seems to be moving towards several unbridled “wild west” forms of economic institutions and behaviors that will only hark back to a Pigouian analysis, or resurgent capitalism, as the institutional explanation of environmental problems while the environment continues to suffer, threatening both ecological and human health.

USSR to Russian Federation: Environmental Policy in the Transition Years

Legal Framework and Policy Tools of State Environmental Protection in Russia.

The development of state environmental protection in Russia since the collapse of the Soviet Union has closely paralleled the process of emergence, growth, and consolidation of Russian democratization. The period has been characterized by increasing attention to state environmental protection during the *glasnost*’ period in the mid and late 1980s, the strengthening of that protection during the 1990s, a devolution toward regional environmental protection responsibility in the mid-1990s, and the eventual consolidation of state environmental protection into Putin’s “strengthening of vertical power” (*ukreplenie vlastnoi vertikali*). State environmental protection during this period has been marked by remarkable evolution and change, but also by continuity.²⁵ After more than

a decade of reform in Russia, state environmental protection in Russia resembles more the Soviet state's approach to exploitation of the natural environment than it has in any period since the collapse of the Soviet Union. The periodization that follows traces the institutional context of the developments (and the subsequent near dismantling) of state environmental protection in Russia from the *glasnost*' period to the present time.

Emerging Focus on the Environment. Yet a public response to environmental degradation on the whole had remained stifled until the last years of the Soviet Union as a result of the paucity of available information on the subject. As one environmental specialist has written: "The seventy-three year history is a history of systematic misinformation on the environmental situation in Russia."²⁶ Criticism of the Soviet government's lack of divulgence of public information turned out to be well founded when the floodgates of information on the actual state of the environment in Russia were opened. Heated debate and criticism in the Congresses of Peoples' Deputies in 1998 and 1989 came to focus to a large degree on environmental degradation and especially its health consequences. The Soviet regime's cavalier approach in its exploitation of the natural environment began to be fully revealed to the public. Public opinion polls of this period showed that the environment ranked second or third among the problems that most concerned the nation's citizens.²⁷

As a result of the growing attention on the degradation of the Soviet Union's natural environment, a January 1988 Soviet government decree established the USSR Committee on Environmental Protection and Natural Resource Use (*Goskompriroda*). It was to replace a much weaker USSR Council of Ministers' Commission on Environmental Protection. *Goskompriroda* would be responsible for the environmental protection of Soviet natural resources. Beginning in 1989, a series of State annual reports on the state of the environment provided the first official account of environmental conditions and environmental protection efforts in the Soviet Union. The annual reports aimed "to promote the dissemination of verified environmental information, the mobilization of society's efforts to improve the environment, and rational use of natural resources, as well as the adopting of effective management decisions in this sphere."²⁸ The reports presented a compilation and synthesis of the work of a large number of environmentally related agencies and specialists and, indeed became, as the 1999 report would state, a "unique" government document.

New legislation was promulgated under Mikhail Gorbachev and became the 1991 Law on Environmental Protection. The law specified 1) a citizen's right to a healthy and safe environment; 2) a citizen's right to form environmental associations, to obtain information, and to seek legal redress for environmental change; 3) environmental responsibilities of the federal and other governmental levels; 4) environmental obligations of enterprises; 5) a state ecological examination system; 6) environmental liability; and 7) creation of an environmental funds system.²⁹ Other earlier laws, such as the 1982 Law on Air Protection, remained in force. Contradictions between new laws and existing laws would remain a hallmark of the reform period. Gorbachev also appointed a special

presidential advisor to work on environmental issues. Alexei Yablokov, a highly respected biologist and member of the Academy of Sciences, served as a highly visible presidential advisor into the beginning of the Yeltsin presidency.³⁰

