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Articles enclosed:

- "Siberia's Threatened Forests," Nature, January 23, 1992
- "Save the Taiga," The New York Times, October 22, 1992
- "Hyundai Hacking Siberia's Forests," Earth Island Journal, Fall 1992
- "The Russian Timber Rush," The Amicus Journal, Fall 1992
- "Experts Say Logging of Vast Siberian Forest Could Foster Warming," The New York Times, January 28, 1992
- "Siberian Forests the Next Amazon?" San Francisco Examiner, January 26, 1992

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Siberia's threatened forests

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Armin Rosencranz and Antony Scott

Will Siberian forests be spared the wholesale destruction suffered by the world's tropical rainforests? The enormous changes now occurring in the former Soviet Union offer opportunities as well as challenges.

THE forests of Siberia cover 2.3 million square miles, an area the size of the continental United States[1]. They represent 57 per cent of the world's coniferous forest volume and 25 per cent of the world's total inventoried wood volume[2]. In comparison, the Amazon rainforests of Brazil are almost 50 per cent smaller[3]. Siberian forests help mitigate global warming, constitute a natural heritage of international importance, and drive local and national Soviet economies. Yet needless pressure is put on them by inefficient processing and harvesting techniques. Moreover, the rate of logging is likely to increase dramtically as foreign timber corporations enter into joint venture agreements with the former Soviet Union.

Just as in the Amazon rainforests, augmented development would hasten the breakdown of indigenous cultures such as the Yakut, Buriat, Khants and Mansis. By destroying their traditional sources of food and shelter and irrevocably changing their subsistence economies, increased logging would destroy the methods that these people have developed over centuries for sustainable use of boreal forests. It is essential that the allure of hard currency and modern technology does not outweigh the long-term health of the forests, the people and the local economies they support.

Foreign investment

Soviet planners are embarking on joint ventures with foreign multinational companies to help expand Siberian timber operations. Currently, 410 million m^3 of wood, representing the felling of more than 4 million hectares of forest, are harvested each year in Siberia[4]. Increasing this cut through joint-venture operations could help stimulate the sagging Soviet economy: investment capital is scarce, so operations can be set up quickly and efficiently only with foreign investment. Soviet planners have long exploited Siberian natural resources as a ready source of hard currency: half of the Soviet Union's 'real' money comes from export of Siberian natural resources. Export of Siberian timber now accounts for only 2.6 per cent of the Soviet Union's total foreign trade, and many Soviet interests would increase this amount. Siberian joint ventures are being negotiated with Japanese, Korean, US and European multinational timber companies. US timber giants Louisiana Pacific, Weyerhaeuser and Georgia Pacific are known to have entered into negotiations to cut Siberian forests. Such agreements will almost certainly increase the rate of logging.

The recent completion of the Baikal Amur Mainline (BAM) railway in Siberia helps make expansion possible by alleviating some of the transport problems that had previously hindered timber extraction[4]. BAM has provided access to 1,400 million m^3 of new, marketable timber[5], and its completion permits, indeed encourages, greater exploitation of the forests. The thousands of people brought to Siberia to work on the railway are now jobless, putting pressure on officials to expedite development of other industries, such as timber. Despite the railway, most experts in international forest trade believe that large-scale joint ventures in the former Soviet Union will be difficult to broker for the next 3 or 4 years because of difficulties in transport, extensive bureaucratic red tape and the non-convertibility of the ruble[3]. But the biggest concern for foreign investors is political instability and the looming issue of who will own and control Siberia's forest resources.

Although prospects for large-scale investment may not be promising in the short term, some timber companies, especially from Japan and Korea, are already tapping the huge forests of the Soviet Far East. For example, the Japanese C. Itoh and Company has begun harvesting operations in Lidoga, Khabarovsk Kray, and plans to expand in 2 years. And Hyundai, Inc., of South Korea, is said to have contracted to log roughly half a million acres in the Pozharski region of Primorsky Kray.

Increased trade with the West is often held out as a solution to the Soviets' environmental (as well as economic) woes. Typical Soviet milling practices and technologies cause tremendous waste, using three times as much timber to produce a finished product as do North American and Western European companies. Soviet companies lack the technology, for example, to make use of limbs and branches of harvested trees. Moreover, many Soviet mills do not have moveable head saws, so all logs must first be milled to standard-sized planks before being remilled to the desired size. This two-step process results in enormous waste. Western joint venture partners could alleviate much of this waste, and presumably some of the pressure to log, by introducing efficient, low-waste processing technologies.

Environmental threat

But joint ventures are more likely to exacerbate than mitigate forest damage. One would not expect that joint-venture partners would be better stewards of Siberian forests than their Soviet counterparts, given companies' destructive practices at home in the face of popular protests. Yet Soviet timber harvesting practices have already led to excessive cutting and have put a heavy burden on forest ecosystems. Ninety per cent of trees in the Soviet Union are harvested by clear or comprehensive cutting[6], after which increased erosion causes topsoil loss and inhibits tree regeneration. Topsoil loss also leads to siltation of steams — destroying fisheries, upsetting ripanan ecosystems and threatening local economies that depend on the fish. Tree regeneration is futher hindered by the harsh growing conditions in Siberia: the average diameter for mature trees in Siberia is only 24 cm, and average tree growth is two to three times slower than in the rest of the Soviet Union.

