

2003, with only processed wood products allowed for export thereafter (see p. 171). According to the U.S. and Foreign Commercial Service, a division of the U.S. Department of Commerce, this would not only create new jobs but also increase profits three- to fifteenfold.¹⁷¹ Such a radical transformation, however, would require massive investment, which is unrealistic to expect as continued corruption discourages Russian and foreign timber companies from the long-term investments needed to develop processing. These companies would rather keep their profits abroad than reinvest. The effort to ban raw log exports also faces stiff resistance from certain ministries in Moscow that are preparing the country for entry into the World Trade Organization (WTO), which is likely to consider such a measure protectionist. Finally, some within the timber industry, fearing the loss of the Asian log market, would resist the ban as they did when the Primorsky administration passed a decree in 1998 banning the export of ash logs. The regional prosecutor overturned the 1998 ban after complaints from certain individuals within the industry.

Timber certification. Corruption will also hinder efforts to establish forest certification, which NGOs such as the Forest Certification Center in Khabarovsk promote as a tool to ensure sustainable forest use and management. The most progressive of the major certifying agencies is the Forest Stewardship Council, an NGO that defines certification as “the process by which the performance of on-the-ground forest operations are assessed against a predetermined set of environmentally sound standards.”¹⁷²

Even if such a system were in place for some timber operations, monitoring to ensure that companies follow the standards would be as problematic as setting up roadblocks. Illegally logged timber would find its way into shipments of certified timber; this happens in Indonesia, where forest certification is expanding rapidly.¹⁷³ In addition, certification will be slow in the RFE because unlike Western European and U.S. consumers, Japanese and Chinese buyers have shown little interest in certified timber.

Addressing corruption. Addressing illegal logging, rejuvenating processing, and introducing forest certification all hit the same roadblock: corruption. For successful industry reform, government at the highest levels must first flush out corrupt forest agency workers, and customs, militia, and other government agency officials. Then, relevant agencies need to enforce strict regulations for all forms of illegal logging and trade, and large fines and incarceration must be imposed. This effort will require sustained commitment and funding by the government, both of which are in short supply.

International responses. The Chinese, Japanese, and South Korean governments could work with the Russian government to slow the flood of illegal timber. Such cooperation should be multilateral, but bilateral cooperation would be a start. Russia has attempted to control illegal exports through its intelligence and security agencies, including divisions of the Ministry of Internal Affairs and the Federal Security



Hiroki Sugaya

Another short-lived house in Tokyo.

Service (FSB), as well as through inspection units in the Ministry of Natural Resources. Companion agencies in China, Japan, and South Korea need to be given a mandate to work with these agencies and divisions.

A centerpiece of cooperation must be to tighten key export points by, for example, stringently checking for harvest-restricted timber species such as Korean pine and by thoroughly inspecting all documents. Unlike marine products—which are difficult to regulate because they are often traded on the open sea—timber goes through a limited number of land checkpoints and seaports. Real progress could be made in Chinese-Russian trade as the timber is exported essentially from three points: Zabaikalsk, Gorodekova, and Manzhouli.

China, Japan, and South Korea must also enact policies to reduce overconsumption of wood products. In the short term, doing so in China is a complicated proposition. First, civil society in China remains far too weak to press the Chinese government to enact policies aimed at reducing consumption (this might be more fruitfully done through international agencies such as the World Bank and the Asian Development Bank). Second, Chinese wood consumption per capita is much lower than in other industrialized countries; it would be difficult for international NGOs, foreign government agencies, and international institutions to call for reductions when the United States, Japan, and Europe remain so wasteful. Third, Russian timber is not only for domestic use in China, a good portion of it is processed and exported abroad as sawnwood, plywood, and furniture. Chinese imports of Russian hardwoods, for example, supply one of China's fastest growing export industries: furniture. To effectively address Chinese overconsumption of Russian logs, one must therefore also address consumption in those industrialized countries that import Chinese wood products. Despite these



Vladimir Sopaev

Charred remains from the fires of 1998, southern Khabarovsk Krai.

difficulties, it will be crucial to address Chinese consumption of wood products as China will become the world's largest importer of timber.

Addressing overconsumption in Japan is less equivocal. As the world's largest importer—and a major consumer of Chinese wood products—the Japanese government and industry are no strangers to criticism of their wasteful wood use. In the early 1980s, NGOs and scholars, both internationally and within Japan, called attention to Japan's use of tropical timber from Malaysian, Indonesian, and Philippine rain forests to build houses. The most notorious such use was to make *kompane*, a plywood sheet used to build forms in which to pour concrete.¹⁷⁴ *Kompane* is usually used twice and then discarded or burned. After enduring years of criticism, the Japanese timber industry began to shift from tropical log sources to temperate ones. To make plywood, the industry is gradually replacing tropical luan wood with larch. Plywood associations now promote Russian larch as a “green” alternative to luan and have steadily increased import levels over the past decade.

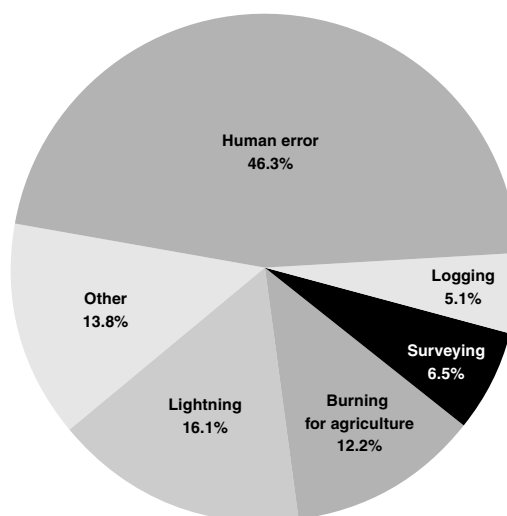
Unfortunately, simply shifting to new supply sources will only create new environmental problems. Increased use of larch could have major long-term implications for Russian forests and potentially the global climate. As map 1.3 (see p. 14) shows, 98 percent of all Russian larch grows on some form of permafrost; unsound logging could melt this frozen ground, thereby releasing methane gas and CO₂ and reducing the capacity of Russian forests to serve as a “carbon sink.”

In Japan, about 75 percent of Russian timber is used to build houses, primarily as nonstructural timber and plywood (including *kompane*). Houses last thirty to thirty-five years, due to a “scrap-and-build” housing policy supported

by government, finance, and insurance sectors. One writer described this system as a “constant turnover of housing destruction and construction.”¹⁷⁵ To reduce wasteful timber use, NGOs suggest revising building codes to encourage use of nontraditional materials, dissolving loan policies and regulations mandating limited life spans for houses, and decentralizing housing construction.¹⁷⁶ But with government reformers focused on the Japanese economy, housing reform remains a low priority. Nevertheless, unless changes are made, Japan's impact on Russian (and the world's) forests will continue to be detrimental.

Two NGO reports, *Plundering Russia's Far East Taiga* and *Illegal Logging in the Southern Part of the Russian Far East*, provide more detailed information on the steps needed to address illegal logging and overconsumption in China, Japan, and South Korea.¹⁷⁷ More research addressing South Korea's overconsumption of timber is strongly needed.

Figure 1.7
Causes of forest fires in the RFE, 1987–1997



Source: Economic Research Institute, 1998.

The forest fires of 1998

Fires in the RFE are common: Khabarovsk Krai experiences 700 to 800 fires annually. But the scale of the 1998 fires was unprecedented. Over the preceding 20 years (1977–1997), fires in Khabarovsk burned 2.3 million ha, or an average of 115,000 ha per year; in 1998, more than 1.5 million ha of forestland were burned in 1,262 fires.¹⁷⁸ According to the Khabarovsk Forest Service, about 154 million cu. m of timber stock, worth an estimated 4.6 billion rubles (U.S.\$460 million) was destroyed. On Sakhalin, fires in 1998 burned 100,000 ha, mostly in Tymovskoe Raion, where half the forests were destroyed. Sakhalin forest service officials estimated the cost of fire fighting and the loss of timber and equipment at 670 million rubles (U.S.\$67 million).¹⁷⁹ The Sakhalin Committee on Environmental Protection estimated 50 percent of the area's ground-nesting birds (including game birds), and 10 to 20 percent of the area's mammals were killed in the fires. Nesting areas for three *Red Data Book* species, including two eagle species, were severely damaged. Wildlife biologists in Khabarovsk are still researching the impacts of the fire on large carnivores, such as the Siberian tiger, wild boar, and bear, which all require large habitat areas. Khabarovsk authorities estimated 100 million ha of forest suffered negative impacts on biological processes, leading to reduced carbon-fixing potential. Indeed, sources from the Federal Forest Service reported 900,000 ha of forest completely lost this capacity, and as a direct result of the fires, around 30 million metric tons of carbon were released into the atmosphere over a short period of time. Other environmental impacts include forced early and changed bird migration patterns, river pollution and its effect on salmon-breeding streams, loss of vegetation cover on mountainous terrain leading to soil erosion, and an overall reduction in biological diversity leading to the recolonization of opportunistic species at the expense of other species.¹⁸⁰

One of the most badly damaged areas was Khabarovsk's Nanaisky Raion, where indigenous peoples compose 17 percent of the population and rely on fishing and hunting. Throughout the krai, choking haze and smoke affected one million people, including those in the city of Khabarovsk. Regional sanitation and epidemiological authorities reported carbon monoxide levels three to thirteen times the maximum permissible concentration (MPC) over a period of weeks, with levels periodically reaching twenty-four times the MPC.¹⁸¹

The fires also reduced available regional timber. Some areas may never recover, particularly areas burned previously; the Khabarovsk Forest Service reported 300,000 ha that burned in 1976 are still not regenerating properly. The 1998 fires destroyed some of the most valuable forest stands,

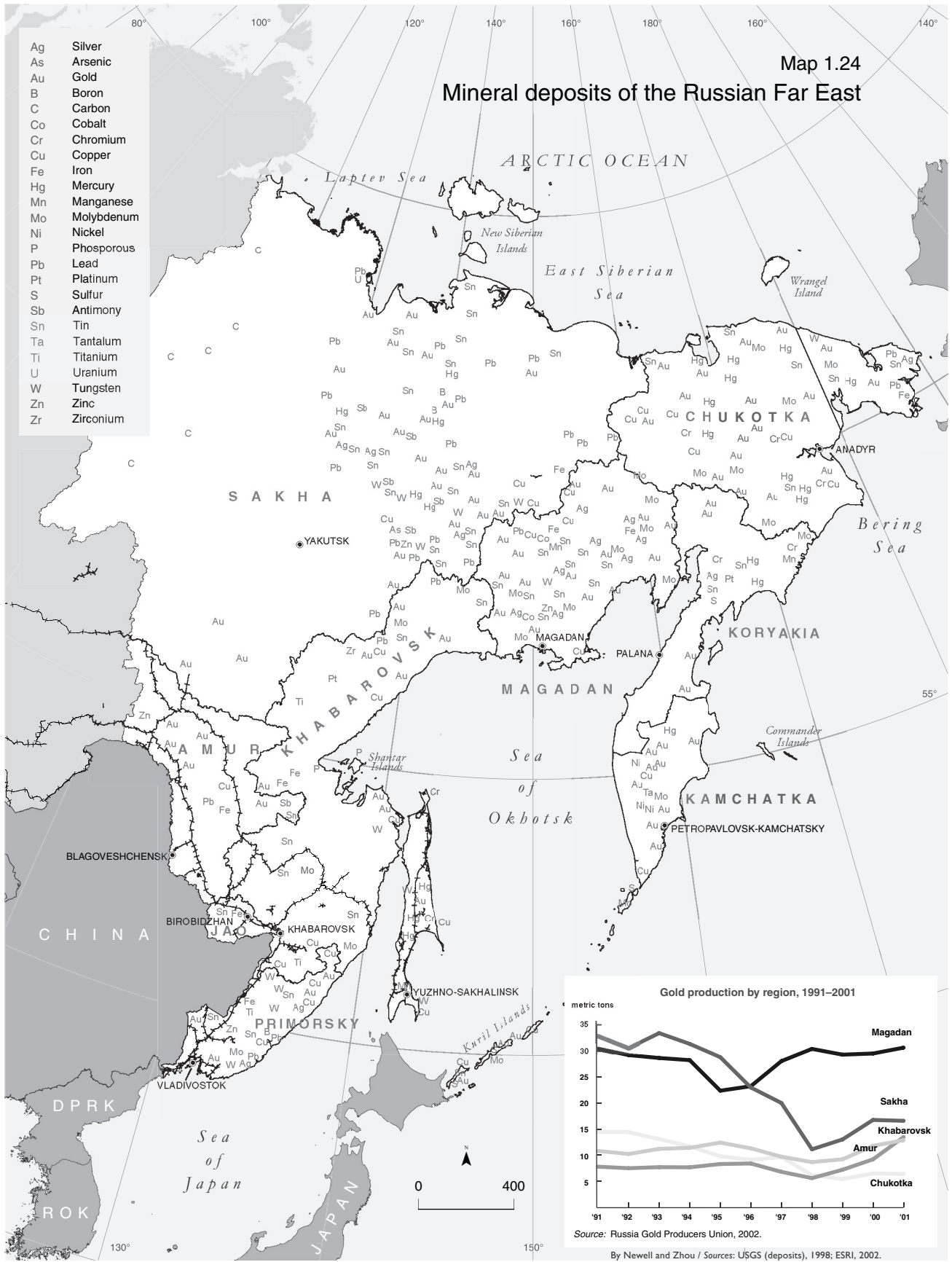
forcing the timber industry to expand into new areas. At least 15 million cu. m of export-grade timber burned, an amount equal to almost three years of reported timber production in Khabarovsk.¹⁸²

Although natural fires are an important succession process in virgin boreal forests, the Forest Service estimates humans are responsible for 70 to 85 percent of the fires in the RFE; this finding is supported in a study by Alexander Sheingauz, who calculated the causes of forest fires in Khabarovsk from 1988 to 1997 (see fig. 1.7). A United Nations Disaster and Assessment Coordination (UNDAC) mission to Khabarovsk found no evidence the 1998 fires were started deliberately, but pointed to difficult economic conditions that “drove many more people to use the forest margins for hunting and fishing; mushroom, berry, and fruit picking,” and speculated that “nonexperienced hunters may have started some fires through careless cigarette disposal, using broken glass to concentrate solar rays, cooking fires getting out of control, etc.” The year was also unnaturally dry: the monsoon summer season provided only 15 to 20 percent of normal rainfall levels, and September and October were without precipitation.¹⁸³

The areas hardest hit were also those most heavily logged (Komsomolsky, Solnechny, Ulchsky, Nikolaevsky, and Nanaisky Raions), drawing speculation as to the connection between logging and fires. In addition to dry weather, Sheingauz pointed to logging waste (branches, logs, and stumps) as a contributing factor to the severity of the fires. Lack of funding impedes the Forest Service from enforcing rules obliging logging companies to clean up such debris. Sheingauz also found forest fires began to increase in the 1930s, when logging operations became mechanized. This process brought in “machines with their flames and sparks . . . people with campfires,” and new logging roads that allowed unprecedented numbers of hunters, poachers, and mushroom gatherers into the forest. A study by the Wildlife Foundation (an NGO) on forest fires and protected areas in Khabarovsk Krai concluded most protected areas were spared from the 1998 fires. They found fewer roads and human activities such as logging and hunting, coupled with the better fire-fighting capabilities of the reserve staff, were the primary reasons for this.

Forest service officials believe the 1998 fires could have been contained to a much smaller area with adequate funding and equipment; in 1988, the Forest Service had four times as many resources at their disposal and lost only about 300,000 ha in similar conditions. The Forest Service also lacks adequate early-warning systems and surveillance patrols.

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Mining

J. NEWELL, D. GORDON—Mines in the RFE are integral to Russia's mining industry, producing rare and lucrative metals and precious stones, as well as more common commodities such as antimony, tin, iron, boron, lead, and zinc. Western Sakha's diamond pipes produce 99 percent of Russia's diamonds, and platinum and palladium deposits in Koryakia and Khabarovsk produce a significant portion of one of Russia's most lucrative exports. About 60 percent of Russia's annual gold production comes from the RFE. Locations of mineral deposits are shown in map 1.24, and a rough picture (reliable data for gems, minerals, and metals are scanty) of mining resources in the RFE and their importance to Russia and international markets is provided in table 1.10.