Press reports during this period carried more and more revealing details about environmental degradation that had taken place during the Soviet period. A Russian translation of "Ecocide in the USSR" by the Western specialists Murray Feshbach and Alfred Friendly³¹ reached a wide audience in Russia. Many specialists in the Soviet Union as apocalyptic criticized the book's conclusions, but those same conclusions appeared to many others to be accurate. The activity of environmental NGOs grew significantly during this period. Such influential NGOs as the umbrella Socio-Ecological Union came into existence during this period. The Institute for Soviet-American Relations (ISAR, later renamed Initiative for Social Action and Renewal in Eurasia) opened an office in Moscow. Civil society grew from a small number of dissidents to a fledgling NGO community, as witnessed by the active presence of the Socio-Ecological Union throughout all of the republics of the Soviet Union by the end of 1992.

The new 1993 Constitution of the Russian Federation reinforced the importance and necessity of government environmental protection. Article 9 states that "the land and other natural resources are used and protected in the Russian Federation as the basis of the life and activity of the population inhabiting the corresponding territory."³² Article 42 of the Constitution states that "everyone has the right to a healthy environment, accurate information about its conditions, and compensation for damage to health or property as a result of violation of environmental law."³³ Although budgetary funds were allocated to state environmental protection, inflation and recurring crises of non-payment of transactions, consolidation of funds into budgets, and delays in fund transfers among jurisdictions meant that approved environmental projects were unlikely to reach fruition. Under increasingly difficult economic conditions, the Russian government would attempt to apply a market-based approach to its environmental protection efforts.

In 1992 a "polluter pays" principle was established, based on a system of norms of thresholds and relative multipliers. Ironically, ZumBrunnen³⁴ argued for the use of such economic levers as effluent charges back in 1975 at a joint Soviet-American conference on water quality under the auspices of the Nixon-Brezhnev Environmental Accord and again in 1992 at the First Congress of the International Ukrainian Economic Association in Kiiv, Ukraine.³⁵

Goskomprroda and the Ministry of Finance together became responsible for implementing this pollution charge program. In 1994, an official new document, titled the "State Strategy of the Russian Federation on Environmental Protection and Sustainable Development," came to be the basis for many of the operative principles of *Goskomprroda*. A biennial action plan, the Government Action Plan for Environmental Protection for 1994 and 1995, also contained about 100 priority environmental measures.³⁶ At the same time, the Ministry of Natural Resources was created in 1996 on the previous foundation of the Committee of Geology and Natural Resource Use.³⁷

Under the Instituted Russian scheme all polluting sources above a certain threshold became subject to a "base charge proportional to emissions or discharges of pollutants."³⁸ An accompanying system of Ecological Funds was established. The intention was to earmark the pollution charges collected for environmental protection only through the framework of the Ecological Funds. Pollution charges became the main source of revenue for those Funds. The resources of the Ecological Funds were allocated on the principle of ten percent to the federal-level, and the remaining ninety percent to the regional and local level. Some conflicts emerged over access to those funds at the local level.³⁹ The total of revenue collected by Ecological Funds is estimated to have been about US\$ 2.2 billion for the entire period from 1992 to 1997.⁴⁰ Recently, Kjeldsen⁴¹ has done a very thorough analysis of the strengths and weaknesses of the role of such charges in generating financial resources for the Federal Ecological Fund (FEF) and financing environmental protection in Russia. His analysis reveals a number of problems with the current "pollution charge" scheme. Most notably these include: 1) problems with determining the magnitude of the charge, 2) charge levels being set too low, 3) exemptions based on environmental investments (the so-called Pollution Charge Exemption Scheme), 4) lack of incentives to reduce pollution due the practice of levying environmental charges for emissions with "maximum permissible levels (MPLs) and "Temporary compliance level (TCLs), 5) budget consolidation of "earmarked" ecological funds into the general budget of a given entity, and 6) the continuing growth of non-monetary transactions in the overall Russian economy. On June 27, 2002, the State Duma gave the first reading of a chapter in the tax code. There had been some reports that enterprises were being refunded the "pollution charges" and that the Federal Ecologic Fund (FEF) was being abolished. This new tax legislation increases the overall number of taxes, and it specifically includes payments for the use of natural resources, including the payment for the use of water objects, for the pollution of the environment and the use of forest resources.⁴² Thus, it appears that the pollution charge scheme will continue. Much less certain is whether it will evolve into an effective environmental protection policy instrument or merely continue to function as a tax revenue-generating device!