Because it is the most cost-effective way of harvesting timber, clear cutting will almost certainly be the main method used by joint ventures. Indeed, the proposed Weyerhaeuser project on the coast of Khabarovsk Kray would use clear cutting to the detriment of the fragile soils there. Because much of the accessible timber in Siberia is in mountainous areas, clear cutting will lead to greatly increased soil erosion.

Unfortunately, the Soviet regulatory system will be of little help in limiting irresponsible logging practices. The gap between the Soviet Union's relatively progressive environmental statutes and their enforcement is huge[7]. The environmental consequences of projects are not formally considered and environmental impact assessments are not performed[8]. Foreign companies seem able to conduct resource extraction operations virtually unhindered. Fines for destructive practices are too small — only 100 rubles.

Goskomprirода, the State Committee on Nature Protection, may be even less effective in regulating joint ventures than it has been in controlling domestic

operations. Because it benefits from joint ventures, the government has an interest in easing the regulatory burden. For example, although one North Korean logging operation encroaches on a legally protected nature preserve, government officials overseeing the timber industry have not responded to calls by local authorities to stop the logging.

But there are practical difficulties in fining joint-venture operations as well. Because the ruble is not convertible, most joint ventures are structured on a non-cash basis. This makes collecting fines problematic. The Tyndales Production Association in Tynda, Amur Oblast, for example, is a joint venture with a North Korean timber company. North Korea gets 39 per cent of the cut timber and the Soviet Union 61 per cent. When popular protest revealed that the Koreans had over-cut tracts assigned to them, even more cutting was the result: the Koreans could pay their fines only in timber because no currency was involved in the joint-venture agreement.

Economic obstacles

The devolution of political and economic authority in the Soviet Union raises the question of who now owns — and stands to profit from — Siberia's forests. It is clear that timber profits will no longer primarily accrue to the central, or Union, budget. But it is not clear whether control will rest with the Russian Republic (of which Siberia is a part) or with more local authorities. Either outcome threatens efforts to protect the forests.

Historically, most of the revenue generated by logging has benefited the political centre of the country, rather than local Siberian economies. Not only have the bulk of the profits been skimmed off (more than 70 per cent of an operation's profit has been appropriated by the central budget) but the bulk of the economic activity generated by the timber industry has occurred outside Siberia. More than 60 per cent of the timber exported to the rest of the Soviet Union is unmilled[5], as is 75 per cent of Siberian timber exported abroad[9].

If the republics assume economic control of the forests, current policy would favour the continued export of unprocessed Siberian timber to processing plants in the European parts of the Russian Republic. The small local share in the benefits from forest harvests will fuel demand for increasing logging activity, and economic planners in distant Moscow are unlikely to examine whether their development policies undermine the sustainability of the forests. But if local interests gain control, it is not clear that the forests would fare much better. First, having so long been denied the major economic benefit of the forests, local interests could decide to exploit the forests to the maximum extent possible. The lure of consumer goods and an increased standard of living may outweigh the need for sustainable management: there is already evidence that this is happening in some areas.

The future of Siberian forests could also be compromised by corrupt local forestry officials. Stock can be underestimated so that official allowable harvests may be similarly underestimated, allowing a black market. If control of the forests devolves to the local level but the same forestry officials remain in charge, then the profits from timber harvests could again fail to satisfy local needs and would incease calls for more cutting.

The environmental movement in Siberia has deep roots, and environmentalism all over the Soviet Union is burgeoning. But it cannot monitor joint-venture operations or demand that they adhere to certain conditions. Such operations are generally brokered in secrecy. There is no citizen review process to assess the social and environmental consequences of any project[8], nor is *Goskompriroda* consulted. Multinationals are therefore unaccountable to local populations. Projects can be initiated with little opportunity for citizen protest because there may be no foreknowledge of the project or its impact. Environmental and citizen advocates thus have no opportunity to insist that agreements or operations accommodate environmental and social concerns.

Once operations are under way, citizens are ill-equipped to monitor operations or to compel enforcement of regulations. The difficulties of transport, the enormous scale of Siberia's forests, and the lack of pollution-monitoring equipment hinders efforts to oversee hinterland operations. Moreover, the task of organizing environmental opposition to destructive projects is thwarted by difficulties in disseminating information: photocopiers, fax machines, personal computers and even paper supplies are generally unavailable to environmental organizations. Although the Soviet environmental movement is very powerful in some respects — activists were reportedly responsible for forcing the closure of more than 1,000 environmentally degrading projects during one 6-month period — grassroots environmental groups typically lack the expertise to offer positive suggestions about development practices. An environmentalist 'success' is usually confined to shutting down or halting construction of an enterprise. The economic stagnation that results from such activism may ultimately backlash, given the urgent need for jobs and basic necessities.

It is not necessarily in the best interest of Siberian environmentalists to reject all timber joint ventures. Foreign companies have the capital and know-how both to implement sustainable forestry practices and intensively to process harvested timber so that little is wasted. Such responsible operations would benefit the local Siberian economy and decrease pressure on the forests. They could also serve as an example to domestic timber operations. But, without knowledge of these development strategies and the economic and environmental benefits that can accrue from them, local environmentalists cannot be expected to do more than resist all development.