Mining production declined throughout the 1990s, partly due to lower demand for ferrous and nonferrous minerals from the industry's major buyer, the RFE's military-industrial complex. But high energy and transport costs also make it unfeasible to ship to traditional processing sites in the former Soviet states and other parts of Russia. The RFE mining industry today produces and exports only the most valuable products (diamonds, gold, platinum). These are shipped to Moscow, as required by federal regulation, instead of being exported. There are some exceptions, however; Sakha recently received rights to export a percentage of its diamonds, and Magadan companies export small quantities of gold.

Like other RFE extractive industries, mining wastes enormous amounts of raw material—during extraction at least 20 percent of the minerals mined are wasted. During the enrichment process, losses average 50 percent.¹⁸⁴ This waste accelerates the depletion of deposits at existing mines, and developing new ones may not bring profit: Between 30 to 70 percent of all nonferrous metal ore deposits are unprofitable to develop due to wasteful mining methods and outdated technology.¹⁸⁵ And small mining firms generally lack funds to modernize. (As with the timber industry, the privatization of mining resulted in the fragmentation of large state-owned mining enterprises and the development of numerous smaller ones. In the case of mining, many small independent mining teams, or *artels*, were created.) Determining the size of untapped reserves also requires expensive geological surveys. To increase production, the industry hopes to attract foreign companies, and their western technology and capital. Industry representatives are pressing the Russian government to reform burdensome mining laws and regulations (especially production sharing agreement legislation) and to streamline the taxation structure.¹⁸⁶ President Putin, however, wants to reestablish federal control over the mining industry through legal reforms, with particular attention to the Law on Mineral Deposits.¹⁸⁷

Despite such obstacles, foreign joint ventures (mostly for gold and silver mining) have emerged in almost every region of the RFE. Low production costs (about 60 percent of average costs elsewhere) continue to draw investors.¹⁸⁸ Some ventures

mine existing reserves, such as the Dukat silver mine, but most are developing new deposits. Many of the new deposits are located in wilderness areas, often where other land-use interests compete. The proposed Aginskoe gold deposit in Kamchatka is a case in point. Canada's Kinross Gold Corporation established a joint venture to mine this deposit, located in Ichinsky Zakaznik, a protected area that later became the Bystrinsky Nature Park. The governor, who had originally approved the refuge, quickly altered the park border to exclude the mine site and accommodate Kinross Gold. The project did not go through however; international financial institutions withheld their support as it was inside the Volcanoes of Kamchatka World Heritage Site (see p. 361), and because of pressure from NGOs.

Rather than developing places like Aginskoe, environmentalists and some within the Russian mining industry are asking foreign firms to invest in existing mines.¹⁸⁹ Environmentalists fear foreign firms may shirk precautions and procedures to cut costs. They cite the Kubaka mine in Magadan Oblast as an example. The Kubaka project, made possible by financing from EBRD and OPIC, was launched without a reclamation plan. Project operators rectified that oversight but changed the building plan for the mine after the environmental impact assessment (OVOS) and state environmental review (*expertiza*) were approved, without consulting the public or resubmitting documents for a new *expertiza*. Problems arose soon after production in the toxic form of cyanide leaks from the mine's tailings dam (see p. 278–280).

Environmental impact. From the standpoint of the environment and public health, regulation of mining in the RFE has always been weak. Mining operations have left rock piles and toxic tailings throughout the RFE. Recultivation of mined areas is rare: Disturbed areas remain disturbed. Damage is particularly evident in the north, where the extreme cold slows recovery of fragile northern ecosystems.

Placer mining (hydraulic washing or dredging of gravel or sand) accounts for two-thirds of RFE mining and causes numerous environmental problems, including increasing suspended particle loads in rivers, altering riverbeds, and preventing salmon from reaching spawning grounds. Mining contaminants pollute rivers and streams for long distances (extending environmental damage beyond the mine area by a factor of 7 to 20). During extraction, water temperatures rise in settling basins and dissolved oxygen levels decrease, further impacting fish productivity.¹⁹⁰ In addition to reducing fish populations and polluting rivers, Russian ecologists have documented areas where mining has decreased forest cover, caused erosion, impacted a wide variety of fauna, altered hydrological regimes of rivers and underground streams, and changed the microclimate.¹⁹¹

Most gold mines release large quantities of tailings relative to the amount of gold produced. Each year in the southern RFE alone, mining operations produce more than 30 million

Table 1.10
Resource base and production of strategic metals and minerals

<i>Resource</i>	<i>Regions</i>	<i>RFE's importance for Russia (% of total) (2000 unless noted)</i>	<i>Russia's importance globally (% of total or global ranking) (2000 unless noted)</i>	<i>Production (2000 unless noted)</i>
Diamonds ¹	Sakha	Reserves: 82% Production: 99%	Reserves: 34–50% Production: 26%	RFE: Gems, 10.5 million carats; industrial stones, 10.5 million carats
Gold ²	Magadan, Sakha, Khabarovsk, Chukotka, Amur	Production: 60%	Reserves: 3rd Production: 6th	RFE: approx. 80 tons Russia: 140 tons
Silver ³	Magadan, Sakha, Primorsky, Chukotka	Reserves: +90%		Russia: 375,000 kilograms (1999)
Platinum ⁴	Khabarovsk, Koryakia		Reserves: 40% Production: 24%	Russia: 1,020,000 ounces (including Khabarovsk 129,000 ounces, Koryakia 129,000–193,000 ounces)
Coal ⁵	Sakha, Primorsky, Amur, Khabarovsk	Reserves: 9% Production: 12%	Reserves: 16% Production: 6%	RFE: 30 million tons (1999)
Antimony ⁶	Sakha (100%)	Reserves: 100% Production: 100%	Production: 4th	RFE: 2,000 tons (1999); 6,000 tons (1991)
Mercury	Sakha, Magadan, Kamchatka	Reserves: 50%		RFE: 50 tons (1999)
Iron ⁷	Sakha, Amur, JAO		Reserves: 27% Production: 4th (1999)	Russia: 214 million tons
Tin ⁸	Sakha, Khabarovsk, Magadan, Primorsky	Reserves: 95%	Reserves: 1st Production: 8th (1999)	
Lead ⁹	Primorsky	Reserves: 8% Production: 49%	Reserves: 1st Production: 0.6%	Russia: 43,000 tons (1999)
Zinc ⁹	Primorsky, Khabarovsk, Sakha, Chukotka	Reserves: 4% Production: 14% (1993)	Reserves: 1st Production: 1.5%	Russia: 114,000 tons (1998)
Fluorite	Primorsky (43%)		Reserves: 11% Production: 6–8%	Russia: 331,000 tons (1999)
Fluorspar	JAO, Primorsky	Reserves: 41% Production: 91% (1993)		
Boron	Primorsky	Reserves: 90%		
Tungsten ¹⁰	Magadan, Khabarovsk, Primorsky, Sakha	Reserves: 24% Production: 37% (1993)	Production: 2nd (1999)	Russia: 3,500 tons (1999)

Notes: ¹Russia exported U.S.\$877.4 million, out of total production revenue of \$1.5 billion, in 2000. ²Russia exports 70–80 tons annually. ³Dukat mine (Magadan) holds about 90% of Russia's silver reserves. ⁴RFE exported \$192 million (at U.S.\$600/ounce) of platinum in 2000. ⁵RFE has 13–18 billion tons of coal; possible reserves fifteen times higher. ⁶The RFE has an estimated 238,000 tons. ⁷RFE has 3 billion tons of proven iron reserves. Russia exports 15 million tons annually. ⁸Tin reserves total about 140,000 tons. Major RFE producers are Deputatsky (Sakha) and Solnechny (Khabarovsk) mines. ⁹Dalpolimet is primary RFE producer of lead and zinc. ¹⁰Mined with tin and exported to Northern Caucasus for processing.

Sources: Compiled from: the regional chapters in this handbook; James Dorian, *Minerals and Mining in the Russian Far East* (1997); Richard Levine, *The Mineral Industry of Russia* (1999); *BP Statistical Review of World Energy* (2002).

cu. m of tailings.¹⁹² The use of heavy and toxic metals pollutes soil, water, and air—especially the continued use of mercury to separate gold, despite regulations passed in 1988 outlawing its use. Mercury-contaminated wastepiles line the banks of mined riverbeds. Preliminary studies in Amur Oblast have documented mercury groundwater contamination near mined areas. People in these areas continue to garden, fish, raise cattle, and drink the water. Scientists have also documented high mercury concentrations near gold mining sites in Sakha.

Hard-rock mines, such as in Magadan, have also polluted the environment. Their abandoned mine pits leak acid waste into drinking water and wildlife habitat. Often built with only a berm to contain waste, tailing ponds lack clay or synthetic liners to prevent water pollution.

Government agencies lack funds to clean up abandoned mines. Holding enterprises responsible for abandoned mines is virtually impossible as many have gone bankrupt or

changed ownership, and joint ventures are unwilling to accept responsibility for cleanup at existing sites. Some propose a special tax on mineral production to clean up abandoned mines. Others propose funding reclamation by reprocessing oil found in tailings.

To ensure new mines are properly developed, environmental groups are calling for mining companies to adhere to the highest international environmental standards: detailed reclamation plans, prevention of groundwater pollution, installation of reliable and safe tailings impoundment systems, and financial assurance for all environmental measures, including toxic spill prevention, reclamation, and mine closure. In case of accidents, emergency response plans (and the medical ability to respond) for both the local government and the public need to be in place.

Gold. The RFE produces about 60 to 70 percent of Russia's gold (see appendix K). Magadan and Sakha traditionally

Foreign corporations in RFE mining

Foreign investment in the industry is volatile; companies frequently sell or transfer rights to other foreign corporations. Canadian Western Pinnacle, Ltd., once one of the largest players in RFE gold and silver mining, changed its name to WPN Resources, abruptly divested most of its RFE holdings, and is now involved in international oil and gas speculation, but not in Russia.¹⁹³ Despite WPN's divestiture, Canadian companies remain the largest foreign investors in the industry.

Kinross Gold Corporation. Based in Toronto, Kinross Gold is the largest gold producer in North America. Kinross has a controlling interest (54.7 percent) in the RFE's largest gold mine, Kubaka. From 1995 through 1997, EBRD and OPIC provided U.S.\$130 million in debt financing to build the mine. Associated with Kubaka is the Birkachan gold and silver deposit, of which Kinross also owns a controlling stake. In late 2002, Kinross sold its 25 percent interest in the undeveloped Aginskoe deposit (Kamchatka) to the platinum mining firm Koryakgeolodobycha. In June 2002, Kinross announced plans to combine operations with Echo Bay Mines, Ltd., which had an interest in the Kuranakh deposit (Sakha), reportedly Russia's second largest gold deposit.¹⁹⁴ The company also plans to merge with TVX Gold Inc. (Toronto), 50 percent owner of a joint venture (Trevozhnaya) that holds rights to develop some deposits in Kamchatka.

Bema Corporation. This Canadian company, a producer of gold and other precious metals in Latin America (Refugio gold mine in Chile) and the western United States, owns 79.5 percent of the Julietta gold mine and 50.5 percent of the

Atagan, Makinskaya, and Ivaninskaya projects in the RFE.¹⁹⁵ Commercial production at Julietta began in December 2001. The International Finance Corporation (IFC) has invested U.S.\$10 million in the Julietta mine (see p. 280).

Pan American Silver Corporation. Pan American Silver Corporation formerly had a controlling interest in the Dukat silver mine, but after several struggles with Russian partners and the Magadan government, now holds just a 20 percent stake (see pp. 280–81).

WPN Resources Ltd. WPN sold its 85 percent interest in the Russian firm Geometall Plus in June 2001. This eliminated WPN's investment in most Russian deposits, including Dukat, Kubaka, Chai Yuria, Orotukan, and Nyavengla. WPN's sole investment in the RFE appears to be its 50 percent stake in the Kyuchus gold deposit in the Republic of Sakha (see p. 249).

Big Blackfoot Resources Ltd. During 1999 and 2000, this Canadian firm acquired a 74 percent stake in the Magadan gold mining company Zolotaya Kolyma, which has begun exploration and survey of the Dubach gold deposit.¹⁹⁶

Nevada Manhattan Mining, Inc. Based in Sherman Oaks, California, this company harvests and exports logs and lumber from Brazilian rain forests and mines precious metals in Nevada and Indonesia. In 1999, Nevada Manhattan Mining bought twenty-five-year rights to develop the Glukhoe gold deposit (Primorsky), and the Primorskoe and Salut gold and silver deposits (Primorsky).¹⁹⁷

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have produced the most gold, and Khabarovsk Krai is starting to expand production (see map 1.24). Economic turmoil led to sharp production declines in Sakha, but production in Magadan, Amur, and Khabarovsk remained fairly stable throughout the 1990s. Nationwide, gold-mining production declined less than many other industries. The Kubaka mine is now the second largest gold producer in Russia.¹⁹⁸ Kubaka produces about 12 to 15 metric tons a year, or almost 20 percent of RFE production. Other major producing mines are Mnogovershinnoe (Khabarovsk Krai, 2–3 metric tons) and Pokrovka (Amur Oblast, 2.8 metric tons in 2001).¹⁹⁹

In 2001, Russia produced about 154 metric tons, making the country one of the world's largest gold producers.²⁰⁰ Of this total, Russia exported about 90 metric tons: jewelers and other manufacturers used between 15 and 20 metric tons, and Gokhran, the state repository for gold and precious metals, bought the remainder. About 14 percent of companies involved in gold mining (78 companies) produce about 74 percent of Russia's gold. *Artels* produce about half of all RFE gold.

Continued gold industry growth depends on developing lode deposits as companies are depleting the placer mines. Unlike placer operations, lode mines can operate year-round, an attractive feature for foreign investors.

Agriculture

J. NEWELL—Arable land is limited to fertile plains in and around the Amur and Ussuri River basins in the southern RFE. Amur Oblast claims almost 60 percent of all arable land in the RFE, about 1.76 million ha.²⁰¹ Primary crops include soybeans, oats, wheat, and potatoes; meat, dairy products, and honey are also produced. Despite this diversity, the region will probably never be self-sufficient in foodstuffs.

Three types of agricultural producers have emerged since privatization began in 1991.²⁰² First, large Soviet-type collective farms remain. Although they use most of the available agricultural land, many of these enterprises are going bankrupt due to a lack of proper equipment and stable energy supply. Second, smaller agricultural enterprises now use roughly 6 percent of the total useable land and are facing similar problems. Third, there are now individual household plots, often dacha gardens (suburban plots owned by city dwellers), which tend to be the most efficient. Although comprising only 3 percent of all agricultural land in Russia, they contribute up to 50 percent of all food consumed in Russia.²⁰³ In Khabarovsk, household plots use 10 percent of the cultivated land but produce an estimated 50–80 percent of the major food staples.²⁰⁴

Despite privatization, most land remains under the control of the regional government through land redistribution funds. More than half of all arable land in Amur Oblast is controlled by the regional government, which leases it to large agricultural enterprises.

The agricultural industry is in dire need of new equipment and access to a stable energy supply. At the annual U.S. West Coast–Russian Far East Ad Hoc Working Group in 2001, the Agriculture working group reiterated their need for new equipment and recommended the international community create an equipment-leasing program to be supported by the American-Russian Investment Fund (TUSRIF) and the EBRD. The RFE produces almost three-quarters of the country's soybeans, giving agricultural companies in Amur, Primorsky, and the JAO reason to hope foreign firms will invest in production. New equipment would supplement such investment. Potential export markets include China and Japan, both major consumers of soybean products.