The sharp industrial decline in the Russian economy in the mid-1990s meant that air pollution levels and drinking water quality were indeed improving. Some of the improvement came as the result of new air filter and water purification and treatment plants and some by the modest efforts to tackle the huge backlog of broken water mains and sewer pipes needing replacement. But the economic decline was by far and away the largest determinant factor in terms of the decline in industrial pollution levels. Indeed, energy intensity (the amount of energy used per given level of economic output) levels increased in the 1990s. As Russia's economic numbers continued to decline, firms experienced sharper declines in production with only modest savings in their expenditure of energy. Nearly everywhere, financially strapped enterprises often opted to abandon compliance with environmental regulations as their first economizing measure.⁴³ As an in-depth environmental assessment of Moscow's environmental

conditions has concluded, many of the expected improvements in environmental quality have not materialized.⁴⁴

Goskomekologiya and the Devolution of State Environmental Protection. Government Decree Number 643 of May 26, 1997 replaced the Ministry of Environmental Protection with the State Committee on Environmental Protection (*Goskomekologiya*).⁴⁵ This loss in status of a state environmental protection agency came soon after Yeltsin's second election victory in the spring of 1996. The decision reflected a renewed interest in natural resource exploitation at the expense of a lowering of the stature of state environmental protection. *Goskomekologiya's* stated tasks were to 1) implement and coordinate environmental policies; 2) develop environmental policy instruments; 3) implement state ecological examinations and inspections; 4) manage nature conservation; 5) establish and supervise environmental norms and standards; 6) prepare reports on the state of the environment and provide technical advice; and 7) manage the Federal Ecological Fund.⁴⁶ A final sphere of responsibility of *Goskomekologiya* involved international environmental cooperation.⁴⁷

Goskomekologiya held offices at the republic, oblast, and krai levels. At the republic and oblast level, *Goskomekologiya* maintained a relatively large amount of independence, often siding with local needs rather than federal-level preferences. In St. Petersburg, for example, the city-level administration for environmental protection was often at odds with *Goskomekologiya*, especially as concerned the distribution of resources of the regional Environmental Fund.⁴⁸ A number of other federal bodies also had jurisdiction over environmental protection issues. Those bodies were 1) the Ministry of Public Health, 2) Ministry of Emergency Situations, 3) the State Committee for Land Policy, 4) the State Committee for Fisheries, 5) the Federal Forestry Service, and 6) the Federal Service for Hydrometeorology.⁴⁹ The appointment of visible scientific bureaucrats, such as Victor Ivanovich Danilov-Danilian, the former minister of *Goskompriroda* (affectionately called Dan-Dan by some Russian environmentalists), as chairman of the new *Goskomekologiya* provided some continuity from the former *Goskompriroda*. He continued to serve as chairman until the dissolution of *Goskomekologiya* in April 2000.

The record of *Goskomekologiya* was decidedly mixed. An evaluation of the success or insufficiencies of *Goskomekologiya's* environmental protection record depends in large part on the local perspective. Reasonably well-trained and increasingly experienced ranks of thousands of inspectors had emerged by the end of the 1990s. Cases of bribery of those inspectors or other *Goskomekologiya* officials undoubtedly existed, but they appear to be the exception rather than the rule. Larger environmental projects appeared to be going ahead in the late 1990s, especially once the August 17, 1998 financial crisis had subsided. *Goskomekologiya's* offices communicated relatively openly and regularly with the environmental NGO community.⁵⁰ *Goskomekologiya* began to create World Wide Web-based environmental information resources.⁵¹ Devolution of power within *Goskomekologiya* from the federal to the regional and local levels appeared to be providing both opportunities for creative environmental problem solving of environmental is-