International implications

The international community is largely ignorant of the importance of Siberian forests. Discussions about global warming tend to focus on the need to preserve tropical rainforests, yet Siberian forests have a large role to play in mitigating global warming. It is not yet clear how large a carbon 'sink' the Siberian forests represent, but some researchers have suggested that boreal forests may account for the major part of the world's carbon sink. Siberian forests are certainly an important carbon store, so that accelerated deforestation could contribute significantly to global warming. Although research is by no means complete, forested Siberian lands may represent as much as 40,000 million tons of stored carbon[10]. This compares impressively with the much more publicized forests of the Amazon basin, which account for approximately 80,000 million tons of the world's stored carbon[10].

The importance of Siberia's forests in the global carbon budget must be communicated to the negotiators of international agreements to limit greenhouse-gas emissions. The international community needs to recognize Siberia's forests as an economic, climatic and wilderness resource of global significance. International as well as domestic pressure must be exerted for the sustainable development of these forests. □

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Save the Taiga

By Tom Brokaw

A new word is about to enter the environmental mainstream. The word is taiga, the Russians' name for their network of forests carpeting more than two million square miles of the Russian Far East and Siberia. The taiga is larger than Brazil's rain forests, and many scientists believe it is even more critical to the control of global warming.

Since the Russian Government, desperate for investment, is inviting outside timber companies to log the taiga extensively, scientists and environmentalists met in Sweden this month and formed a taiga rescue network. In addition to coordinating research, lobbying and publicity efforts, they're developing plans to protect the rights of the indigenous people, the Udegei and other tribes.

As Brazilian rubber tappers were an important early-warning system about the reckless cutting of their forest, the Udegei hunters, fishermen and trappers are aroused about a foreign harvest of the many riches of their expanse of forests and rivers.

I learned first-hand of their concerns during a kayaking trip with five friends through the Sikhote-Alin, the Russian peninsula hard by the Sea of Japan. A Russian wildlife biologist insisted we explore the Bikin River watershed to have a full appreciation of the pristine quality of the forest. We found conifers, poplars and hardwoods stretching over an area the size of America's lower 48 states.

Tom Brokaw is anchor and managing editor of "NBC Nightly News."

The taiga is the northernmost home of the elusive Siberian tiger. A Russian-American study of the territorial range and mating habits of this rare species was recently geographically expanded because of the threat of logging in its habitat. The tiger shares the woods with giant brown bears, moose, elk, sable and tiny roe deer.

The few people we encountered, Russian and Udegei, live a simple, hard life in one-room log cabins scattered along hunting and trapping trails or huddled in small collectives along the edge of a river.

> Russia's huge forest is in danger.

Any development of the region would not be easy. The absence of roads, power and political stability adds up to a costly investment. However, a combination of Russia's need for hard currency and the global competition for those resources, including gold and other mineral riches, will likely overrun investor caution.

Hyundai, the South Korean conglomerate, is logging a half-million acres and was recently awarded 600,000 more acres. Udegei leaders protested that they were not consulted and that requirements for environmental impact studies were set aside. Other timber giants — Weyerhaeuser of the U.S. and Japanese companies — are exploring taiga prospects.

The possibilities for haphazard, reckless and rapacious exploitation are boundless. There are few safeguards. The Pacific Institute of Geography, a branch of the Russian Academy of Sciences in Vladivostok, has prepared a plan for more local control and prudent development, but the institute is out of money. The director is tempted to sell its services to developers — an opportunity for developers to use the institute's scholarly research as a road map to the treasures.

A nonprofit California environmental think tank, the Pacific Energy and Resources Center, has created the Siberian Forests Project, a joint U.S.-Russian effort to mobilize environmentalists in a campaign against an assault on the taiga.

Even if global warming were not a threat, what happens to the taiga is a monumental environmental, economic and political issue for global consideration.

If the new world order has any meaning, what happens to this last great temperate forest must be at or near the top of the international environmental agenda.

Since there is virtually no pressure from the local population to develop the area, millions of acres could be set aside for the first true international wilderness park, financed by contributions from the industrial powers that for now are on a course only to harvest this paradise. High-end, carefully regulated international tourism could bring in additional hard currency.

Given the speed of developments in the new Russia, the need for a thoughtful, comprehensive approach to the taiga is urgent. If there is no plan for long-range stewardship based on ecological research, the wilds of the Russian Far East and beyond will be lost to the high-pitched whine of a chain-saw invasion. □

Hyundai Hacking Siberia's Forests

by David Gordon and Bill Pfeiffer

VLADIVOSTOK — The world's most extensive remaining forests are found in Siberia. Covering an area larger than the continental US, these forests exert a major influence on the world's climate. The 40 billion tons of carbon stored there also make the region a critical safeguard against global warming. The South Korean multinational, Hyundai, is now on the verge of expanding its logging operations into the last unprotected native forests Russia's Far East — in Siberia's Primorsky Region.

The forests in the upper part of the Bikin River Basin, an unusual mixture of coniferous and deciduous broadleafed species, form a border between the region's northern taiga and southern subtropical forests.