Toward sustainable development

Josh Newell

Throughout the RFE, NGOs, progressive government officials, and emerging private companies held high hopes that the fall of the Soviet Union would usher in reforms to transform an economy reliant on resource extraction into one based on manufacturing. Blessed with low labor costs and rich mineral, energy, timber, and fishery resources, many believed the region could manufacture value-added products from these resources for domestic and international markets. Reconstructing the energy infrastructure would also eventually ensure a reliable supply for RFE residents; this would involve developing natural gas reserves and renewable energy sources (such as wind and solar) to reduce dependence on polluting coal and diesel fuel. Revenue and jobs would increase, the economy would become more diversified, and natural resources would be used more efficiently. If this transformation occurred with environmental controls in place, the RFE would make great strides toward sustainable development—broadly defined as meeting present and future economic and social needs without compromising ecological systems.²⁰⁵

Ten years later, this scenario seems naïve. Sawntwood and plywood production, fish processing, machine building, and light industry are at unprecedented lows. The region is even more reliant on raw material export. Unemployment is high. Wasteful resource use and inefficient production persist. Energy intensity in Russia has increased, and coal (when available) remains the only option for most power plants (see p. 66).

Why have more than ten years of economic and political transition brought with them so little progress toward these goals? Low levels of government investment are part of the

problem. Economist Nadezhda Mikheeva estimates that by 1998 federal investment in the RFE had plummeted to just 15 percent of 1990 levels.²⁰⁶ The federal government lacks funding to activate numerous National Action Plans and Federal Target Programs designed to increase manufacturing and environmental controls.²⁰⁷ More cynical observers maintain the government lacks the will to activate these programs in the RFE, pointing out that expanded manufacturing capability might make the region more self-sufficient and more independent from Moscow at a time when President Putin is trying to recentralize control. Economists argue manufacturing decline is the result of market forces: Soviet economists

and planners supported inefficient manufacturing industries that could not compete without large federal subsidies for energy and transport. Some blame capital flight for the decline: Russian firms continue to protect their profits in foreign accounts rather than reinvest them in domestic infrastructure and technology, which is needed to make manufacturing competitive. Still others cite resistance to reform from those in the RFE who benefit most from exporting precious raw materials.²⁰⁸

Lack of federal funding, lack of federal will, lack of competitiveness, capital flight, and greed: These are all factors impeding structural change. But what of the role of foreign

Foreign direct investment (FDI) in the RFE

Foreign direct investment levels in the RFE have been relatively low, given the natural resources and major consumer markets of China, Japan, and South Korea. Instability in Russia continues to deter investors: tax laws and regulations are too fluid, the legal system is weak and capricious, power relations between the regions and the center continue to shift muddling jurisdiction, and corruption and black markets remain prevalent. Using Goskomstat regional (*krai* and *oblast*) statistical sources, the Far East and Zabaikale Association estimates that official RFE FDI—a significant percentage goes unreported to avoid taxation and extortion by criminal organizations—totaled U.S.\$4.2 billion for the period 1995–2001 (see table 1.11). Investment in Sakhalin, with its oil and gas projects, makes up about half of this total (\$2.13 billion), and the region is annually one of Russia's top recipients (first in 2000).²⁰⁹

This indicates a clear pattern: FDI is primarily going into resource extraction and export projects in oil and gas and mining, followed by timber and fishing.²¹⁰ FDI in mining has primarily gone into developing gold and silver deposits in Magadan Oblast. Foreign companies exert great influence on mining in Magadan: Kinross Corporation (Canada) controls and operates Kubaka, one of Russia's largest gold mines; Bema Corporation (Canada) controls and operates the huge Julietta gold and silver mine; and Pan American Silver Corporation has a large stake in one of the world's largest silver mines, Dukat.

Foreign companies have long been interested in RFE forest resources, but corruption in the industry and a series of failed ventures in the early 1990s—Hyundai (1991) and Weyerhaeuser (1993–1994)—have limited the widespread investment originally predicted. Nevertheless, a handful of foreign companies operate in the Primorsky and Khabarovsk Krai, supplying the Northeast Asian log market. Rimbunan Hijau, a Malaysian

timber conglomerate with a reputation for poor harvest practices, has the largest operations: The company secured two forty-nine-year leases in 1998 to log more than one million ha of forestland in Khabarovsk Krai. Rimbunan has emerged as one of the RFE's largest loggers and exporters. Pioneer Corporation (part of the Pioneer Investment group based in Boston) was once a major timber producer and exporter until it shut down operations in April 2002. Pioneer operated out of Siziman Bay, on the northeastern coast of Khabarovsk Krai, where it had effectively created a timber camp and private port—heavily guarded and cut off from nearby villages. Chinese investors, meanwhile, have funded small-scale logging and export operations near the Russian-Chinese border. Few foreign companies have invested in manufacturing (sawwood, plywood, furniture), with STS Technowood being a major exception. A joint venture between the Japanese firm Sumitomo and the Russian firm Terneiles, Technowood is one of the few and definitely the most successful timber-processing venture with foreign investment in the RFE.

Unreported investment and complex charter arrangements make tracking FDI in the fishing industry difficult. Throughout the 1990s, foreign companies chartered fishing trawlers and vessels to Russian firms or developed joint ventures. U.S. firms, for example, set up such arrangements to harvest crab: Common arrangements included either refitting Russian-built vessels in the United States for crabbing or supplying U.S. crabbers, with payment from Russian operators in product.

Table 1.12 inventories the largest FDI projects, with public finance (international financial institutions and export credit agencies) where involved noted. The table also includes infrastructure projects because their expansion and modernization expedite resource extraction and export.

—JN

Table 1.11
Foreign investment in the RFE, 1995–2001 (U.S. \$ millions)

	1995	1996	1997	1998	1999	2000	2001
RFE	198	408	271	554	1,438	577	764
Sakhalin	52	45	53	136	1,207	251	389
Primorsky	53	97	94	85	54	78	108
Sakha	12	8	14	198	86	160	144
Magadan	14	149	63	52	30	28	26
Kamchatka	24	24	34	43	26	29	78
Khabarovsk	42	79	12	40	33	27	19
JAO	0	0	0	—	—	—	—
Amur	1	6	1	—	2	4	—
Chukotka	—	—	—	—	—	—	—

Note: Includes Koryak Autonomous Okrug.

Source: Interregional Association of Economic Cooperation for the Far East and Zabaikalye, 2002.

direct investment (FDI)? Theoretically, FDI, in the form of joint ventures, equity investment, and wholly owned foreign ventures, can provide capital, management expertise, and technology to retool industries, develop manufacturing capability, and reduce resource waste and pollution. Less FDI has flowed into the RFE than many economists expected—about U.S.\$4.2 billion from 1995 to 2001—suggesting that more FDI is needed for the region to achieve real progress (see tables 1.11 and 1.12 and text box). But FDI may be part of the problem: FDI has flowed almost exclusively to resource extraction projects, first in offshore oil and gas development (Sakhalin) and gold mining (especially Magadan), then in logging and fishing. A brief review of the RFE generally supports the view that regions reliant on extractive industries—namely oil, gas, and mining of minerals and metals—have low levels of economic growth and fail to distribute revenue evenly. FDI appears to be perpetuating this unsustainable development and is having unexpected negative environmental impacts. Meanwhile, the potential benefits of western technology—modernizing manufacturing and light industry in the RFE—have yet to materialize.

This becomes problematic for international financial institutions (IFIs) using public monies to invest in these industries: Foreign-controlled energy and mining projects dominate the RFE investment portfolios of these institutions (see table 1.12 and text box on p. 92), yet IFIs are mandated to support projects fostering “environmentally sound and sustainable development” (in the case of the European Bank for Reconstruction and Development) as well as projects alleviating poverty through sustainable development (World Bank).

If these institutions instead shifted their lending priorities to support FDI in manufacturing, renewable energy production, progressive environmental practices, and underdeveloped sectors such as ecotourism and nontimber forest-product businesses, then progress toward sustainable development in the RFE would indeed begin to take place. These efforts would be enhanced with more effective NGO and foreign-aid-agency programs, such as the United States Agency for International Development (USAID). Working with grants rather than loans, these groups could develop nascent industries that would not be immediately profitable.

The extractive industry debate

Can a region primarily rely on extractive industries to achieve long-term economic growth? Traditional economic wisdom says yes. In the 1940s, economists began promulgating the idea that countries rich in oil and minerals would prosper through attracting foreign capital to export their resources in unprocessed or semi-processed form.²¹¹ Domestic profits would then be directed toward social needs, such as education and infrastructure, and reinvested in manufacturing industries and services. FDI would also introduce technology to harvest resources more efficiently and improve production methods, both of which would minimize environmental impacts.

This economic model guides the policies of today’s publicly funded international institutions, which are charged with financing development projects and economic programs throughout the industrializing world. Although there are considerable policy differences among these institutions, they

can be divided into three groups: (1) IFIs, such as the World Bank Group, the International Monetary Fund (IMF), and EBRD, all of which are funded by member governments; (2) Export Credit Agencies (ECAs), or bilateral agencies, such as the U.S. government's Overseas Private Investment Corporation (OPIC), a provider of low-interest loans and political-risk insurance to U.S. companies, and the numerous export-import banks such as the Export-Import Bank of the United States and Japan Bank for International Cooperation (JBIC); and (3) bilateral aid agencies, which primarily provide grants and technical assistance, such as USAID and Canadian International Development Agency (CIDA), and various United Nations agencies, such as United Nations Development Programme (UNDP) and United Nations Industrial Development Organization (UNIDO).

Critics, such as Hans Singer, an economist during the 1950s, have long challenged the tenets of this economic development model. Over the past two decades numerous studies have reinforced the critics' arguments. One such study by then-Harvard economists Jeffrey Sachs and Andrew Warner found that, between 1970 and 1990, economies of resource-rich countries grew more slowly than those without natural resource wealth—even after controlling for factors such as labor productivity, trade and investment policies, political risk issues, and other growth handicaps.²¹² The difference between the two types of countries was dramatic: If all countries had started at the same level in 1970, by 1990 the least resource-intensive economy would have a per capita GDP roughly 2.5 times larger than the most resource-intensive economy.²¹³

This phenomenon has become popularly known as the “resource curse” or the “paradox of plenty.” And researchers have come up with numerous explanations for why it occurs. For one, extracting and exporting raw materials provides less revenue and creates far fewer jobs than does processing the materials and producing finished goods.²¹⁴ This is in part because prices for raw materials have fallen relative to those for manufactured goods.²¹⁵ Prices for raw materials are also volatile, prone to booms and busts. During price booms, governments often fail to reinvest revenue, quickly overspending their surplus, or worse, corrupt government officials appropriate or misuse them.²¹⁶ Alan Gelb, in *Oil Windfalls: Blessing or Curse*, documents how oil-dependent economies, in addition to failing to save, neglected to reinvest in other sectors (particularly manufacturing and agriculture).²¹⁷ In economic literature, this is often referred to as “Dutch Disease,” whereby investment in natural resource extraction draws labor and capital away from other sectors such as agriculture and manufacturing, stunting their development and making them less competitive.

Perhaps more damning have been studies correlating resource dependence with increased poverty and inequality, particularly in countries dependent on mining. UCLA political

scientist Michael Ross found oil and gas and mineral sectors to be enclave industries separate from the local economy, creating jobs for a small number of skilled workers. Industry representatives counter that they indirectly create jobs, by expanding upstream to businesses supplying the extractive industries and downstream to businesses that process and add value to raw materials. Ross found this linkage weak, however, especially for downstream businesses, because governments fail to reinvest in manufacturing and because industrialized countries tend to protect their own processing industries through tariffs or subsidies.²¹⁸ Although highly profitable for “oil and mining firms, for well-placed politicians and bureaucrats, and for the World Bank itself,” Ross concludes mineral-dependent economies are “disastrous for the poor.”²¹⁹

Criticism of this development model extends beyond academic circles. NGOs have long accused the World Bank of funding mining and oil projects that fail to provide equitable socioeconomic benefits and pollute the environment, noting that financing such projects contradicts the Bank's mandate. Where such projects involve FDI, NGOs have been particularly vocal about environmental impact, accusing foreign companies of moving their resource-extraction and pollution-intensive operations to countries with weak environmental regulations (“pollution havens”) to cut costs or of pressuring regulatory agencies within these countries to lower environmental standards (“race to the bottom”) or change land use plans as a prerequisite for investment.

On behalf of a large NGO coalition, Friends of the Earth—International Chairman Ricardo Navarro in September 2000 called upon the World Bank to cease financing oil and gas and mining projects altogether.²²⁰ Bank president James Wolfensohn responded by creating the Extractive Industries Review (EIR) in October 2001 to consider whether the Bank's role in these industries is compatible with its mission. NGOs have commended the Bank's initiative, although many are skeptical because the Bank selected its own review team and because recommendations from a similar but better-financed review (World Commission on Dams) were never implemented.²²¹

If recommendations from a critical EIR review were implemented, however, it would have a broad impact on Bank activity in extractive-based countries, including loans, structural adjustment programs, and FDI-promotion programs. This would spill over into EBRD and ECA operations—these institutions often incorporate Bank findings in their lending guidelines.

These policy changes would also alter development of the RFE—a region where these institutions heavily fund FDI projects in energy and mining. Let's explore the “resource curse” thesis as it pertains to the RFE by considering extractive industries in the region generally and then focusing on the Sakhalin II oil and gas development project specifically.

Table 1.12

Foreign direct investment and public finance in resource extraction projects in the RFE

ENERGY**Sakhalin I**

- Resource: Oil and gas
- Region: Sakhalin
- Estimated cost: \$12 billion
- Foreign ownership: ExxonMobil (30%), Sodeco (Japan) (30%), ONGC Videsh Ltd. (India) (20%)
- Bank: EBRD, \$56.4 million (2001)
- Estimated resources: Oil, 325 million tons; gas, 425 billion cu. m
- Loan provided to Russian partner, Rosneft Sakhalinmorneftegas; production sharing agreement (1995)

Sakhalin II

- Resource: Oil and gas
- Region: Sakhalin
- Estimated cost: \$10 billion
- Foreign ownership: Royal Dutch Shell (55%), Mitsui (25%), Mitsubishi (20%)
- Bank: EBRD, \$131 million (1998); OPIC, \$116 million (1998); JBIC, \$116 million (1998)
- Estimated resources: Oil, 140 million tons; gas, 494 billion cu. m
- Annual production: Oil, 2 million tons (2001)
- First Sakhalin project to start production (1999); production sharing agreement (1994)

Sakhalin III

- Resource: Oil and gas
- Region: Sakhalin
- Foreign ownership:
 - Kirinsky Block – ExxonMobil (33.3%); ChevronTexaco (33.3%)
 - Ayashkinsky and E. Odoptinsky Blocks – ExxonMobil (66.6%)
- Estimated resources: Oil, 801 million tons; gas, 1.386 trillion cu. m
- No production sharing agreement

Sakhalin IV

- Resource: Oil and gas
- Region: Sakhalin
- Foreign ownership: BP (UK) (49%)
- Estimated resources: Oil, 123 million tons; gas, 540 billion cu. m
- Production sharing agreement

Sakhalin V

- Resource: Oil and gas
- Region: Sakhalin
- Foreign ownership: BP (UK) (49%)
- Estimated resources: Oil, 154 million tons; gas, 450 billion cu. m
- No production sharing agreement

Sakha-China gas pipeline

- Resource: Oil and gas
- Region: Sakha
- Foreign ownership: China National Oil Corporation
- Estimated resources: Oil, 235 million tons; gas, 13 trillion cu. m (Sakha total)

Sakha-South Korea gas development and pipeline

- Resource: Oil and gas
- Region: Sakha
- Estimated cost: \$17–23.5 billion
- Foreign ownership: Fifteen South Korean companies
- Expects 34 – 44 billion cu. m of gas yearly

Gas development

- Resource: Gas
- Region: Sakha
- Foreign ownership: Eurogas, Pan Asia Mining

Mutnovsky Geothermal Power Plant

- Resource: Geothermal
- Region: Kamchatka
- Estimated cost: \$169.7 million
- Bank: EBRD, \$112.8 million (1998)

MINING**Kubaka**

- Resource: Gold and silver
- Region: Magadan
- Foreign ownership: Kinross Gold Corp. (Canada)
- Bank: OPIC, EBRD, \$35.8 million (1998), \$16.5 million (2001)
- Estimated resources: Gold, 1.627 million ounces (high); 514,000 ounces (lower); silver, 2.2 million ounces
- Kinross total project revenue in 2001 was \$67.8 million