sues on the local level, but also for abuse and violations. In Bashkiria, for example, a dam was under construction in an area that was also considered part of a national park.⁵² Elsewhere, *de facto* decentralization meant that decision-makers at the local level were "left to fill in the gaps" as they saw fit.⁵³ On balance, *Goskomekologiya's* work found both supporters and critics, but even its most vocal NGO critics would soon be appalled by the prospect of the agency's subsequent dismantlement.

Dissolution of Goskompiroda and Transfer to Ministry of Natural Resources.

Vladimir Putin's ascendancy to the presidency, first as acting president on December 31, 1999, and then by an overwhelming electoral victory three months later, resulted in a major retrogressive course reversal for state environmental protection in Russia. Putin's self-proclaimed ideology of "strengthening of vertical power" sought to rein in the relative independence of the regions that had emerged in the 1990s.⁵⁴ Within two months after having assumed power as Russia's president, Putin issued Decree 867 that liquidated *Goskomekologiya* and transferred its responsibilities to the Ministry of Natural Resources. The May 17, 2000, decree also abolished the Federal Forestry Service and transferred its responsibilities to the same Ministry of Natural Resources. The 200-year-old Forestry Service had numbered about 100,000 employees.⁵⁵

Putin's decision appeared to be a reaction to a number of events: 1) the devolution from centralized to decentralized management that had occurred within *Goskomekologiya*, 2) the August 1998 devaluation of the ruble, from which Russia's economy has begun only slowly to recover (though the devaluation is now widely viewed as a positive event from the point of view of economists), and closely related, 3) renewed state support for an unencumbered exploitation of Russia's natural resources in order to revive Russia's economy as quickly as possible. The fallout from Decree 867 was almost immediate among Russia's nascent, but increasingly cyber networked environmental NGO community. Expressing disbelief several NGO representatives clung to the point of view that the decision must have been made without Putin's approval, and that the decision would soon be annulled. Such a large-scale elimination of a federal environmental protection agency appeared unprecedented for any industrialized country at the beginning of the twenty-first century. Despite some publicly expressed reservations by NGO representative about the objective record of achievements of *Goskomekologiya*, the former agency found an unlikely source of public support within the environmental NGO community.

The Socio-Ecological Union, Russia's largest umbrella organization of environmental NGOs, decided to collect the requisite number of citizen signatures (2 million by Russian law) in order that an officially sanctioned national referendum be conducted on three environmental questions, two of which were directly related to Decree 867. The three questions proposed for the referendum, and for which a signature drive was launched immediately, were 1) "Do you agree with the decision to abolish Russia's state environmental protection agency (*Goskomekologiya*)?" 2) "Do you support the import of nuclear wastes from abroad into Russia (a common practice during the Soviet period; this

practice had been stopped in the early 1990s by law)?” and 3) “Do you support the abolition of the federal forest agency?” Question 2, in particular, while not directly related to Decree 867, was strategically included as one of the three questions on the signature drive for the proposed referendum. The Russian environmental NGO community anticipated that such a question would elicit an unambiguously negative reaction among the Russian public.⁵⁶

From May through September 2000, representatives of more than 100 environmental NGOs in more than 50 cities in Russia worked to publicize the signature drive. They organized petition stands at city center locations and at specially organized events, and in general worked tirelessly to collect the required number of signatures for conducting an official referendum at the national level. The effort proved to be a well-coordinated and sustained one, and by the end of September 2000, almost 600,000 more signatures had been collected than the requisite two million signatures for a national referendum to be approved and conducted. But upon a technical review of the signatures by the Central Election Committee in Moscow (that review was conducted in Moscow as well as locally), the Central Election Committee made a concerted and swift effort to eliminate signatures on technical reasons.⁵⁷