The river basin is populated by some 1500 Indigenous Udege people who rely on hunting and fishing for their local economy. The region contains important habitat for the some of the world's 250 remaining Ussuri (Siberian) tigers — the largest cat in the world — and is also home to Himalayan and brown bear, sable, deer and a great variety of migratory bird species.

In 1989, Hyundai and the Primorsky State Timber Industry formed the "Svetlaya" joint venture in order to log one million cubic meters (1.3 million cubic yards) of timber annually for the next 30 years from the eastern side of the Sikhotealin mountain range. Hyundai's joint venture arrangement, however, never secured approval for cutting any forests on the western flank of the Sikhotealin, inside the the Bikin River Basin.

According to the Regional Committee on Ecology and Natural Resources (RCENR, the Russian version of the EPA), Hyundai has already overcut areas on the eastern side of the Sikhotealin. Instead of selectively cutting a limited number of dead trees, Hyundai has clearcut a vast area of land, taking along live trees as well. Although the company was required to reforest the area, no replanting had occurred by this past summer.

The company now wants to log an additional 250,000 hectares (600,000 acres) inside

Photo by Boyd Norton

the Bikin River Basin. Hyundai and the Primorsky State Timber Industry claim that their timbering operations will not be profitable unless they gain access to the virgin forests along the headwaters of the Bikin River, which includes fish habitat crucial to supporting the Udege's survival.

However, an expansion in the scope of the joint venture must still receive permission from local and regional government agencies, including the Primorsky Forest Service and RCENR. In order to proceed with logging, the joint venture must also receive a favorable *ekspertiza* (environmental impact statement) from RCENR.

The inhabitants of the Primorsky Region are relying on international pressure to block Hyundai's efforts

Since Hyundai is now investing heavily in startup industries and the new "free economic zone" in Vladivostok, the regional capital, it has the strong support of the local governor, Vladimir Kuznetsov. The administration in Pozharsky District, on the western side of the range along the Bikin River, however, has rejected the plan.

Governor Kuznetsov and the Primorsky State Timber Industry have been pressuring the Primorsky State Forest Service, Pozharsky District officials and the Udege to gain access to the forests of the Bikin. The Primorsky State Timber Industry even threatened to sue the Primorsky State Forest Service for $60 million if it did not receive permission to cut. Although the Kuznetsov-Hyundai plan clearly violates two Russian laws, trees in the Upper Bikin River Basin are already being marked for removal.

At a July 17 meeting at the governor's office in Vladivostok, Kuznetsov harangued representatives from Pozharsky District, warning them that their district would not receive any of the expected $2.5 million profit from the joint venture if it did not approve expansion of the logging.

Meanwhile, the Udege have mounted protest demonstrations outside the government building in Vladivostok and both the Russian Forestry Committee and the Ministry of the Environment in Moscow have voiced opposition to the project. In a minimal gesture at reconciliation, Kuznetsov has said that he will halt the project if he receives orders from Russian President Boris Yeltsin. Without Yeltsin's intervention, however, Kuznetsov says he will implement the plan to cut in the Bikin River Basin.

On August 12, Alexei Yablokov, Yeltsin's advisor on environment and public health, sent a telegram to Kuznetsov stating: "I have found out from Russian and foreign media about the latest events at the Bikin River. I'm surprised at the unjustified urgency with which you have leased Bikin logging areas to the joint venture Svetlaya in the absence of support of a federal environmental *ekspertiza*. Such activity is absolutely illegal by the Russian legislature and will lead to the most serious result." Yablokov also telegraphed letters of support to the leader of the Udege and to the head of the Pozharsky District Administration.

Although Russian environmental groups, such as the Socio-Ecological Union, and international environmental organizations have shown their opposition to the project by sending faxes and letters both to officials in Vladivostok and to the Hyundai Corporation, plans to cut along the Bikin are going forward.

The Udege and local inhabitants of the Primorsky Region are relying on international pressure to block Hyundai's efforts. This tactic will allow the local people to work out long-term protection plans for these native forests, including a proposed national park that would grant the Udege control over the Bikin River Basin.

❑ **What You Can Do:** *Send letters to: Governor Vladimir S. Kuznetsov, Primorsky Regional Administration, Leninskaya str. 22, Vladivostok, 690110 Primorsky Krai, Russia; fax: 7-4232-221-019; Hyundai USA 10550 Talbert Ave. Fountain Valley, CA 92728; fax: (714) 965-3816; Hyundai South Korea KPO Box 92 Seoul, South Korea; fax: 82-2-741-2341. Send letters of support to: Pavel Sulyandziga, Chair, Association of Native Peoples of Primorye 692031, Primorsky Region, Pozharsky district, Krasny Yar, Russia. Please forward copies to the Siberian Forests Protection Project, PERC, Bldg. 1055 Fort Cronkhite, Sausalito, CA 94965; (415) 332-8200.*