Julietta

- Resource: Gold and silver
- Region: Magadan
- Estimated cost: \$76.5 million
- Foreign ownership: Bema Gold Corp. (Canada) (79%)
- Bank: IFC, \$10 million (2000), \$1 million (2001); MIGA, \$27.4 million (2000)
- Estimated resources: Gold and silver, 866,000 ounces
- Estimated annual production: gold, 400,000 ounces; silver, 6 million ounces

Dukat

- Resource: Silver
- Region: Magadan
- Estimated cost: \$105 million
- Foreign ownership: Pan American Silver Corp. (20%)
- Bank: IFC, \$13.9 million (2000), \$17.5 million (2000)
- Estimated resources: Silver, 10.55 million tons (provable)
- World's third-largest known silver reserve; expected annual production, 16.8 million ounces (silver); 34,000 ounces (gold)

Gold preproduction financing facility

- Resource: Gold
- Region: Chukotka
- Estimated cost: \$9.5 million
- Bank: EBRD: \$2 million (2000)

Berezovskaya (Dubach)

- Resource: Gold
- Region: Magadan
- Foreign ownership: Big Blackfoot Resources (unknown %)

Kuranakh

- Resource: Gold
- Region: Sakha
- Estimated cost: \$450 million
- Estimated resources: Gold, 450 tons
- Annual production: 3.7 tons (1996)
- Expected annual production of 14 tons

Kyuchus

- Resource: Gold
- Region: Sakha
- Foreign ownership: WPN Resources (50%)
- Estimated resources: Gold, 150 tons
- Expected annual production of 7 tons

Nezhdaninskoe

- Resource: Gold
- Region: Sakha
- Estimated cost: \$300 million
- Foreign ownership: Celtic Resources Holdings (50%)
- Estimated resources: Gold, 335–480 tons
- Expected annual production of 3 tons

Pokrovka

- Resource: Gold
- Region: Amur
- Foreign ownership: Zoloto Mining (UK) (75%)
- Bank: IFC support dropped
- Project was dropped by IFC; annual production of 3–4 tons by 2003

Tas-Yuriakh

- Resource: Gold
- Region: Khabarovsk
- Foreign ownership: The Pioneer Group, Inc. (94%)
- Estimated resources: Gold, 34 tons

Nyurba and Botuobinskaya deposits

- Resource: Diamonds
- Region: Sakha
- Foreign ownership: Caterpillar
- Region: U.S Ex-Im, \$62 million (1997), \$80 million (2000)
- Annual production: \$1.5 billion (2000)
- World's second-largest diamond producer, 26% of global production

FORESTRY**Rimbunan Hijau Ltd. (Sukpai River)**

- Resource: Logs
- Region: Khabarovsk
- Foreign ownership: Rimbunan Hijau International (Malaysia) (100%)
- Estimated resources: 500,000 cu. m per year
- Annual production: 300,000 cu. m (2000)

Rimbunan Hijau Ltd. (Bitchi River)

- Resource: Logs
- Region: Khabarovsk
- Foreign ownership: Rimbunan Hijau International (Malaysia) (100%)
- Estimated resources: 500,000 cu. m per year

Arkheim

- Resource: Logs
- Region: Khabarovsk
- Foreign ownership: Unknown Japanese firm

Technowood

- Resource: Sawnwood
- Region: Primorsky
- Foreign ownership: Sumitomo (Japan)

INFRASTRUCTURE**Chita-Nakhodka road project**

- Region: RFE
- Bank: World Bank and EBRD (level of financing unknown)

RFE air navigation modernization project

- Region: RFE
- Estimated cost: \$80.6 million
- Bank: EBRD: \$25 million (2000)

Far Eastern Shipping Company (FESCO)

- Region: RFE
- Bank: EBRD: \$18.5 million (1994)

Sakhalin Shipping Company

- Region: Sakhalin
- Estimated cost: \$25.7 million
- Bank: EBRD: \$25 million (1996)

Note: EBRD = European Bank for Reconstruction and Development; IFC = International Finance Corporation (World Bank); JBIC = Japan Bank for International Cooperation; MIGA = Multilateral Investment Guarantee Agency (World Bank); OPIC = Overseas Private Investment Corp. (U.S.); U.S. Ex-Im = United States Export-Import Bank

Sources: Compiled from regional chapters; EBRD Investment Profile, 2001

Development banks in the RFE

In dollar terms, loans for foreign-controlled energy and mining projects dominate the RFE investment portfolios of the two multilateral development banks or International Financial Institutions that focus on private-sector lending—EBRD and the International Finance Corporation, the private sector arm of the World Bank Group—and the bilateral Export Credit Agencies active in the region. This summary provides explanation to Table 1.12.

International Financial Institutions (IFIs). To date, the Sakhalin II project (U.S.\$131 million loan) is EBRD's largest, followed by the Mutnovsky Geothermal Power Plant in Kamchatka, and then a number of gold and silver mining projects (Kubaka, Julietta, Dukat) in Magadan.²²² The Mutnovsky project is technically Russian—the loan is made to the Russian firm Geoterm, with the Russian government as an intermediary—although Germany's Siemens Corporation has done much of the contract work.

IFC's portfolio is essentially two mining projects: Dukat (U.S.\$13.9 million equity investment and U.S.\$17.5 million loan) and Julietta (U.S.\$10 million loan). Meanwhile, the World Bank's provider of political risk insurance and guarantees, the Multilateral Investment Guarantee Agency (MIGA), is insuring Julietta for \$27.4 million. The World Bank's third major arm, the International Bank of Reconstruction and Development (IBRD), has a role somewhat different from that of IFC or MIGA. IBRD focuses on institutional and policy changes to specific industrial sectors of the Russian economy and makes loans accordingly. IBRD, for example, has provided two large loans designed to restructure Russia's coal industry.²²³ IBRD has also provided a U.S.\$400 million Highway Rehabilitation and Maintenance loan earmarked to rebuild Russian roads and build new ones, including the controversial Chita-Nakhodka road that is being built through previously inaccessible forests in the Sikhote-Alin Mountain Range (Primorsky and Khabarovk Krai) and will expedite logging and timber export. As with IFC and MIGA, promoting FDI as the primary

vehicle to achieve sustainable development remains the underlying philosophy of IBRD.

All three institutions (EBRD, IFC, and IBRD) have made limited attempts to finance Russian firms and to encourage processing (see pp. 95–96).

Export Credit Agencies (ECAs). The other major source of international finance, the ECAs, meanwhile exist solely to support foreign corporate interests, either through loans directly to these firms or through financing to Russian companies purchasing foreign equipment and services. The U.S. government's Overseas Private Investment Corporation (OPIC) financed Sakhalin II (U.S.\$116 million) and Kubaka (amount unknown), and created a Private Equity Fund for Russia designed to encourage direct foreign investment generally.²²⁴ The U.S. Export Import Bank (Ex-Im), which provides financing to Russian companies that want to purchase U.S. equipment and services, had authorized more than U.S.\$2 billion in loans, guarantees, and insurance for projects in Russia (as of October 2002). Ex-Im has developed framework agreements on oil and gas (1993) and forestry (1996) to encourage U.S. exports of equipment and services to these sectors. The Trade and Development Agency (TDA) provides grants for U.S. firms to carry out feasibility studies and other planning services needed to garner future financing for major projects. In the RFE, TDA recently provided \$600,000 for new fishing vessels equipped with U.S. engines and financed a study to explore the export of Alaskan coal to Magadan.

Lending by the Japan Bank for International Cooperation (JBIC)—Japan's primary lending agency and one of the world's largest financial institutions—has been largely limited to the Sakhalin II project, although its predecessor, the Export-Import Bank of Japan, supported resource development projects throughout the Soviet era and was instrumental in building the industrial structure that persists in the RFE today (see text box, A history of Japanese investment in the RFE, p. 99).

— JN

The RFE: A resource-cursed region?

The RFE is by no means an integrated economic unit—industries and their methods of operation vary considerably by administrative region. But all regions rely on resource extraction and export and have a weak manufacturing capacity. Mining defines the economies of three northern regions: Sakha (diamond, gold, tin, and coal), Magadan (gold and silver), and Chukotka (gold and tin). Fishing is dominant in Kamchatka and Koryakia, although the latter has a growing platinum mining industry, and gold mining is being considered on Kamchatka. Sakhalin relies primarily on fishing,

followed by oil and gas, and then timber and coal mining. Oil and gas will become major contributors to the Sakhalin economy in years to come, perhaps eclipsing fishing. Other southern regions (Primorsky, Khabarovsk, Amur, and Jewish Autonomous Oblast) have more diversified economies, although mining is a major component in each.

Unfortunately, few researchers have weighed the pros and cons of extractive industries for Russia, let alone the RFE. There is evidence of the state “squandering” windfall profits from oil and gas export in the late-Soviet period, and failing to reinvest in manufacturing and social services.²²⁵ Post-

Foreign investment of selected countries

Japan. Japanese investment in the 1990s has decreased. The main investments include the Sakhalin I and II gas projects (Mitsubishi, Mitsui, Sodeco), two timber-processing joint ventures, STS Technowood and STS Hardwood (Sumitomo) in Primorsky Krai, one major logging joint venture (Arkheim), and ventures in fishing, communications, car repairs, and hotels.²²⁶ The Japanese government and numerous Japanese companies have also invested in the expansion of Zarubino port, in the Tumen River Delta region, to facilitate trade with Manchuria (northeast China).²²⁷

China. Chinese investment has been largely small-scale and focused on trade and logging, particularly in the southern RFE. The Chinese government is interested in possible investment in the Sakha oil and gas projects.

South Korea. South Korean companies invested U.S.\$69 million in fifty-five projects in the RFE in the 1990s. Hyundai Corporation has been the most significant with the failed Svetlaya joint venture (see p. 133) and the Hotel Hyundai in Vladivostok. The South Korean government and South Korean companies are interested in the Sakha and Sakhalin oil and gas projects.

United States. U.S. energy companies are prominent in several Sakhalin projects: ExxonMobil (Sakhalin I, Sakhalin III, and Sakhalin IV) and ChevronTexaco (Sakhalin III). U.S. firms in the timber sector (Weyerhaeuser, Pioneer Corporation, and Global Forest Management Group) have had less success. Several U.S. companies supply equipment to the fishing, timber, and especially the mining industries.

Others. Canadian companies have the most investment in the mining sector—located almost exclusively in the Magadan Oblast. Rimbunan Hijau, the Malaysian logging company, has two large long-term leases in Khabarovsk Krai.

—JN

Soviet research indicates resource-rich regions in Russia have, in the short-term, fared better economically than regions without resource wealth.²²⁸ But British geographers Michael Bradshaw and Nicholas Lynn speculate long-term economic growth of resource-rich regions may be compromised because they have been slowest to adopt necessary reform.²²⁹

Bradshaw and Lynn also question the size of the RFE natural resource base. Higher energy and transport costs make extracting remote resources such as mineral deposits in the north economically unfeasible, leaving only the most accessible resources viable for exploitation. If the region remains extractive-industry dependent, they doubt whether this base

is sufficient to provide either economic recovery or sustained economic growth. The geographers cite numerous other constraints to basing the RFE economy on resource extraction: aging equipment, legal and environmental constraints, and large-scale depletion of accessible resources.²³⁰

Vladimir Kontorovich, an economist at Haverford College, has studied labor demand and the generation of rents (excess payments or profits generated by natural resources) in RFE industries. He found extractive industries in the RFE now employ far fewer people than did manufacturing during the Soviet era and that substantial production increases in these sectors would not make up for the job shortfall.²³¹ Alexander Sheingauz and others at the Institute of Economic Research in Khabarovsk support this assessment in a separate study.²³² Kontorovich contends foreign investment in extractive sectors will bring labor-efficient western technology, leading to further employment declines.

Kontorovich finds little evidence rents generated from these sectors can subsidize other more labor-intensive industries such as service, manufacturing, and agriculture. Only the Republic of Sakha's diamond industry achieves this, he maintains, and only for a portion of the Sakha economy. High extraction and transportation costs make rent from Sakhalin oil and gas projects only "marginal." The profit margin for mining is even slimmer than for oil and gas, and may be reduced even further given the short life span—sometimes only two or three years—of many mining projects. A significant price increase for resources could increase the rent, but Kontorovich doubts this will occur anytime soon, particularly for minerals.

The Sakhalin II oil and gas project

Another way to weigh in on the extractive industry debate, and the approach favored by the Extractive Industries Review, is to look at specific projects. The RFE's keynote project is the Sakhalin II oil and gas project. It contains all the elements central to the debate: large-scale resource development (oil and gas), FDI, and public money in the form of loans from EBRD, OPIC, and JBIC.

Sakhalin II project operator Sakhalin Energy Investment Corporation (SEIC) claims the economic and social benefits will be "overwhelmingly positive" largely due to the "increase in employment, both indirect and direct" and the generation of large revenues for federal and regional governments (taxes, royalties, and other payments).²³³ Kontorovich's research refutes this, as does a report by the Auditing Chamber of the Russian Federation. The report contends that, despite producing oil since 1997, as of February 2000 the project had contributed no economic benefits to Russia's budget. Provisions in the project's Production Sharing Agreement (PSA) allow SEIC to pay U.S.\$19 billion less in taxes than they would have otherwise, over the life of the project.²³⁴ SEIC calculates benefits to the Russian government totalled

U.S. \$233.8 million through the end of 2001. This includes a onetime contribution of U.S. \$100 million to the Sakhalin Development Fund, some of which is tagged to develop infrastructure that would greatly benefit oil companies: New roads and port upgrades are crucial to the project.²³⁵

Both sides are likely overstating the case. More worrisome is how this revenue will be distributed. Emma Wilson's fieldwork in the communities of northern Sakhalin led her to conclude that any local benefits from the project will go to a select few (see p. 408), primarily those in Sakhalin's capital, Yuzhno-Sakhalinsk, and not to the northern communities (many of which are indigenous) whose traditional livelihoods are threatened by the project and who will bear most of the ecological risk. Wilson blames the PSA system and the fact that the oil and gas reserves are in federal waters, which means Nogliksky Raion (situated just west of the project) has "no claim to any payments for the use of resources although an oil spill would devastate the local fishing economy." The only bonus payments to the *raion* (required by the PSAs) so far have been for a gas-fired power station near Nogliki that was built primarily to supply gas to southern Sakhalin. The power station uses gas from the onshore reserves. While the project could bring revenue to local services, shops, and restaurants, Wilson notes ExxonMobil (Sakhalin I) and SEIC have built a self-sufficient compound with strictly limited access for security purposes outside Nogliki; and the *raion* receives no revenue from the camp because both companies are registered in Yuzhno-Sakhalinsk.

Environmental impacts. It appears Sakhalin II will not deliver a solution to the island's crippling energy crisis anytime soon, a benefit that residents had expected. Residents had hoped the project would process gas locally and then use it to convert the island's unstable, polluting coal-thermal power stations. But SEIC is pursuing an "oil first" strategy: exporting crude and planning to build a pipeline and liquefied natural gas (LNG) terminal to export gas to Asian markets.

Environmentalists maintain companies such as Royal Dutch Shell, the largest shareholder in Sakhalin II, and ExxonMobil, the largest shareholder in Sakhalin I, are operating in Russia and other so-called pollution havens in part because environmental regulations are weaker (or in Russia's case more malleable) and labor standards are lower than in wealthier countries. This debate occurs when foreign companies apply for IFI or ECA financing: NGOs see their participation as an opportunity to ensure projects adhere to high environmental standards.²³⁶ Indeed, decades of NGO campaigning have led to significant improvement in the World Bank's environmental and social guidelines, and the EBRD's guidelines have also steadily improved since its creation in 1991, although many still consider both institutions' improvements inadequate. The guidelines of OPIC, JBIC, and other ECAs are much weaker, but they too have improved over the past five years due to NGO pressure.²³⁷

Improving these guidelines, however, does not ensure companies will use the "best available standards" (those usually required for projects in the United States and Western Europe). A coalition of NGOs, led by Sakhalin Environment Watch (Russia) and Pacific Environment (United States), claims Sakhalin II uses "far weaker environmental standards than those used internationally and in the U.S." This claim was strengthened by a September 2002 exposé in the *Wall Street Journal* documenting the disparity between the environmental standards for Sakhalin I and II and those for similar projects in Alaska:

[The oil and gas companies] already at work aren't following many of the protective measures that would be standard in the U.S. ... The consortium [Sakhalin I, ExxonMobil] plans to transport oil year-round through Russia's ice-clogged Tatar Straits. Alaska, by contrast, has limited oil operations during periods of heavy ice floes in the Arctic Ocean because the industry flunked tests on cleaning up spills from drilling in those conditions.