On November 29, 2000, the Central Election Committee ruled on the basis of incorrectly abbreviated addresses and a number of seemingly innocuous technical points that an insufficient number of signatures had been collected (i.e., less than 2 million) for a national referendum to be held on reinstating a state environmental protection agency. An official court appeal by the Socio-Ecological Union resulted in an officially stated reaffirmation of the Central Election Committee's original finding that 600,000 votes were missing.⁵⁸

In a further blow to the organizers of the original signature drive, in June 2001 President Putin signed a decree to permit the import of nuclear waste into Russia for the reported purpose of reprocessing. A reported 20 million dollars would be earned from this reprocessing, though the details of the exact source of that revenue have never been publicly released. The Ministry of Atomic Energy argued that such funds were required so that the Ministry could clean up existing nuclear waste sites in Russia, a conclusion that has been viewed as largely spurious among environmental specialists in Russia and the West.⁵⁹

The Russian government ostensibly sought to find some common ground with the Russian environmental NGO community in the fall of 2001 when it conducted a highly publicized “Civic Forum” with NGO representatives invited from throughout Russia. Putin addressed the representatives in person voicing support for their work. But it would appear that his pledge of support was only partially genuine or at least fleeting, as no follow-up activities have been conducted since the Forum. As has been noted, “the state is in no shape to support public movements, and moreover it has little interest in encouraging them.”⁶⁰

The “Strengthening of Vertical Power” within the Ministry of Natural Resources. This most recent period has widely been seen as one of the “de-greening” (*de-ekologizatsiia*) of the Russian state.⁶¹ Any hope that the newly re-created Ministry of Natural Resources might retain any substantial state environmental protection appears to be largely without justification. *Goskomekologiya*'s previous ranks of inspectors, reduced significantly in size from their original numbers, have become a subordinate part of the Ministry of Natural Resources. The loss of expertise from the former *Goskomekologiya* will likely be long lasting. “We have witnessed a sudden and nearly complete collapse [of state environmental protection], marked by a mass exodus of staff, problems with document circulation, and silence in response to official inquiries,” one NGO representative has concluded.⁶² Further suggestions have been made that the new Ministry of Natural Resources has been designed to orchestrate the upcoming privatization of forestlands to benefit the appropriate oligarchs.

In some exceptional cases, city administrations have been successful in retaining their city-level administration for environmental protection. For example, in the case of St. Petersburg the administration-level environmental agency has been recently renamed the Administration for Environmental Safety and Natural Resource Use. Despite its new name this agency appears to have retained its environmental protection responsibilities in full. But such positive examples appear to be the exception rather than the rule. Further attempts to create the outward appearance of retaining the trappings of a state environmental protection agency seem to have been lost on the Putin government. State-sponsored environmentally sensitive/threatening initiatives, such as the recently completed Baltic Pipeline System or oil extraction development on Sakhalin Island and offshore in its coastal fishing grounds, have instead not surprisingly met with no resistance or significant interference from within the Ministry of Natural Resources from the point of view of environmental protection. As one Russian commentator has observed: “There simply is no environmental policy in Russia – the existing policy could actually be construed as intending to destroy environmental policy.”⁶³

If any positive developments have occurred in terms of state environmental protection since April 2000, it may be in terms of the improvement of accessibility to some basic environmental information resources within the Ministry of Natural Resources. The annual reports on the “Status of the Environment” are readily available on-line at the Ministry's website. One of the major drawbacks of the annual reports produced by the oblast-level offices of *Goskomekologiya* had been their very small press runs. Also official environmental publications are with increasing frequency being made available on oblast-level websites. The Ministry also funds two newspapers with environmental coverage, *Prirodno-resursnye Vedomosti* and *Ekologicheskaiia Gazeta Spasenie*, though each has an admittedly government rather than activist perspective. Those public officials who did not regret the passing of the former *Goskomekologiya* remain optimistic that a better financed agency, the Ministry of Natural Resources, will provide more opportunities for investment in environmental infrastructure such as waste water and

purification plants than *Goskomekologiya* had in the past. But such optimists are also admittedly few.