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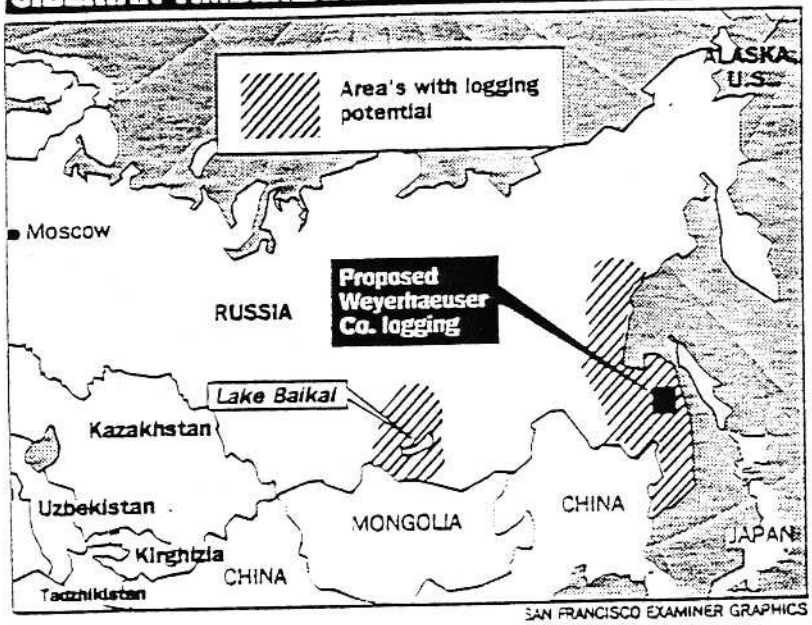
NEWS AND COMMENT

The Russian Timber Rush

Multinational logging companies threaten Siberia's vast forests

by Antony Scott and David Gordon

SIBERIAN TIMBERLAND



SAN FRANCISCO EXAMINER GRAPHICS

The forests of Siberia are the largest in the world. Girdling Asia at far northern latitudes, the boreal forests of fir, spruce, and larch, known in Russia as the *taiga*, cover an area the size of the continental United States—some 2.3 million square miles. More than half of the forests have never been cut before. The word Siberia conjures up, to the American imagination, a wasteland of ice and snow, but Siberia's vast forestlands are home to a wide variety of plants and animals, including endangered species like the Siberian tiger and sable. This wilderness, a natural heritage of worldwide importance, is now threatened by multinational timber interests at the same time that institutional structures that could be bolstered to monitor and regulate forest operations disintegrate. As Russians scramble for hard currency, Siberia's forests could be sacrificed through business deals made in the absence of regulatory oversight.

Until recently, the international environmental community was largely ignorant of the extent and importance of Siberia's forests. A flurry of press coverage came this spring, in part because of the substantial role of the forests with respect to global warming and the impending Earth Summit in Rio de Janeiro. While the subsequent international attention succeeded in eliciting statements of concern from representatives in Russian President Boris Yeltsin's government, multinational timber interests continue their operations virtually unhindered and the threat of a dramatic acceleration in the rates of timber harvests grows greater.

Foreign companies that seek to cut the timber themselves are attracted by the forests of the Khabarovsk and Primorsky regions, which lie in the Russian Far East and boast easy access by Japan and other countries. (The Russian Far East is part of what is generally known as Siberia and lies along the coast of the Pacific Ocean.) This part of the *taiga* is relatively temperate. Characterized by mixed coniferous and deciduous trees, these forests include spruce, fir, larch, Korean pine, oak, ash, and elm.

The Hyundai Corporation of South Korea has been cutting the *taiga* for over a year. Its operations lie around the village of Svetlava and on the eastern side of the Sikhotealin Mountains, on the coast of the Russian Far East. Despite the fact that its operations have received two negative environmental impact assessments from the local *Goskomprioda* (State Committee of Nature; the Russian equivalent of the U.S. EPA), which legally should enjoin the operations, Hyundai is cutting 300,000 cubic meters of wood per year. Their actions are endorsed by local and regional officials.

This cutting is both environmen-

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tally and economically disastrous. According to Russian forest activist Alexei Grigoriev, Hyundai's large-scale clearcuts are "uncontrollable." And instead of employing local Siberians, Hyundai has brought in Korean-speaking Chinese to log the forests.

But Hyundai is not satisfied with its illegal logging around Svetlaya. It wants to boost its cuts to a million cubic meters a year for the next thirty years by gaining access to the entire Bikin River watershed, which lies on the west slope of the Sikhotealin Mountains. Both the local Pozharsky *Raion* administration, which has jurisdiction over the forests, and the indigenous Udege peoples, who live off these forests, are against the expansion. Their resistance continues, despite Hyundai's repeated efforts to woo them with gifts. Nevertheless, recent reports indicate that Hyundai's operations have illegally crossed from the eastern Sikhotealins to the west. It is unclear what can be done to stop these unlawful cuts, which are taking place in some of the last uncut and unburned forests of the Russian Far East.

Although no U.S. company is yet logging the *taiga*, this seems likely to change soon. Weyerhaeuser has been negotiating with *Dallesprom*, the Far Eastern forest industry, since early 1990 in hopes of going in on a joint venture. In fact, the company recently forged a joint venture with the *Koppinskii LesPromKhoz*, the Russian forest industry, which is currently cutting around the river Koppi, about eighty kilometers north of Botcha. Weyerhaeuser is most interested in logging about 1 million hectares around the river Botcha, along the Pacific coast at the most southern point of Khabarovsk Krai, roughly parallel to the northernmost islands of Japan.