The Shell-led group [Sakhalin II] has discharged toxic mud drillings into the shallow ocean waters off Sakhalin after an industry-sponsored study persuaded the Russian government to change its rules to allow the practice. To protect marine life, such dumping is prohibited in much of coastal Alaska.

For oil spills, Shell's closest cleanup equipment and manpower is about 50 miles from the oilfields, too far to meet requirements in most developed nations. ExxonMobil's plans rely on the same spill response setup. Neither group has so far offered any plans to protect the salmon from pipeline discharges, as would be required in the U.S.²³⁸

The *Wall Street Journal* exposé essentially accuses Sakhalin II of watering down Russian environmental regulations to allow the discharge of drilling muds directly into the sea and to bypass the more costly reinjection method common in Alaska. The questionable regulatory change was recommended in a study by the Sakhalin branch of TINRO (SakhNIRO), funded by Sakhalin II companies. The change also required that the Fisheries Committee downgrade the protection status for fisheries in the project's primary drilling area. A number of Russian scientists and government officials question the study's validity, noting its failure to consider migratory fish, such as salmon, and its analysis of only those fisheries "directly located over oil deposits, ignoring the rest of the coastal ecosystem."²³⁹ Pacific Environment, meanwhile, maintains SEIC has already damaged nearby fisheries by dumping drilling muds and cuttings directly into the sea. This not only concerns the northern communities who rely on these resources, but also potentially all residents, as fishing is the island's largest employer.

Environmental standards for Sakhalin II are important not only because the project is geographically dispersed and will affect forests, marine areas, and a variety of other habitats, but also because the project's standards will set the benchmark for future oil and gas projects in the RFE. One of the stated missions of EBRD and other development banks is to improve private projects such as Sakhalin II. But if these institutions cannot require SEIC to use the same standards as those widely required of oil and gas projects in wealthier countries, then their ability to improve the environmental performance of such projects is questionable. See Chapter 11 for more detail on Sakhalin II and other oil and gas projects.

There are other instances of regional governments in the RFE loosening regulations to attract or retain FDI. To entice the Malaysian timber conglomerate Rimbunan Hijau to log the Sukpai, for example, the government of Khabarovsk Krai overturned federally approved plans to create a *zapovednik* (nature reserve) in the upper Sukpai River basin. The *krai* government even went so far as to ask regional scientists to prepare the necessary papers (see pp. 175–76).

The case for the environmental benefits of FDI

IFIs and foreign government agencies maintain FDI benefits the environment. Indeed, FDI is a centerpiece of the U.S. government's strategy for promoting environmental stewardship and sustainable development worldwide, a strategy expedited by U.S. lending agencies such as OPIC and the Ex-Im Bank. This vision was articulated most recently in their flagship publication for the 2002 UN Summit in Johannesburg, *Working for a Sustainable World: U.S. Government Initiatives to Promote Sustainable Development*: "The private sector can help manage and conserve natural resources and the environment by using environmentally sound production methods. Production that limits pollution, and conserves water, soil, land, and fuels, protects natural resources for the future."²⁴⁰

The use of lower standards to produce oil, as with Sakhalin II, undermines this claim. The argument also hinges on the theory that FDI brings resource-efficient and environmentally benign technology. Foreign companies either sell equipment directly to domestic firms or introduce it via joint- or wholly owned ventures. This equipment protects the environment, if used properly. It generally harvests resources more efficiently, and some design features reduce environmental impact. But this more mobile and powerful equipment can do significant albeit unintended environmental damage in places like the RFE, where government regulation is weak.

A few examples make this clear. In the timber industry, Finnish, Japanese, Korean, and American timber harvesters, skidders, and loaders dominate the market.²⁴¹ Most of these harvesters have features such as rubber tires designed to minimize damage to soil and undergrowth. But they are also more mobile, enabling companies to log forested slopes inaccessible to heavier Russian equipment. Russian regulations prohibit

timber harvest on slopes greater than 20° but introducing this equipment has facilitated illegal logging of the slopes. A similar phenomenon is apparent in the fishing industry. The introduction of European trawling fleets in the 1990s improved harvest efficiency, according to fishing specialist Tony Allison, while simultaneously leading to the harvest of unsustainable (and illegal) quantities of pollock to pay for the trawlers' high operating costs (see pp. 55–56). Introducing large U.S. crabbers similarly affected king crab stocks.

Western technology and production methods could increase yields and reduce environmental damage in existing gold mines and onshore oil and gas production areas. But to date, foreign investors have used their technological expertise and capital to open up wilderness: the Kubaka gold-mining project in Magadan, the Sakhalin offshore deposits in the fragile Sea of Okhotsk, and the Rimbunan Hijau Sukpai logging venture. Given that most RFE mining and logging companies lack capital and equipment, it is unlikely these areas would be developed without foreign investment.

Finally, foreign technology has not significantly reduced resource waste because most of the equipment introduced thus far has been for extraction, not processing, where the real benefits of this technology accrue. Western equipment, for example, could modernize the plywood, pulp and paper, and sawnwood industries. A processing industry, in turn, would create demand for smaller logs, woodchips, and branches, which are often left at the logging site.

Prospects for a sustainable economy

Given the questionable benefits of extractive industries, the questionable economic viability of the RFE's natural resource base, and the questionable effectiveness of FDI in minimizing environmental impact, a different development strategy is needed—one that diversifies the economy by expanding manufacturing and developing new industries. Bradshaw and Lynn have little hope this will occur because the supply of domestic capital is low, and the region's firms tend to focus on short-term profits rather than on long-term development.²⁴² Kontorovich is similarly pessimistic, arguing the RFE holds little attraction for manufacture because it is remote, sparsely populated, and lacks infrastructure.²⁴³

Nonetheless, there is progress. Small and medium-sized businesses in food, trade, and services are being established, albeit slowly. The timber business, with the help of FDI, could produce competitive value-added products.²⁴⁴ Some regional governments have tried to increase timber processing by placing conditions on FDI, and the federal government recently adopted an ambitious plan to increase processing fourfold by 2010.²⁴⁵

International financial institutions. The World Bank's International Bank of Reconstruction and Development (IBRD) has made some effort to advance manufacturing, certainly more

than have the EBRD or International Finance Corporation (IFC). The U.S.\$60 million IBRD loan to the Sustainable Forestry Pilot Project, for instance, requires promoting foreign investment in wood processing (see p. 172). The loan was finalized, however, at the same time the Russian government abolished the Forest Service—the project’s main beneficiary. Environmentalists failed to persuade the World Bank to freeze the loan until the Forest Service was revived, but the loan was stalled until institutional arrangements consistent with World Bank environmental policies could be agreed upon. The project’s original goals may yet be twisted to suit the more industrially minded interests of the new implementing agency, the Ministry of Natural Resources.

In September 2000, the World Bank also announced the creation of a Coal and Forestry Sector Guarantee Facility (worth U.S.\$200 million) in Russia to encourage FDI by “protect[ing] private investors from political risks.” The facility ostensibly would encourage value-added processing in the forestry industry, but the proposed mechanisms to ensure this are not clearly stated.

Ramping up lending to Russian-owned small and medium-sized enterprises (SMEs), which often provide goods to the domestic market, would expand manufacturing. The World Bank’s 2002 *Country Assistance Strategy* (CAS) for Russia certainly promoted the importance of such loans: “The poverty-reducing impact of growth with each region and across regions would be strengthened further if growth were based on a more diversified economy with a rapidly developing SME sector, instead of the current highly concentrated industrial structure dominated by natural resource exporters.”²⁴⁶ But currently, SMEs receive a small percentage of IFC and EBRD financing for the RFE.²⁴⁷ Increased lending to SMEs would require lending agencies to shift their focus from foreign-owned corporations to Russian-owned firms, a shift Russian officials endorse.²⁴⁸

The EBRD has financed Russian firms in the RFE, mainly through its Regional Venture Fund for the Far East and Siberia. Administered by Daiwa Corporation (Japan), the Venture Fund primarily buys equity in Russian companies with a strong domestic market.²⁴⁹ To date the fund has invested U.S.\$1.2 million in the Nakhodka meat plant and U.S.\$3.1 million in Amur Pivo, one of the RFE’s major brewing companies. But the scale of the Venture Fund’s investment so far, U.S.\$10 million, has been disappointing. The IFC’s efforts to finance similar firms have also been less than expected; it loaned U.S.\$10 million to Delta Leasing and U.S.\$20 million to Delta Credit Bank, both of which in turn provide financing and lease equipment to Russian SMEs and are administered by the private U.S.–Russia Investment Fund (TUSRIF), which is primarily financed by the U.S. government.²⁵⁰

IFI performance has been weakest in the renewable-energy and energy-efficiency sectors. Most of the EBRD and World Bank Group investments in energy concern fossil fuels rather than renewables, and the EBRD’s investments in

energy-efficient projects in the RFE are negligible.²⁵¹ In the post-Soviet RFE, rising energy and transport costs have led to serious disruptions in the supply of diesel and coal, especially to remote villages and the northern regions. Many of these areas are well suited for small-scale renewable energy systems such as wind power, solar, small-scale hydropower, and low-emission generators as evidenced by contributors to this book. Scientist Gennady Illarionov documents the solar power potential in Amur Oblast (see pp. 220–23). NGO leader Gennady Smirnov estimates wind energy resources in Chukotka alone can generate 1.5 trillion kW annually, or more than 14 percent of Russia’s wind energy resources (see p. 305). Sergei Abramov notes the Sea of Okhotsk, with some of the world’s largest tide shifts, would be a good location for tidal generators (see p. 331).

Unfortunately, the IFIs have inadequate mechanisms in place to encourage such projects. As its own environment department admits, the EBRD needs “additional financial vehicles” to promote renewables and energy-efficiency projects and to encourage “sponsors of environmental projects to approach the Bank.”²⁵²

Nongovernmental organizations. Most Russian and international NGOs operating in the RFE fall into two groups: (1) industry and government watchdogs that track, protest, and reform destructive practices among logging, mining, oil and gas, fishery, and dam construction projects, and (2) biodiversity conservators that establish or support protected areas, fund and conduct anti-poaching efforts, or research and support the protection of endangered species. A few have attempted to chart underlying socioeconomic causes of widespread illegal resource use, overreliance on raw material export, and energy shortages. Still fewer have developed projects to ameliorate these problems.

The Sustainable Land Use and Allocation Program for the Ussuri (Wusuli) River Watershed was such a project. The Ussuri River, a major tributary of the Amur River, delineates the Russian-Chinese border. The Ussuri River basin is a major industrial area and on the Russian side provides habitat for a large percentage of endangered animals in the RFE, such as the Far Eastern leopard, Siberian tiger, oriental white stork, and white-tailed eagle. Established in the early 1990s by Ecologically Sustainable Development (a now-defunct land use planning NGO from the United States), the project brought together government officials, scientists, and NGO representatives from China, Russia, and the United States to develop a comprehensive cross-boundary plan to conserve biological diversity and ensure economic development. Absent funds or the political will to implement it, however, the plan remains a paper project. Such projects need long-term commitments from local, regional, and federal governments and support from the residents of affected communities, in addition to funding. To expect revenue-starved local and regional governments to finance such projects is unrealistic.

Given their ability to work in the field with minimal overhead, NGOs with relevant technical expertise are well positioned to develop such model projects. But only a few philanthropic foundations (Rockefeller Brothers Fund, Pro-Natura Foundation, Japan Fund for the Global Environment, Turner Foundation—primary funders for many NGOs) are inclined to fund projects in the RFE. As a result, few NGOs operating in the region have adequate financial, legal, and staff resources. Even the World Wildlife Fund (WWF), the region's largest NGO, has been restricted in its efforts, focusing on programs to conserve biological diversity such as the creation of protected areas, antipoaching campaigns, and forest certification programs. For years, Friends of the Earth—Japan has tried to develop community-based projects in the Samarga River basin, including a project to provide wind power to villagers. But Friends of the Earth—Japan has had minimal success due to lack of funds, staff, and difficult social conditions produced by rampant alcoholism and the area's remoteness.

The Global Environmental Facility. One emerging source of financing is the United Nation's Global Environmental Facility (GEF). GEF-funded projects hold promise if (1) funds allocated to western consultants and administrative expenses can be kept to a minimum, and (2) projects focus on implementation rather than information gathering.²⁵³ Unfortunately the primary project implementers—United Nations Development Programme (UNDP), World Bank, and United Nations Environment Programme (UNEP)—do not work that way.

GEF projects are limited to five focal areas: biodiversity, climate change, international waters, ozone depletion, and land degradation. GEF projects must grind through a time-consuming “project scoping phase”—where information is relentlessly collected to generate long reports—before concrete action takes place. The broad focal areas do not lend themselves to community-development projects, although some project designers try to adapt them. Demonstrating Sustainable Conservation of Biological Diversity in Four Protected Areas on Russia's Kamchatka Peninsula (a U.S.\$2.3 million GEF-funded and UNDP-implemented project), for instance, proposes financing “sustainable livelihood support” and calls for ecotourism and a “more sustainable path of development”—vague wording that indicates either naïveté or cynicism. Unfortunately, many project planners either have little understanding of the time, money, and knowledge required to translate these ideas into project success in Russia or simply do not intend to commit the necessary resources.

After navigating GEF and other implementing agencies' complex operational policies, proposal development procedures, and eligibility criteria, several NGOs now work directly with various federal and regional Russian government agencies to develop fundable projects. These have potential. The Wild Salmon Center, a Portland, Oregon-based NGO—in partnership with UNDP and a number of government

agencies—is seeking U.S.\$3.3 million in GEF support for the Kamchatka-based project Conservation and Sustainable Use of Wild Salmonid Biodiversity. This project seeks to diversify the economic base of local communities and thereby target the root causes of threats to salmon.²⁵⁴

Responding to criticism that its application procedures are too time-consuming for many NGOs, GEF has also established funding for medium-sized projects (up to U.S.\$1 million). The Wildlife Foundation, a Russian NGO, has received U.S.\$750,000 for such a project, Strengthening the Protected Areas Network for Sikhote-Alin Mountain Forest Ecosystems Conservation in Khabarovsk Krai, which is aimed at conserving diversity.

Foreign government aid agencies. Of the foreign government aid agencies, USAID has been the most active.²⁵⁵ In 1995, USAID announced U.S.\$20 million in funding to create the Russian Far East Sustainable Natural Resources Project, or the Environmental Policy and Technology Project (EPT). USAID-funded subcontractors, including NGOs, were selected to implement its ambitious objectives, which include biodiversity conservation, ecotourism, obtaining Russian NGO support, nontimber forest product development, policy analysis, and forest-code revision in the Sikhote-Alin Mountain Range. The project included a comprehensive land use plan, which integrated resource harvest, community and business development, and biodiversity conservation plans for Chuguevsky Raion, a large, timber-dependent region in Primorsky Krai. Like its predecessor, the Ussuri project, this project was ultimately a planning exercise: EPT's time frame was too short and funding too limited to move beyond the planning stage.

EPT succeeded, however, in financing and providing equipment for protected areas, funding scientific research on endangered animals, and providing small-scale financing for antipoaching teams. EPT also funded a small grants program for Russian NGOs, which is administered by the ISAR, a U.S. NGO. EPT made timid forays into packaging and marketing nontimber forest products, but had few sales and failed to establish stable operations for drying, harvest, and packaging. Some Russians complained EPT made little effort to inform local stakeholders or the general public of the specifics of the project and failed to spend most of its funds to benefit local communities. Instead, a seemingly endless stream of seminars, workshops, exchanges, and western consultants bogged down the project. Significantly, no community-development projects initiated by EPT, such as the nontimber forest product businesses and components of the Chuguevsky project, have succeeded.