Human Rights and Environmental Whistleblowers in Russia. Human rights issues remain critical for Russian environmental activists, as the cases of Grigory Pasko (a naval journalist accused of revealing naval secrets concerning dumping in the Sea of Japan) and Igor Sutiagin (accused of spying and transferring state secrets to Western government representatives, though he has demonstrated that his only sources were from the public record) continue to demonstrate. The acquittal of Alexander Nikitin, after more than five years of court proceedings and delays and a one-year jail term, appears to be an exception that was made for a Russian whistleblower under the lobbying pressure and publicity campaign successfully aimed at the court of world opinion. As has been noted, Russian courts do not have a good record of independence.⁶⁴ Incidents of employee firings at nuclear power plants and other environmentally sensitive sites continue to occur regularly as whistleblowers attempt to bring environmental risks to the light of the public. Russian environmental NGOs' almost inevitable reliance on foreign financial assistance (especially under conditions of active opposition to so many of the Russian government's current policies) continues to come under attack from the highest levels of the Russian government. From the point of view of Western governments, however, this support is one of the best possible peace dividend investments.

Alexander Nikitin, a former Naval officer based in Murmansk, drew the wrath of the Russian military establishment in co-writing a report for the Norwegian NGO Bellona on the topic of nuclear hazards from the Soviet and Russian navy in the Barents Sea region. Nikitin was arrested in February 1996 and held in solitary confinement for 14 weeks. After more than a year in prison for alleged spying and release of state secrets to a foreign government, he was released and drew international attention to human rights abuses on Russian whistleblowers. Nikitin was later fully absolved of his accusations, but only after two years of highly public trials that to many viewers revealed to what extent some authorities would go in an effort to conceal environmental information if it was considered even remotely related to militarily sensitive information and activities. The Russian Supreme Court eventually heard his case. Nikitin's conviction created an outrage both internationally and in Russian environmental NGO circles. Nikitin's lawyers, engaged by Bellona, were seen as having played a critical role in Nikitin's acquittal. The fate of another Russian whistleblower, Grigory Pasko, has been less fortunate. Pasko worked as an investigative journalist for the newspaper of the Russian Pacific Fleet, "Boyevaya Vakhhta," where he focused on nuclear safety issues. He was arrested by the Russian Security Police (FSB) in November 1997 and accused with committing treason through espionage when working with Japanese journalists. The Court of the Pacific Fleet acquitted Pasko of the treason charges in July 1999 and released him under a general amnesty. Yet the Military Collegium of the Russian Supreme Court reversed the verdict in November 2000 and sent the case back to the Pacific Fleet Court for a re-trial. Pasko was next sentenced for four years of prison in December 2001. Whether or

not the Russian Supreme Court will hear his appeal remains unresolved and a decision was expected in June 2002. Both cases came to be highly publicized in Russia and have been viewed as critical indicators of the tolerance of the Russian government toward environmental whistleblowers in general.⁶⁵

Conclusions

The cycle of strengthening and weakening of Russia's state environmental protection during the 1990s has had some lasting effects. It can be strongly argued that in the face of opposition the Russian environmental community has emerged stronger. Accordingly, under conditions of a clearly identifiable opponent, the environmental community's efforts might be more effectively targeted and deployed today. The experience of the summer 2000 signature drive has also likely forever changed the Russian environmental community. They proved to themselves that they could coordinate citizenry political action on a national scale. Even if their first attempt did not meet with success, they did make a serious statement of their views to the government. Russian environmental NGOs recently have also been able to begin to recruit some of the environmental specialists who previously worked with the former *Goskomekologiya* (Shvarts 2002). Such levels of expertise assist greatly in counteracting the prevalent image of NGO representatives as uninformed and poorly trained.