The Botcha region marks the transition from northern boreal to temperate forest, and thus is one of the few places in the world where one can find reindeer, tiger, brown bear, sable, and salmon all in the same ecosystem; many of the region's species, like the Siberian tiger, are rare and endangered. Last year alone, eight of the Siberian tiger were spotted there. The largest subspecies of tiger in the world, it is the only tiger that makes its home in temperate forests. Threatened mainly by logging, the small population could easily become extinct, as its numbers are down to between 200-500. Logging not only affects the habitat of the tiger, but also that of the wild boar, which the tiger feeds upon. Maurice Hornocker, director of the Wildlife Research Institute of Moscow, Idaho, says, "The Siberian tiger is becoming the spotted owl of coastal Russia. [It] is being logged out of existence."

"The Siberian tiger is becoming the spotted owl of coastal Russia. [It] is being logged out of existence."

Although the local *Goskompriroda*, a local environmental authority akin to U.S. state agencies, is opposed to logging the region, the lure of hard currency seems to have swayed other local officials. Before Weyerhaeuser showed interest in logging the forests there, the Botcha basin was slated for permanent protection as a nature preserve, which would have put it off-limits to humans except for scientific studies. (The Botcha region has status as a temporary reserve until August 1992.) While the local *Goskompriroda* still seeks permanent protected status, its requests have been effectively blocked by the regional *Goskompriroda*, located in the capital city of Khabarovsk. This regional authority had originally concurred that the Botcha basin deserved protection, but Anatoly Kolenchenko, the chair of the regional *Goskompriroda*, has withdrawn his support now that Weyerhaeuser wants to cut the area.

Local forest activists charge that Weyerhaeuser wants to use a "trick" to gain access to the Botcha region if their main negotiations fall through. In Weyerhaeuser's recent joint venture with the *Koppinskii LesPromKhoz*, the Russian forest industry, Weyerhaeuser will first help the *Koppinskii LesPromKhoz* to cut all the forests around the river Koppi, eighty kilometers north of Botcha. Because the *Koppinskii LesPromKhoz* holds the timber rights to the forests around the river Botcha, Weyerhaeuser will also build roads into the Botcha River Basin and thus gain access to this previously roadless area.

Mindful of the area's past wariness of foreign multinationals, Weyerhaeuser has undertaken a major public relations campaign to convince local environmentalists, scientists, and politicians that the company is committed to environmentally responsible forest management. Weyerhaeuser has provided local officials with all-expense-paid trips to the United States to see its model tree farms—carefully bypassing the areas in the Pacific Northwest where ancient forests have been leveled by Weyerhaeuser clearcuts.

Weyerhaeuser has gone even further to win over local support. Less than a year ago Dmitry Efremov, director of the Far Eastern Scientific Research Institute for Forest Management, spoke out against the Weyerhaeuser project, citing the threat to the region's ecology. Now, however, Efremov's institute has been enlisted by Weyerhaeuser to serve as an "independent monitor" for company operations. Given the fact that the institute has no other source of funding during the current economic crisis, one wonders whether the scientific objectivity of this institute has been compromised.

Weyerhaeuser claims that its efforts to calm the fears of local citi-

zens have been successful. Many Russian environmentalists and politicians tend to believe that foreign timber companies will be better stewards of the *taiga* than their own people have been. They theorize that foreigners have better technologies and forest practices; that foreigners are not part of the corrupt state-run monopolies; and that foreigners are used to following strong environmental laws in their own countries.

Weyerhaeuser plans to use clearcutting, followed by seedling replanting, in its proposed Russian Far East operations. Although local scientists warn that this will be extremely harmful to the fragile soils and delicate balance in the region, Weyerhaeuser has refused to consider any other harvesting method. Using the same arguments it has used in cutting the ancient forests of the Pacific Northwest—that virgin forests are "unproductive" and "over-mature"—Weyerhaeuser representative Harthon Bill has said that "the best thing they [the Russians] can do is clear-cut as fast as possible—get rid of all that dead-standing timber."

Given the nature of the Siberian forests, the ecological consequences of such clearcutting are grim. Ninety percent of the trees harvested in Russia are already felled by clearcuts, and in some regions, the percentages are even higher. The usual problems of increased erosion and watershed degradation associated with clearcuts are compounded in the delicate ecosystems of the *taiga*. Growing conditions in Siberia are exceptionally harsh, and it is even harder for Siberian forests than for temperate forests to regenerate in the wake of clearcuts. Timber operations conducted on permafrost encounter a special set of problems. Permafrost melts much more quickly after it has been logged, increasing its sensitivity to erosion. Even worse, roughly half of permafrost forests become swamp in the wake of timber harvests.