In 2000, USAID announced funding for a similarly ambitious project, FOREST, based in Khabarovsk, with the NGO Winrock International managing most of the project (see p. 172). To date, the five-year initiative has placed a priority on increasing valued-added timber processing in Khabarovsk,

Primorsky, and Sakhalin—as well as in Eastern Siberia (Krasnoyarsk and Irkutsk), with the aim of supplying products for the export market.²⁵⁶

USAID also established EcoLinks to “promote market-based solutions to environmental problems.”²⁵⁷ EcoLinks stations “tech reps” in Russia to facilitate public and private sector partnerships with U.S. businesses that possess environmental technologies. A handful of sustainable energy projects in the RFE have been funded under EcoLink’s Challenge Grants program (up to U.S.\$50,000 per project).²⁵⁸ The EcoLink program is quite small, however.

Other promising sectors. In addition to the energy sector, contributors to this book have consistently identified two other sectors where such projects are crucial but to date poorly developed: ecotourism and nontimber forest products.

Ecotourism. Ecotourism shows potential in numerous RFE regions. While the Russian people are wonderful, colorful hosts to visitors, facilities such as cabins and transport vehicles are lacking. Some of the most interesting areas are remote and can be visited only by chartered helicopter, which is cost-prohibitive for many. In addition, the visiting season is short, but the wilderness in many parts of the RFE is spectacular and much of it remains wild.

USAID-funded efforts to promote ecotourism are unsuccessful largely because they have been directed at the United States, and Alaska Airlines no longer flies to the RFE. Ecotourism efforts focusing the Korean, Chinese, and Japanese markets would be more effective.

A steady increase of tourists has visited Kamchatka since the early 1990s, but this has benefited only a few and, in some instances, threatens the ecosystem (see pp. 372–73). Nevertheless, with proper regulations, ecotourism could become a viable source of income—especially for small communities in photogenic areas of the RFE that currently depend on one resource (usually logging, mining, or fishing) for most of their income.

Nontimber forest products. The development of nontimber forest products (NTFPs) has strong potential along the Sikhote-Alin Mountain Range (Primorsky and Khabarovsk Krai). The products include medicinal plants such as ginseng, Devil’s walking sticks (*Aralia mandshurica*, *A. elata*), wild rosemary (*Ledum palustre*), Amur cork tree, yew (yew needles contain taxol, an effective cancer medicine), and *Astragalus membranaceus*, pine nuts, Manchurian walnuts (*Juglans manchurica*), and a number of berries (blueberries, raspberries, cranberries, and foxberries). Wild mushrooms and edible ferns, among them *Pleridium aguilinum* and Japanese cinnamon fern (*Osmunda japonica*), are also plentiful.

The Udege people, who live in the Bikin, Khor, and Samarga River basins in the Sikhote-Alin Range, view these products as viable economic alternatives to commercial forestry. They can provide a significant financial return and represent a sustainable form of forest use. Incorporated

in 1996, the Far Eastern Association of Nontimber Forest Products Processors is a clearinghouse for information on harvesting, processing, marketing, and pricing, and facilitates cooperation between harvesters and processors. Representing over fifty companies, the association is the first contact for Russian and international concerns interested in purchasing nontimber products. The World Conservation Union’s (IUCN) program, Building Partnerships for Forest Conservation and Management in Russia, is a new project operating in Kamchatka and Sakhalin that supports the development of small NTFP businesses with local indigenous groups. Though hampered by excessive bureaucracy, this program may become effective.

To develop, the industry needs experience in packaging and marketing products domestically and abroad and tax incentives to encourage production and export. Foreign investment is also crucial as Russian producers believe international markets hold the most promise.

Conclusion

A brief review of research suggests the RFE cannot base its future development on extractive industries, but the region faces obstacles to the alternative—manufacturing and nontraditional industries. Reasons for this are varied and complex, having much to do with how Soviet planners developed the region as a raw materials base. Segments of the Russian government and public who benefit from this resource-based export economy are happy to see it continue. But others have tried to channel FDI into manufacturing through tax credits, tariffs, and other forms of subsidy. It is hard to imagine a transition to a manufacturing economy in the RFE without this type of government support, but then again, it is hard to imagine any country or region making such a transition without some kind of government support despite the arguments of free trade pundits. Nevertheless, Russia’s intention to join the World Trade Organization (WTO) may force manufacturing supporters to cleverly mask or scale-down their efforts: The WTO may consider as protectionist any conditions placed on FDI or any tariffs and taxation intended to discourage raw materials export.

Whether international capital plays a positive role in this economic transition remains to be seen. Its importance for the region will continue to grow as the RFE gradually blends into the northeast Asian economy. But current FDI trajectories indicate little interest in manufacturing. The keys to change therefore are held by the international financial institutions, which are grappling about whether, how, and where they should support extractive industries. But their ability to conduct this clear-sighted review is perhaps clouded by the fact that the foreign corporations who control oil, gas, and mining projects in the RFE are among their most profitable clients. For the RFE, an in-depth independent evaluation of the costs and benefits of bank-financed gold- and silver-

A history of Japanese investment in the RFE

Trade and investment in the RFE date back to the first decade of the twentieth century, but large-scale investment didn't begin until the late 1960s when the Japanese government and some of Japan's largest corporations orchestrated a series of long-term agreements with the Soviet government that provided Japanese technology and low-interest government loans in exchange for raw materials.²⁵⁹ These agreements helped the Soviets develop large-scale regional production complexes in the RFE and Siberia along with the export infrastructure needed to take advantage of the Japanese market.²⁶⁰ Although they are no longer negotiated between the two governments, the agreements paved the way for similar arrangements between the Russian and Japanese private sectors and were instrumental in developing the industries that dominate the economy today.

The first government-arranged agreement was the KS Sangyo Project, designed to exploit the region's vast forests. Signed in 1968, KS Sangyo (named after the consortium of Japanese companies it represented) called for the export of more than 8 million cu. m of raw logs to Japan in exchange for bulldozers, logging machinery, steel pipes, and other equipment over a five-year period. The Japanese government would also provide soft, low-interest loans that the Soviets could pay back in resources. This powerful agreement catalyzed Japanese-Russian trade; by 1970, 63 percent of all Japanese machinery and metal goods exported to the USSR was connected to the project, and Japan had emerged as the USSR's largest trading partner.²⁶¹ Two more KS Sangyo projects followed, and together they provided for the export of more than 32 million cu. m of timber to Japan.²⁶² More importantly, the agreements gave the RFE a continuous supply of timber-cutting, hauling, and road-building machinery for the duration of the three projects (1969–1985).²⁶³ Missing in these agree-

ments, however, was a significant percentage of Japanese wood-processing equipment.

Similar agreements were made to develop other resources, such as the Neryungri coalfields in Sakha. The Soviet Union agreed to ship 100 million metric tons of high-quality coking coal in exchange for 126 billion yen worth of mining machinery, equipment, and credits.²⁶⁴ Throughout the 1980s, Sakha's coal monopoly, Yakutugol, shipped about 5.5 million metric tons annually. Though this agreement has expired, Yakutugol continues to export million of metric tons of coal to Japan each year. In the 1970s, the two countries also forged an agreement to develop Sakhalin's offshore oil and gas reserves; Japan gave U.S.\$170 million (mostly government funds) in credits and created the Sakhalin Oil Development Corporation (SODECO), a quasi-governmental Japanese agency, to round up additional project financing and expertise. This initial investment later developed into the U.S.\$12 billion Sakhalin I oil project, of which SODECO holds a 30 percent share. In the 1970s, Japanese capital also financed construction of Vostochny Port in Primorsky Krai, which has the largest coal and timber container terminals in the RFE.

Although beneficial for Moscow and Japan and selected firms, these long-term agreements have reinforced the extractive orientation of industries by facilitating the export of raw materials rather than manufactured goods. In the process, the agreements have restricted opportunities for the RFE to make structural economic changes.²⁶⁵ The KS projects are a prime example: Russia exports raw logs in exchange for logging machinery, very little processing equipment, and to pay back loans. Japan, meanwhile, uses the raw logs to create value-added products that can be sold for ten times the cost of the timber.

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mining projects in the region and the Sakhalin II project is strongly needed to shed further light on this extractive industry debate.

One measure could be taken while the debate broils: Multinational companies, to encourage good governance, should be required to report all payments to governments as a condition for IFI loans.²⁶⁶ Even if IFIs reduced loans to extractive industries and increased loans to manufacturing, renewable energy, and other industries, the benefits could be dissipated by corruption. Transparency International's 2002 *Corruption Perceptions Index* ranked Russia among the world's most corrupt countries (71st out of 102 countries), and Russian companies were ranked most likely to pay bribes to win business.²⁶⁷

Given the unlikelihood the Extractive Industries Review will lead to dramatic reform of IFI lending policies, perhaps the greatest hope for encouraging sustainable development in the RFE lies with the foreign aid agencies and NGOs. These smaller institutions do not have the resources to finance large-scale projects, but they can fund and implement projects that do not yield immediate revenue. Support in the early phases is crucial to render profitable some of the RFE's labor-intensive, environmentally sound, community-based industries (nontimber forest products businesses, ecotourism, small-scale fish processing, or village-level sustainable energy systems). These institutions need to work more effectively with those segments in Russian government that support such value-added projects.

Indigenous peoples

Josh Newell and Jeremy Tasch

Paleo-Siberians are believed to be the first indigenous peoples to inhabit the RFE. This ethnic assemblage includes the Chukchi, Yukagir, Koryak, Kerek, Asiatic Eskimos, and Kamchadal tribes, who mainly lived in the north, and the Nivkhi tribes, who mostly lived on Sakhalin. The Ainu, an isolated group of unknown origin, inhabited Southern Sakhalin, the Kuril Islands, and probably Southern Kamchatka. By the third century A.D., the Manchu-Tungus and Turkish tribes began settling the territory. The Manchu-Tungus group, which includes the Evenks, Udege, Uilta, Evens, and Nanai, settled widely throughout the region. Turkish tribes were represented by Yakuts, who settled most of present-day Sakha, with large settlements along the Lena, Vilyui, Indigirka, and Kolyma Rivers.²⁶⁸

By the fifteenth century, Russian traders began to impose a government-enforced fur tribute, or *yasak*, upon the tribes to secure a steady supply of sable and fox pelts. The *yasak* system formed the basis of Russian colonial strategy: The “early evolution of the colonial administration, its allocation of resources, military strategy and disposition of troops were all fundamentally governed by this end. This policy left its mark on Siberian society long after the fur trade had ceased to dominate its economic life.”²⁶⁹ Advancing eastward, Russian traders would take over a village, assemble the elders, and then take the tribal leaders hostage, forcing them to adopt the *yasak* system. The government would then enforce the system for a 10 percent return on all fur, fish, and animal takes in every village. “Far from being alarmed at finding a large native population in a given area, the Russians rejoiced, because of the great fur tax their subjugation would produce.”²⁷⁰

To supply the tremendous demand for furs, traders forced tribes to overhunt, which destroyed fox, otter, and bear (sable, black, and polar) populations. This destruction was then compounded by trade with the Russians, who introduced new items, such as tools and arrowheads, to the native peoples. No longer content to hunt only for need, many native tribes hunted recklessly to stockpile skins. This encouraged fighting between different tribes as they competed for hunting grounds. The competition divided the tribes, hastening their decline.

In 1858, the Governor-General of Eastern Siberia, Nikolai Muravyov, annexed the Amur-Ussuri region in the name of the Russian Empire. Annexation brought Slavic settlers to the RFE from the North and the West en masse, pushing some of the indigenous peoples southward. In the south, however, Chinese groups were establishing themselves in the Ussuri and Sikhote-Alin regions, pushing northward into the Amur Valley. Many of the indigenous people, therefore, found themselves surrounded by recent arrivals with different cultures and lifestyles. Many indigenes entered into deceitful

and exploitative debtor contracts with the recent emigrants, sometimes mortgaging the following season’s fish catch in advance. These circumstances entangled indigenes in a new cultural system that eventually forced many to abandon their traditional lifestyles and succumb to a form of pseudo-serfdom. By the beginning of the twentieth century, many indigenous groups, particularly those in the southern RFE, were unable to preserve an independent culture and way of life.²⁷¹

Under communism, beginning in the 1920s, the state appropriated tribal land and began to industrialize the RFE to profit from its natural resources. “Any parcel of land could be taken from the native people by a stroke of the pen.”²⁷² State farms blocked rivers with fishing nets, and violated the seasonal fishing periods, thus depriving the indigenous people of their traditional food resource.²⁷³

Under Stalin’s rule, collectivization and forced labor intensified and indigenous groups were forced to abandon their native tongue for Russian. Larger sedentary villages were created by collectivization policies as the state dissolved so-called unprofitable smaller villages and herded the tribes together. In place of small self-sufficient communities, indigenous peoples found themselves in much larger villages with an insufficient food base to support the population. The collectivization of the Nivkhi on Sakhalin is a tragic but common example. The population was forced to live in the cities of Nogliki and Nekrasovka without suitable land to fish and hunt; alcoholism, unemployment, and other social problems soon followed. The expansion of timber, mining, and oil-drilling enterprises, particularly after World War II, have also led some native groups away from their traditional lifestyles, with younger indigenes lured by the possibility of employment in these enterprises.

According to the 1989 census there are about 89,000 indigenous peoples in the RFE; the largest populations are in Sakha, Khabarovsk, and Chukotka (see table 1.13). These figures, however, are misleading, as Russians have acculturated into most of the indigenous communities through marriage.

Despite their tragic history, some indigenous groups continue to maintain their traditions, particularly in the far north, with its small population base and the vast undeveloped spaces. Others are attempting to regain lost traditions. Expressions of cultural awakenings are found in literature and art, and political and economic activities. And as the RFE opens to international influences, many far eastern ethnic groups are finding new hope in the emergent present.

Native peoples have formed associations to protect their rights. In 1991, in the landmark First Congress of Northern Minorities held in Moscow, these groups adopted some important resolutions, including the need to return to an administrative system of tribal soviets and councils of elders, a system that prevailed in the early years of communism and that theoretically gave indigenous peoples administrative control over their land and villages.²⁷⁴ The call for more

Table 1.13
Populations of indigenous peoples in the RFE

Region and ethnic group	Population	% living in rural areas	Region and ethnic group	Population	% living in rural areas	Region and ethnic group	Population	% living in rural areas
Sakha	24,817		Chukotka	14,690		Magadan	4,903	
Evenk	14,428	83.3	Chukchi	11,914	91.9	Even	2,433	65.4
Even	8,668	78.0	Inuit	1,452	85.6	Koryak	918	88.3
Yukagir	697	72.0	Chuvan	944	52.8	Chukchi	649	14.5
Chukchi	473	78.0	Yukagir	160	73.1	Itelmen	492	47.4
Dogans	408	91.4	Others	220	61.4	Others	411	24.1
Others	143	27.3	Kamchatka	11,800		Sakhalin	2,869	
Khabarovsk	23,484		Koryak	7,190	74.0	Nivkhi	2,008	44.4
Nanai	10,582	63.8	Chukchi	1,530	94.4	Orochi	212	53.8
Evenk	3,691	83.0	Even	1,489	90.4	Evenk	188	75.5
Ulchi	2,733	80.0	Itelmen	1,441	75.2	Nanai	173	15.0
Nivkhi	2,386	55.7	Others	150	19.3	Orok	129	14.7
Even	1,919	77.0	Primorsky	5,213		Others	159	32.7
Udege	697	71.6	Udege	766	84.7	Amur	1,817	
Negidal	502	67.0	Nanai	425	69.4	Evenk	1,617	87.4
Orochi	499	59.1	Evenk	112	13.4	Others	200	34.0
Others	475	27.4	Others	3,910	33.6			

Source: Census of Indigenous Peoples, 1989.

control over their traditional land has also led to a new form of protected territory, the Territory of Traditional Nature Use (*territoriya traditsionnogo prirodopolzovaniya* or TTP), which provides the legal framework for the transfer of land use rights to indigenous groups. Regional associations of indigenous peoples have been instrumental in calling for this new form of land use. For example, the Khabarovsk Krai government has set aside more than forty territories for traditional use and in Primorsky Krai, regional representatives of the Russian Association of Indigenous Peoples of the North (RAIPON) have been trying to establish TTPs in the Bikin and Samarga River basins to protect the land of the Udege. Laws and regulations implementing the TTPs are weak, particularly those concerning industrial development by indigenous groups within TTPs. Funds allocated by regional governments to indigenous groups to develop TTPs are also insufficient.