Land reform remains a volatile issue under the Putin's government. His government has already publicly stated its intention to move quickly and decisively, and its first land bill easily passed through the Duma in December 2001 without the previous opposition of the Communists. This first stage in Land Reform will permit the privatization of a total of about 1.5% of all of Russia's land. A commonly held point of view is that most of Russia's land has already been *de facto* privatized, and that any new land reform will simply normalize an already existing set of conditions that have emerged from the chaos of the 1990s. The Russian environmental NGO community's reaction to that land reform has been largely muted. Putin demonstrated that his government would move forward with land reform without the niceties of a full-fledged public discussion (not unlike the case of the Stolypin Reforms at the beginning of the 20th century).

It is possible that the recent dismantlement of state environmental protection may be limited in the realm of international environmental cooperation, due to the fact that Russia is the co-signer of a large number of international initiatives and bi- and multi-lateral environmental programs.⁶⁶ Indeed, Alexei Yablokov, who is now head of the Center for Environmental Politics in Moscow, has called for a more active stance on the part of the U.S. government to assist in blocking the import of nuclear waste into Russia in the future as the U.S. controls the vast majority of those wastes on a world-wide scale (speech by Yablokov at Washington, DC meeting, March 2001). Alexander Nikitin's recent efforts in the human rights' realm have included the active solicitation of support

from foreign NGOs to draw attention to human rights abuses in Russia. His work is an indication not only of the continuing opposition the environmental NGO community in Russia confronts in the face of the Russian government, but also of the Russian NGO community's continuing dependence on the outside world for both financial and moral support.

The environmental policy challenge that the new Russia faces in terms of environmental degradation and continuing environmental disruption remains considerable and serious. Russia must address not only new environmental challenges, but also work to repair the widespread ecological damage inflicted by a particularly destructive recent past.⁶⁷ While a sustained economic upturn in Russia might lead to legislative and bureaucratic reform in state environmental policy in the future, the current status of state environmental protection in Russia appears to be only marginally improved over that of the end of the Soviet period. Despite significant results during the 1990s in terms of state intervention to improve Russia's natural environment, the period of seemingly genuine concern for the environment would appear to have passed. Indeed, one well-known environmental NGO representative has called the Ministry of Natural Resources' steps in 2002 to be "reminiscent of the 1930s-1950s" in terms of its (Stalinist-like) style of leadership.⁶⁸

Current developments would appear to prevent the likelihood of the re-emergence and strengthening of state environmental protection in Russia any time soon. The Ministry of Natural Resources has a mandate to decide any environmentally controversial question on the side of increased natural resource extraction and profitability. Indeed, it would be difficult to envision a government-sponsored project that might be stopped by the Ministry of Natural Resources on environmental grounds, given the stated and express purpose of the Ministry to prioritize the extraction and use of natural resources for Russia's at least short-term economic advantage. Its purpose to prioritize economic development is unambiguous. At the same time, as long as economic policies and incentives at the state level give the appearance of promoting the practical challenges of Russian citizens to live a "normal" life, a strengthening of state environmental protection policies and practices will likely be seen as a luxury for Russia's leaders for a good time to come. Only as more and more Russian citizens fervently come to appreciate their well being not only in terms of their material wealth, but also in terms of the health of their children and of the recreational opportunities of an unpolluted environment will the Russian state in future feel obliged to adopt positive environmental protection policies. Ending on a more positive note, there is some very recent good news on the environmental front as Putin has committed Russia to signing the Kyoto agreement as part of the compromise with European Union nations to garner their support for Russia joining the WHO. This action will leave the United States ever more isolated internationally for its unilateral decision to refuse to even bring the Kyoto accord to a vote. Carbon capping and trading will now begin, but with Russia's carbon credits not nearly as valuable as they would be if the United States had become a signatory to the Kyoto protocol.⁶⁹

Notes

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