Given their desperate need for hard currency, it is perhaps unsurprising that local officials are working to encourage foreign joint ventures. But joint ventures that stress investment in processing technologies must be promoted, so that as much local economic benefit can be derived from the timber as possible. Unfortunately, many foreign companies are more interested in selling the raw logs to make a quick profit. As a rule, foreign companies prefer to provide efficient harvesting equipment, which would allow the Russians to cut their forests faster. Scott Marshall of Weyerhaeuser says, "The question of local processing into wood products is a difficult one" due to "very poor manufacturing practices and a lack of local marketing expertise." If the development pattern of exporting raw logs is set in motion, Siberia will be deprived of most of the timber's economic value.

The export of raw Siberian logs will not even benefit unemployed U.S. mill workers in the Pacific Northwest. All imports of unprocessed wood from Siberia into the United States are currently banned, because foreign tree parasites could wreak havoc on the remaining U.S. forests. Consequently, multinationals often send raw Siberian logs to Japan—the very practice that is responsible for the loss of many mill jobs in Washington and Oregon.

We tend to look at a forest's value in terms of the lumber and paper it can provide. But these are perhaps the least valuable of a forest's products. Forests filter air pollution, absorb carbon dioxide and thus mitigate global warming, protect watersheds, safeguard against landslides, and are areas for recreation. Unfortunately, to Russian localities facing spiraling food prices and a deficit of hard currency, these functions may not seem critical. These localities are now in a position to decide how they will manage their natural resources over the long term; the patterns of development initiated today are likely to have long lasting consequences and will be difficult to reverse.

Russian government officials, both on national and local levels, would do well to learn from past forest mismanagement not only in the Soviet timber industry, but also in the world's tropical and North America's temperate forests. To safeguard against current and future greed, they would do well to set aside unique areas, like the Botcha River Basin, as permanent nature preserves and national parks. Where foreign investment is permitted, concerted effort must be made to ensure that harvested timber generates maximum benefit for local Siberian economies. Officials can mandate the hiring of Russian workers, require local wood processing investment, and ban the export of raw logs. Perhaps most important, Russian government officials can mandate research into what would constitute sustainable forestry in the *taiga*. By requiring companies to follow those practices, the wholesale destruction of the *taiga* through large-scale clearcutting would be prevented. •

What you can do

You can write to Vladimir Desyatov, President Yeltsin's representative in Khabarovsk Krai, expressing your concern about the reversal of administrative support for protected status for the Botcha region. (Russia, 681000, Komsomulsk-on-Amur, Prospect Mira 38 Block 2 Apartment 20, Desyatov, Vladmimir Mikhailovich). More general expressions of concern regarding sustainable harvesting of the *taiga*, including support for the recommendations above, can be sent to Alexei Yablokov, Russian State Councillor on Ecology and Public Health (Russia, 117296, Moscow, Kremlin, President of the Russian Federation, Russian State Counselor for Ecology and Health, Yablokov, Alexey V.).

Experts Say Logging Of Vast Siberian Forest Could Foster Warming

Caution is urged as Russians look for hard currency.

By WILLIAM K. STEVENS

The forests of the Amazon and other tropical regions have been getting attention for some time, and understandably so. They are home to a disproportionate share of the world's living species, they absorb huge amounts of atmospheric carbon dioxide that would otherwise exert a big heating effect on the earth's climate and they are rapidly being destroyed.

Less well known is the vast stretch of fir, larch, spruce and pine that girdles the continents at far northern latitudes and is known as the taiga. The word is derived from the Russian, appropriately enough since the Siberian part of the taiga is the largest forest in the world, far larger than the Brazilian Amazon. At more than two million square miles, it would cover the entire continental United States excepting Alaska. Like the tropical forests, it is a major absorber of atmospheric carbon dioxide.

Now, with Russia economically devastated and hungry for hard currency as it converts to a market economy, environmentalists are raising fears that joint ventures between the Russians and American, Japanese or Korean timber companies could lead to extensive deforestation of the Siberian taiga. This, the environmentalists warn, could contribute significantly to global warming.

If carbon dioxide and other heat-trapping gases continue to build up in the atmosphere at the present rate, the earth's average surface temperature will rise by 3 to 8 degrees Fahrenheit in the next century with possibly catastrophic results, many scientists predict. The rate of buildup would presumably increase if Siberia were deforested.

The possibility is raised in an article in the current issue of the British journal Nature by Dr. Armin Rosencranz and Antony Scott of the Pacific Energy and Resources Center in Sausalito, Calif., a nonprofit environmental research and education center that works with Russian environmentalists to defend the Siberian forests.

The forests "have a large role to play in mitigating global warming," they wrote, emphasizing that this "must be communicated to the negotiators of international agreements" aimed at limiting or reversing the buildup of carbon dioxide.

Negotiators from 130 countries are to meet in New York next month in the fourth of five sessions aimed at producing a binding international convention on the control of heat-trapping gases. Participants say the session is crucial, since there is not much time left before the scheduled signing of the pact in June in Rio de Janeiro, and the United States and other industrial nations differ over whether to set specific targets for limiting carbon dioxide emissions. Less attention has been given to the important role of deforestation in global warming, and particularly to the role of the taiga.

Some forestry experts question whether large-scale logging will ever catch on in Siberia, given its inaccessibility, generally high costs and a short growing season for the regeneration of trees.