Other important issues for indigenous peoples include increasing federal aid to specific regions for native peoples' programs and creating solid federal and regional laws to protect their land and their rights to resource use.

Legal issues

Nathaniel Trumbull

The development of state environmental protection in Russia since the collapse of the Soviet Union has paralleled the emergence, growth, and consolidation of Russian democratization. State environmental protection received increased attention during the *glasnost* period from the mid- to late 1980s. This state protection was strengthened during the early 1990s, but the mid-1990s brought a devolution toward regional environmental protection along with a further consolidation of state environmental protection under Putin's policy of "strengthening of vertical power" (*ukreplenie vlastnoi vertikali*). While significant evolution and change mark state environmental protection, some continuity remains: After more than a decade of reform, state environmental protection now resembles the former Soviet exploitation of the natural environment more closely than ever since the collapse. The following timeline traces the development (and subsequent

near dismantling) of state environmental protection in Russia from *glasnost* to the present.

Soviet inheritance

The 1960s witnessed academic discussions of environmental issues, and the late Soviet period defined several precursors to state environmental protection in the 1990s.²⁷⁵ Detailed reporting of environmental conditions and violations was required by numerous agencies and by elaborate environmental laws, but these laws existed largely on paper rather than in practice.²⁷⁶ Legislation such as the 1960 Law on Air Protection and the 1972 Water Code established strict norms, in some cases stricter than in the West, but those norms were not widely enforced. Soviet factory managers, for example, often misreported water effluent and air pollution data, and officially published environmental statistics have proved to be inaccurate.²⁷⁷ In the late Soviet period, a time of relative *détente* and unprecedented exchange between Soviet and Western scientists, acquaintance with environmental issues was minimal, as they were considered specialized knowledge; thus, scientific understanding of such environmental issues as adverse health effects and the extent of environmental degradation was largely inaccessible to the Soviet public. Soviet officials remained silent on this topic, not wishing to alarm the public with information they were unprepared to comprehend.

Nevertheless, many environmental degradation cases were highly visible in the second half of the 1980s as press censorship was lifted. The cause célèbre became Lake Baikal:

The threat to the lake's unique biological species could not be outweighed by Soviet plans for industrialization of the region.²⁷⁸ The number of paper-processing projects planned for the region, especially on the northern shore where the Baikal-Amur Mainline (BAM) railroad passes, was eventually lowered, and a ban was imposed on the movement of logs on the lake itself.²⁷⁹ Additionally, construction of a flood barrier in Leningrad captured national attention, and the proposed reversal of Siberian rivers to flow southward to arid Central Asia was debated.²⁸⁰ The infamous 1986 Chernobyl tragedy reinforced the notion that the Soviet government placed industrial development before public and environmental health. Indeed, some argue 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 citizens.²⁸¹

1988–1992 Emerging focus on the environment

The public's lack of response to environmental degradation until the last years of the Soviet Union resulted from a paucity of information. As one environmental specialist noted, "The seventy-three year history [of the Soviet Union] is a history of systematic misinformation on the environmental situation in Russia."²⁸² This came to light when the Soviet regime's cavalier exploitation of the natural environment was gradually revealed to the public and the larger international community. Heated debate and criticism in the Congresses of Peoples' Deputies in 1988 and 1989 focused on environmental degradation and its health consequences, and public opinion polls showed that the environment ranked second or third among the problems concerning citizens.²⁸³

Because of the growing focus on environmental degradation, a January 1988 government decree established Goskompriroda, which was responsible for natural resource protection and replaced its weaker predecessor, which bore the same name. Beginning in 1989, annual reports providing the first official accounts of environmental conditions and protection efforts "promote[d] the dissemination of verified environmental information, the mobilization of society's efforts to improve the environment, and rational use of natural



Dima Lisitsyn

Members of the NGO Sakhalin Environment Watch call for the establishment of Vostochny Zakaznik (wildlife refuge) in front of the Sakhalin Forest Service.

resources, as well as the adopting of effective management decisions in this sphere.”²⁸⁴ The annual report, a synthesis of work done by many environmental agencies and specialists, has become an invaluable government document.

Promulgated under Mikhail Gorbachev, the 1991 Law on Environmental Protection specified the following: (1) the citizen’s right to a healthy and safe environment, (2) the citizen’s right to form environmental associations, to obtain information, and to seek legal redress for environmental change, (3) environmental responsibilities at federal and governmental levels, (4) environmental obligations of enterprises, (5) the state ecological examination system, (6) environmental liability, and (7) the creation of an environmental funds system.²⁸⁵ Earlier laws, such as the 1982 Law on Air Protection, remained in force, and contradictions between new and existing laws remained a hallmark of the reform period. Gorbachev appointed a presidential advisor to work specifically on environmental issues, and the biologist Alexei Yablokov served as a highly visible presidential advisor into the beginning of the Yeltsin presidency.

Press reports carried revealing details about environmental degradation during the Soviet period. A translation of Murray Feshbach’s *Ecocide in the USSR* reached a wide audience in Russia; the author’s apocalyptic visions for the future of Russia’s environment were criticized by some Russian specialists, but viewed as accurate by others.²⁸⁶ Environmental NGO and citizen activity increased significantly during this period, and such influential NGOs as the Socio-Ecological Union and the Institute for Soviet-American Relations (ISAR, later renamed Initiative for Social Action and Renewal in Eurasia) entered the country by the end of 1992.

1993–1996 Experiment with pollution charges

Reinforcing the importance and necessity of government environmental protection, the 1993 Constitution of the Russian Federation states in article 9: “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.”²⁸⁷ Article 42 of the Constitution states: “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.”²⁸⁸ Although funds were allocated to state environmental protection, approved projects were unlikely to reach fruition because of inflation and recurring nonpayment of transactions.

Under increasingly difficult economic conditions, the newly created Ministry of Environmental Protection and the Ministry of Finance implemented an innovative market-based approach to environmental protection: a pollution-charge system.²⁸⁹ The basic principles of this program were outlined in the 1994 document *State Strategy of the Russian Federation on Environmental Protection and Sustainable*

Development. In addition, the biennial *Government Action Plan for Environmental Protection for 1994 and 1995* also listed about one hundred priority environmental measures.²⁹⁰ The Ministry of Natural Resources was created in 1996, replacing the Committee of Geology and Natural Resource Use.²⁹¹ A “polluter pays” principle was established: all sources emitting pollutants above a certain threshold were charged.²⁹² Additionally, the resulting revenues were allocated to the Federal Ecological Fund and earmarked for environmental protection. The Ecological Fund’s main revenue source, the monies were allocated at both the federal (10 percent) and regional and local (90 percent) levels; the total revenue from 1992 to 1997 was about u.s.\$2.2 billion.²⁹³

The sharp decline in the industrial economy in the mid-1990s actually improved drinking water and air quality. Some improvements resulted from new air filter and water purification treatment plants and from the replacement of water pipes and delivery systems, but economic decline was by far the largest factor in lower industrial pollution levels. Indeed, energy intensity (the amount of energy used per unit of economic output) levels increased in the 1990s. As industrial production declined, however, only modest savings in energy expenditure were gained. Elsewhere, environmental regulation compliance was often the first practice abandoned by financially strapped enterprises.²⁹⁴ An in-depth assessment of Moscow’s current environmental conditions concludes that many expected environmental quality improvements have not occurred.²⁹⁵

1997–2000 Goskomekologia and devolution of state environmental protection

On May 26, 1997, decree 643 replaced the Ministry of Environmental Protection with the State Committee on Environmental Protection (Goskomekologia), resulting in a lower status for the environmental protection agency and reflecting the state’s interest in natural resource exploitation at the expense of environmental protection.²⁹⁶ Goskomekologia’s tasks were to: (1) implement and coordinate environmental policies, (2) develop environmental policy, (3) implement state *expertiza* and inspections, (4) manage nature conservation, (5) establish and supervise environmental norms and standards, (6) report on the state of the environment and provide technical advice, and (7) manage the Federal Ecological Fund.²⁹⁷ Goskomekologia was also responsible for international environmental cooperation.²⁹⁸

Goskomekologia held offices at the republic, *oblast*, and *krai* levels and was largely independent at the republic and *oblast* level, often siding with local needs rather than federal preferences. In St. Petersburg, for example, Goskomekologia was often at odds with the city environmental protection administration concerning the distribution of the regional Environmental Fund.²⁹⁹ Several other federal bodies also had jurisdiction over environmental protection issues: the

Ministry of Public Health, the Ministry of Emergency Situations, the State Committee for Land Policy, the Fisheries Committee, the Federal Forest Service, and the Federal Service for Hydrometeorology.³⁰⁰ Continuity between the former Goskompriroda and Goskomekologia was maintained by the appointment of bureaucrats like Victor Ivanovich Danilov-Danilyan, the former minister of Goskompriroda, as chairman of the new Goskomekologia until its dissolution in April 2000.

Goskomekologia's record was mixed, and its success rate for protecting the environment largely depends on the local perspective. Reasonably well-trained inspectors emerged by the end of the 1990s, and although bribery of inspectors or other Goskomekologia officials undoubtedly occurred, it appears to have been the exception rather than the rule. Goskomekologia communicated relatively openly and regularly with the environmental NGO community, and large environmental projects progressed in the late 1990s (after the 1998 financial crisis). Goskomekologia provided World Wide Web-based environmental information resources (April 2000 UNEP/GRID conference, Moscow) and the devolution of power within Goskomekologia from the federal to the regional and local levels offered creative solutions to local environmental issues. Abuse of this regional power and violations of laws also occurred, however. In Bashkiria, for example, a dam was under construction in an area considered part of a national park,³⁰¹ and de facto decentralization elsewhere meant that local decision-making was an unguided process.³⁰² In sum, Goskomekologia was both supported and criticized, but the looming prospect of dismantling the agency appalled even the most vocal critics.

Dissolution of Goskomekologia and transfer of power

Vladimir Putin's presidency, first as acting president on December 31, 1999, and by an overwhelming electoral win three months later, largely reversed state environmental protection in Russia. Putin's self-proclaimed ideology, "strengthening of vertical power," reined in the regional independence that emerged in the 1990s.³⁰³ Within two months, Putin issued decree 867, liquidating Goskomekologia and transferring its responsibilities to the Ministry of Natural Resources. The May 17, 2000, decree also abolished the Federal Forest Service, again transferring its responsibilities to the Ministry of Natural Resources; the two-hundred-year-old Forest Service previously employed about one hundred thousand people.³⁰⁴

Putin's decision appeared to respond to several events, namely the devolution from centralized to decentralized management within Goskomekologia; the August 1998 devaluation of the ruble, from which Russia's economy slowly recovered; and renewed state support for the unencumbered exploitation of Russia's natural resources to revive Russia's economy. The fallout from decree No. 867 was almost im-

mediate among Russia's nascent but increasingly coordinated environmental NGO community. In disbelief, several NGO representatives doubted Putin had approved the decision and expected its annulment. The large-scale elimination of a federal environmental protection agency is unprecedented for any industrialized country at the beginning of the twenty-first century, and despite publicly expressed reservations by some NGO representatives on Goskomekologia's prior achievements, this now-defunct agency found an unlikely source of support.

The Socio-Ecological Union, the largest environmental NGO umbrella organization, collected the requisite number of citizen signatures (2 million) to officially sanction a national referendum on three environmental questions, two of which directly related to decree 867. The questions were: (1) Do you agree with the decision to abolish Goskomekologia?, (2) Do you support the import of spent nuclear fuel from abroad (a common practice during the Soviet period that was outlawed in the early 1990s)?, and (3) Do you support the abolition of the Federal Forest Agency? The second question, although not directly related to decree No. 867, was strategically included in the signature drive, because the environmental NGO community anticipated an unambiguously negative public response.

From May through September 2000, more than one hundred environmental NGO representatives in more than fifty Russian cities tirelessly publicized the signature drive. By the end of September, almost 600,000 more signatures than the requisite 2 million were collected, but upon review of the signatures locally and by the Central Election Committee in Moscow, many signatures were eliminated for technical reasons.

On November 29, 2000, the Central Election Committee, on the basis of numerous minor technical points such as incorrectly abbreviated addresses, ruled that an insufficient number of signatures had been collected (i.e., less than 2 million) for a national referendum to reinstate Goskomekologia. An official court appeal by the Socio-Ecological Union resulted in an official reaffirmation that 600,000 votes were missing. In a further blow, President Putin signed a decree in June 2001 permitting spent nuclear fuel import for reprocessing. The Ministry of Atomic Energy argued that the revenue from such imports would be used to clean up existing nuclear waste sites in Russia, a conclusion that is considered spurious among environmental specialists in Russia and the West.³⁰⁵

In the fall of 2001 at the highly publicized Civic Forum, the government's attempt to find common ground with the environmental NGO community, Putin himself pledged support for the NGO's work. It appears, however, that his support was either only partially genuine or simply fleeting, as no follow-up activities have occurred since the forum. Some note that "the state is in no shape to support public movements, and moreover it has little interest in encouraging them."³⁰⁶

The “strengthening of vertical power” within the Ministry of Natural Resources

The most recent period has widely been seen as the “de-greening” (*de-ekologizatsiia*) of the Russian state.³⁰⁷ Hope that the newly recreated Ministry of Natural Resources will retain any substantial state environmental protection appears slim. Goskomekologia’s previous inspectors, significantly reduced in number, are now subordinate within the Ministry of Natural Resources, and the loss of expertise from Goskomekologia will likely be long-lasting. One NGO representative concludes: “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.”³⁰⁸ Furthermore, some suggest the new Ministry of Natural Resources was designed to orchestrate the future privatization of forests, to benefit specific oligarchs.

In a few cases, municipal environmental protection administrations have been retained. In St. Petersburg, for example, the municipal environmental agency (recently renamed the Administration for Environmental Safety and Natural Resource Use) appears to have fully retained its environmental protection responsibilities. This, however, is an exception to the rule, and further attempts to keep a federal environmental protection agency have failed. Instead, state-sponsored environmentally sensitive initiatives, such as the recently completed Baltic Pipeline System or oil extraction development on Sakhalin, have met with little or no resistance from the Ministry of Natural Resources. As one Russian commentator observed, “There simply is no environmental policy in Russia—the existing policy could actually be construed as intending to destroy environmental policy.”³⁰⁹

Positive developments in state environmental protection since April 2000 include improved access to basic environmental information within the Ministry of Natural Resources. While Goskomekologia’s annual reports had very small press-runs, the annual *Status of the Environment* reports are available online from the Ministry, and other official environmental publications are also increasingly available on *oblast*-level websites. Environmental issues are also covered in the ministry-funded *Prirodno-resursnyye Vedomosti* and *Ekologicheskaiia Gazeta Spasenie*, although each newspaper has an admittedly government rather than activist perspective. A few public officials remain optimistic that the better-financed Ministry of Natural Resources will provide more opportunities for environmental infrastructure investment, such as wastewater and purification plants, than did Goskomekologia.

Current developments seemingly prevent the reemergence or strengthening of future federal environmental protection: The Ministry of Natural Resources, for example, is mandated to resolve any environmentally controversial question in favor of increased natural resource extraction and profitability. It is difficult, therefore, to envision the Ministry halting a

government-sponsored project on environmental grounds. The Ministry’s overall goal of economic development is unambiguous.

Conclusions

The strengthening and subsequent weakening of Russia’s federal environmental protection during the 1990s did leave behind a positive legacy. In the face of opposition, the Russian environmental community emerged as a stronger entity and with a clearly identified opponent. As a result, the environmental community’s efforts will likely be more effectively targeted and deployed. The experience of the summer 2000 signature drive forever changed the Russian environmental community by proving that a nationwide event could be coordinated. In addition, environmental NGOs recently recruited some former Goskomekologia environmental specialists, whose expertise can only help to bolster the image of NGO representatives as informed and well trained.³¹⁰

The first land reform bill, a volatile issue under Putin’s government, was passed by the Duma in December 2001 without opposition. The government’s intention for land reform is to move quickly and decisively, and the first step will privatize about 1.5 percent of Russia’s land. Any land reform, however, is commonly seen as simply legalizing preexisting conditions that emerged from the chaos of the 1990s (when most of Russia’s land was de facto privatized). Environmental NGOs response to current land reform has been largely muted: Putin’s actions demonstrate he will advance land reform measures without public discussion (not unlike the Stolypin Reforms at the beginning of the twentieth century).³¹¹

Human rights remain a critical issue for Russian environmental activists, as in the cases of Grigory Pasko, a naval journalist accused of revealing naval secrets regarding nuclear waste dumping in the Sea of Japan; and Igor Sutyagin, accused of spying and transferring state secrets to Western government representatives even though he demonstrated that his sources were public records. The acquittal of Alexander Nikitin after more than five years in court and a one-year jail term is an exception, probably made as a result of international pressure. One difficulty is that Russian courts do not have a strong record of independence,³¹² and incidents such as firings at nuclear power plants and other environmentally sensitive sites occur regularly as whistleblowers attempt to reveal environmental risks to the public. Attacks continue on the environmental NGOs’ reliance on foreign financial assistance, especially with their active opposition to many current government policies; this support, however, is one of the best possible peace investments for Western governments.

Recent dismantling of state environmental protection may limit possible international environmental cooperation, as Russia is the cosigner of several international initiatives and bilateral and multilateral environmental programs.³¹³ Indeed, Alexei Yablokov, now head of the Center for Envi-

ronmental Politics, has called on the U.S. government to actively assist in blocking the future import of spent nuclear fuel into Russia since the United States controls the majority of this fuel worldwide.³¹⁴ Alexander Nikitin recently solicited support from foreign NGOs in drawing attention to human rights abuses in Russia. His work exemplifies the continuing confrontation between the environmental NGO community and the Russian government, as well as the NGO community's continuing dependence on the outside world for both financial and moral support.

Environmental whistleblowers in Russia

Alexander Nikitin, a former Naval officer based in Murmansk, drew the wrath of the Russian military establishment by cowriting a report for the Norwegian NGO Bellona on nuclear hazards from the Soviet and Russian navy in the Barents Sea. Nikitin was arrested in February 1996, held in solitary confinement for fourteen weeks, and, after more than a year in prison for alleged spying and the release of state secrets to a foreign government, was released. The case drew international attention to human rights abuses in Russia. Nikitin was later fully absolved, but only after two years of highly public trials that revealed the extent to which some authorities would go to conceal environmental information if considered even remotely related to militarily sensitive information and activities. The Russian Supreme Court eventually heard his case, as Nikitin's prison conviction outraged both international and Russian environmental NGOs. Nikitin's lawyers, engaged by Bellona, played a critical role in his acquittal.

The fate of another Russian whistleblower, Grigory Pasko, an investigative journalist for the Russian Pacific Fleet's newspaper, *Boyevaya Vakhra*, has been less fortunate. Pasko also focused on nuclear safety issues and was arrested by the Federal Security Service (FSB)—the Russian security police, formerly KGB—in November 1997, accused of committing treason through espionage 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, but 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 retrial. In December 2001, Pasko was sentenced to four years in prison. Both the Nikitin and Pasko cases have been highly publicized in Russia and are indicators of the general intolerance of environmental whistleblowers by the Russian government.

—NT

Serious challenges face Russia in terms of continuing environmental degradation. Russia must not only work to repair damage caused during the particularly destructive recent past, but also to address new environmental challenges.³¹⁵ While a sustained economic upturn might lead to state environmental policy reform in the future, current protection remains only marginally better than that of the Soviet period. Despite significant state intervention in the 1990s to improve the environment, genuine concern for it appears to have passed; one environmental NGO representative has called the performance of the Ministry of Natural Resources in 2002 “reminiscent of the 1930s–1950s” in terms of its Stalinist-style leadership.³¹⁶ As Russians come to appreciate their well-being (material wealth, health of their children, recreational opportunities in an unpolluted environment), the Russian state will be obliged to return to the measures begun in the 1990s for environmental protection. Until this occurs, however, Russia's future leaders will likely consider strengthening state environmental protection a luxury.

Perspective

Dale G. Miquelle, Dmitry G. Pikunov

Status of the Amur tiger and Far Eastern leopard in Northeast Asia

Large predators that sit atop the trophic pyramid and are dependent upon large tracts of land are particularly sensitive to environmental changes, including anthropogenic impacts. The Amur tiger (*Panthera tigris altaica*) and the Far Eastern leopard (*Panthera pardus orientalis*) are two such large, mammalian carnivores whose survival in the RFE, as well as in the rest of Northeast Asia, will be largely dependent on how this region develops and what steps are taken in the near future to secure key habitat and linkages across international boundaries.

Amur tiger. At the end of the nineteenth century, tigers were considered a commercially harvestable wildlife species in the southern RFE, and between 120 and 150 tigers were shot annually. Intense commercial exploitation and the simultaneous reduction and degradation of tiger habitat by logging and forest fires reduced the number of wild tigers to between twenty and thirty individuals by the end of the 1930s, bringing the wild population to the edge of extinction in Russia.³¹⁷ A ban on tiger hunting was imposed in 1947, followed by a partial (1956), and then a full (1960) ban on capturing cubs, which were supplied to the world's zoos. With these restrictions, the tiger population began to recover. At the beginning of the 1970s, there were approximately 150 tigers in the RFE; by the end of that decade, the tiger population had grown to

about 200, and by the end of the 1980s, had increased to 250.³¹⁸ According to the last tiger survey, conducted in the winter of 1995–1996, the total number of wild tigers in Russia was estimated to be 415–476, 330–371 of which were adults and subadults, with the remainder representing young.³¹⁹ According to the survey, approximately 95 percent of the tigers in the RFE belong to an unfragmented population in the Sikhote-Alin Mountain ecosystem in Primorsky and southern Khabarovsk Krai, but there were two smaller, fragmented subpopulations in Pogranichny Raion (westernmost tip of Primorsky), southwestern Primorsky, and northwestern Primorsky (tigers have since disappeared from Pogranichny Raion). Tiger migration between Russia, the northeastern provinces of China, and North Korea is possible only in three locations, two of which are in regions providing habitat for the fragmented populations just mentioned: southwestern Primorsky Krai, Pogranichny Raion, and along the crests of the Strelnikov Range along the border of Primorsky and Khabarovsk Krai opposite the Wandashan Mountains in Heilongjiang Province, China (fig. 1.8).³²⁰ The Strelnikov Range, therefore, represents an important ecological corridor—the only location where tigers from the large Sikhote-Alin population can potentially move across international boundaries.

The status of tigers is considerably worse in northeastern China than in Russia. Based on two surveys conducted by an international team of specialists in 1998 and 1999, only about four to six tigers remain in the eastern portions of Jilin Province, and only about four to seven tigers remain in Heilongjiang Province (fig. 1.8).³²¹ Most of these animals were located along the Russian border, although the presence of tigers was reported as far away as the Zhangguancailing Mountain Range in central Heilongjiang. Despite confirmation of their presence in northeastern China, there has been no evidence of breeding females for at least five years in either province, and most individuals appear to be transient dispersers with no fixed home range. It is likely that tigers dispersing from Russia are the single source of animals for China and that these cross-border movements are responsible for preventing the extinction of tigers in northeastern China.



Maurice Hornocker

The Sikhote-Alinsky Zapovednik provides some protection for Siberian tigers (Panthera tigris altaica).

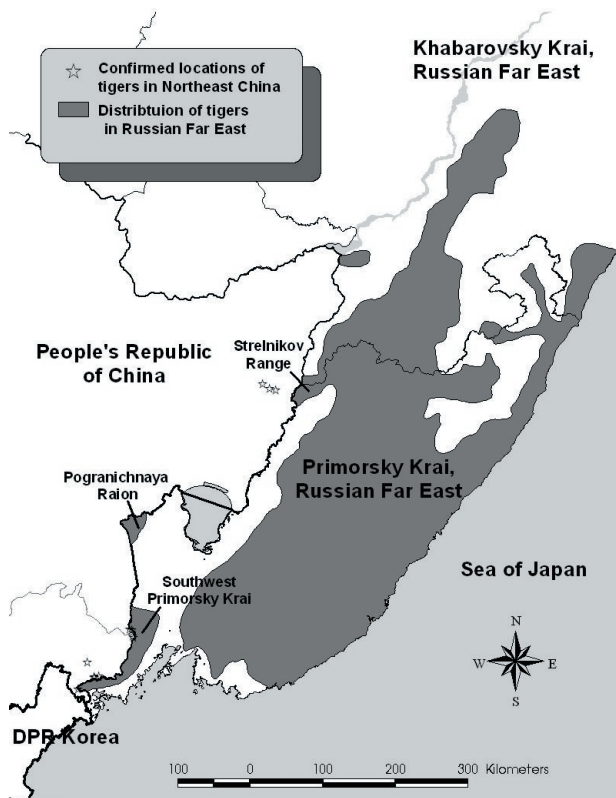
The situation on the Korean Peninsula is less clear. Military personnel reported photographing a tiger in the Demilitarized Zone (DMZ) as recently as the early 1990s. Recent journalistic reports of tigers in South Korea have not been confirmed. A 1998 scientific report from the Institute of Geography in Pyongyang suggested that tigers still remain in the Paektusan area of North Korea, but reviews of photographs provided in the report suggest that at least some tracks were misidentified.³²² There has been no evidence of tigers on the Chinese side of the border (ChangbaiShan Reserve) since the early 1990s. Until reliable ground surveys are conducted in North Korea, the status of tigers on the Korean Peninsula will remain unclear.

A monitoring program to determine trends in the population of tigers in Russia was initiated in 1997 and has been conducted yearly. Results of this program indicate that, although there are local changes within the monitoring sites, overall, the tiger population across the region has remained stable over the observation period.³²³

Far Eastern leopard. At the beginning of the 1900s, the habitat of the Far Eastern leopard covered an extensive area of northeastern China, extending to Beijing and including the Korean Peninsula as well as portions of the RFE. At the beginning of the 1900s, V. K. Arseniev reported that the northern boundary for the leopard in Russia paralleled Lake Khanka (fig. 1.9). By the mid-1900s, distribution of the Far Eastern leopard had decreased dramatically.

The first Russian survey of the Far Eastern leopard in the winter of 1972–73 confirmed the existence of thirty-eight to forty-six individuals in three fragmented populations in southern Sikhote-Alin, Pogranichny Raion, and southwestern

Figure 1.8
Distribution of tigers in the Russian Far East and four locations where tiger occur along the international boundary with China

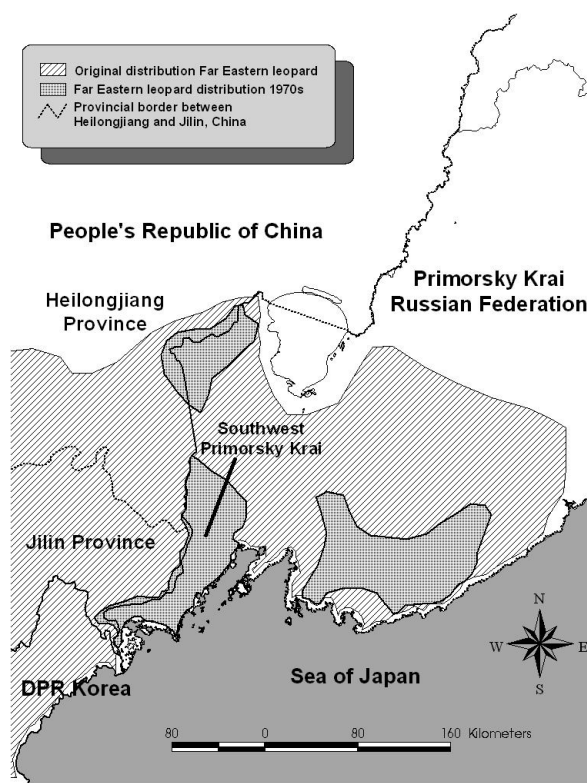


Note: Some Russian place names spelled differently than in other sections of this book.
Source: Reproduced by Dale Miquelle from Matyushkin et al., 1996.

Primorsky Krai (fig. 1.9).³²⁴ A second Russian survey in 1983–1984 was unable to confirm the presence of leopards in the southern Sikhote-Alin or the northwestern Pogranichnaya areas.³²⁵ Consequently, the total number of leopards has decreased to between twenty-five and thirty individuals due to the apparent loss of two of the three populations, and despite evidence suggesting that there may have been some leopard migration from the northern portions of DPR Korea (North Korea). In the past decade, full-scale leopard surveys were conducted in 1990–1991, 1997, 1998, and 2000.³²⁶ Data from these surveys suggest that during this period the leopard population in southwestern Primorsky Krai has remained relatively stable, but interpretation of the data by different scientists suggests that actual leopard numbers range between twenty-five and forty-two individuals.

The most recent survey in Jilin Province, China, suggested there might be four to seven leopards located mostly along the border with southwestern Primorsky (2002 surveys confirmed the presence of at least two leopards in the newly created Hunchun Tiger Leopard Reserve).³²⁷ Although no direct evidence was found in Heilongjiang, information from

Figure 1.9
Present distribution of leopards in southwest Primorsky Krai, based on four surveys conducted between 1997–2000



Note: Some Russian place names spelled differently than in other sections of this book.
Source: Reproduced by Dale Miquelle from Murzin and Miquelle, 2000.

interviews suggests that three to five leopards may still exist in this province.³²⁸ Information for the Korean peninsula is less reliable, but leopards may still survive in South Korea. We can only speculate on the status of leopards in DPR Korea, but leopards likely exist in remote areas of this country. As with the tiger, intensive ground surveys will be necessary to accurately determine the status of this animal across the Korean peninsula. At present, conservation efforts must be focused on the last known remaining population in Southwest Primorsky Krai.

Conservation of leopards and tigers. This brief review indicates how rapidly both of these large felids have declined in northeastern Asia over the past century and clearly demonstrates that the last remnant population of Far Eastern leopards, which occurs only in the Tumen River area, is on the verge of extinction. This continuing threat to leopards was the primary motivation for creating Barsovyy Zakaznik in 1979 and Borisovskoe Plateau Zakaznik in 1995. Additional conservation measures have included full and partial bans on ungulate hunting in the early 1980s. Despite these actions, the loss of habitat has continued, and in 1997, the

total area of habitat was almost half that reported in 1972. Presently, leopards inhabit 2.2 to 2.6 million ha of habitat in southwestern Primorsky Krai (fig. 1.9).³²⁹ Some evidence suggests the reproduction rate of this population may be declining.³³⁰ Whether or not this is the case, the population appears incapable of increasing in number, most likely due to a combination of the lack of suitable habitat in which to expand, the effects of genetic impoverishment, and natural and human-induced mortality rates that exceed reproduction rates.³³¹ A national strategy for leopard conservation has been devised in Russia, but there has been no coordinated effort to implement this conservation program to date. The creation of Hunchun Tiger Leopard Reserve in November 2001 in Jilin Province, China, offers hope that the amount of suitable habitat for leopards can be increased in the near future, but the creation of a second population via a reintroduction program will be critical to ensure the survival of this subspecies in the wild.

The tiger population is in better condition, but continued poaching, an increasing number of roads, threats to their prey populations, and a decreasing amount of quality habitat are all realities indicating that this species is still highly endangered. A national conservation strategy has been developed in Russia, some components of which have been implemented. Priority actions to conserve this tiger subspecies include the following:

- Improve control over illegal tiger poaching and the demand for tiger products.
- Fulfill existing plans for protected-areas network for Khabarovsk and Primorsky Krai.
- Establish specially managed zones in suitable habitat outside protected areas with multiple-use management regimes compatible with large carnivore conservation, including reduction in poaching of ungulates, closely managed hunting regimes, better control of road access, and increasing prey populations.
- Create a transboundary network of protected territories to preserve key habitat and retain a core population with the capacity for transboundary migration.³³²
- Improve awareness of local people via environmental education and awareness programs.

Protecting and expanding tiger and leopard populations is possible, but efforts to reach this goal are essential to their long-term survival in Northeast Asia. For the leopard, the creation of a second population and an increase in total available habitat are critical to increasing total population numbers and ensuring the long-term survival of this rare and endangered subspecies. International cooperation will be essential to allow transboundary management plans to ensure conservation of these large carnivores in the region.