But the pressures of economic survival in the former Soviet Union, and particularly in hard-pressed Siberia, are causing Russians to "look to natural resources for conversion into cash, and people in the United States, the West and Korea and Japan are waiting to use these natural resources," Dr. Rosencranz, the president of the Pacific Energy and Resources Center, said in an interview.

He and Mr. Scott noted in the Nature article that the recent completion of a new Siberian railway helps make expansion of the timber industry possible. Thousands of people sent to Siberia to work on the railway are now jobless, they wrote, adding to the pressure to speed up development of other industries, like timber.

The New York Times

Vladivostok is the major port for Siberia, where economic pressure is said to be rising for harvesting the region's timber resources.

The article asserted that the Louisiana-Pacific Corporation, the Georgia-Pacific Corporation and the Weyerhaeuser Company, three American timber giants, have begun negotiations to cut Siberian forests. Any agreements, the authors wrote, "will almost certainly increase the rate of logging." Weyerhaeuser, said Dr. Rosencranz, has built a large loading dock near Khabarovsk, a major Siberian city.

The authors wrote also that Hyundai Inc., the South Korean conglomerate, "is said to have contracted to log roughly half a million acres" in eastern Siberia and that C. Itoh and Company, a Japanese concern, had already begun harvesting trees there.

S. S. Chae, senior executive vice president of Hyundai Resources Development Company Ltd. of Seoul, confirmed that his company had entered into a joint venture to log the half-million acres and that the company was considering expanding its Siberian operations.

C. Itoh imported 100,000 cubic meters of softwood logs from Siberia last year and has also invested in a "small-scale sawmill" in Siberia, said Yoshiharu Matsumoto, a spokesman for the company in Tokyo.

The taiga entices loggers; political instability deters.

Georgia-Pacific representatives have been to Siberia to investigate the long-term potential of the timber resource, but the company has not begun any joint-venture negotiations, said Sheila Weidman, a company spokeswoman. With 50 percent of the world's inventory of softwood, she said, Siberia could in time be a major competitor on the world market.

But roads, railroads and other infrastructure necessary to develop Siberian forestry are insufficient, and the convertibility of the ruble is still a big question, she pointed out. For these reasons, she said, Georgia-Pacific sees the Siberian forests "as a possible opportunity well into the future but is not considering it in the short term at all."

Similarly, Louisiana-Pacific has looked at the Siberian forests but has no present plans to exploit them, said Barry Lacter, a spokesman at the company headquarters

Weyerhaeuser has "explored the feasibility" of logging operations in territory of Khabarovsk, in eastern Siberia, and has considered how to ship wood out of the territory, said Scott Marshall, a spokesman in Tacoma, Wash. While "we're not doing anything yet," he said, it is possible the company will enter Siberia in the next 5 to 10 years. "Certainly," he said, "there is a likelihood that someone will.

Despite interest from timber companies, "it's hard to see much happening in the next decade" in Siberian timbering, said Dr. Roger Sedjo, an expert in world forests at Resources for the Future, an independent research organization in Washington.

Dr. Rosencranz and Mr. Scott acknowledge that short-term prospects for investment in Siberian timber might not be good because of economics, transporation difficulties, red tape, non-convertibility of the ruble and especially political instability and doubt about who will own and control the forests. But they insist that it is essential to insure that "the allure of hard currency and modern technology does not outweigh the long-term health of the forests."

Difference With Tropics

While recognizing the possibility of both local and global environmental damage, Dr. Sedjo pointed out some important differences between the taiga and tropical forests. In the trop-

David R Cross

The Siberian taiga is the world's largest forest and a major absorber of atmospheric carbon dioxide. Deforestation could contribute to higher global temperatures. This is a logging team near Khabarovsk.

ics, he said, deforestation proceeds mostly because forests are being converted to agriculture and other forms of development in a region where population pressures are acute.

By contrast, he said, unoccupied timberlands regenerate. In fact, he said, there has been a net gain in forest acreage in the heavily logged temperate regions of the Northern Hemisphere. Moreover, he said, trees converted to wood products like houses and furniture do not release carbon dioxide to the atmosphere as tropical forests do when they are burned. It is even likely, he said, that regenerating forests would remove more carbon dioxide from the atmosphere than the mature ones they replace, since young, growing trees absorb the gas at a higher rate.

Dr. Rosencranz and Mr. Scott argue that regeneration would be slow in Siberia because the growing season is so short, and that clear-cutting — the most economical way to log — would cause erosion. This, they fear, would further inhibit regeneration and destroy aquatic ecosystems on which native Siberian people depend for fish they eat.

While regeneration does take longer in the far north, said Mr. Marshall of Weyerhaeuser, it has been done successfully in the taiga of Canada and Scandinavia for decades. Moreover, he said, some parts of Siberia are warmer and more favorable for tree growth than others.

Dr. Sedjo said that Siberian logging operations would be among the costliest in the world, despite the new railway. Subsidies by the Russian or local governments, unlikely in the present economic climate, might overcome the timber companies' cost objections, he said. Successful efforts in the United States and elsewhere to prohibit logging on conservation grounds could also drive up the world price of wood, he said, making Siberian logging more attractive.

But, he said, large increases in Siberian timber production "may never occur."

To whatever degree the Siberian forests are exploited, Dr. Rosencranz and Mr. Scott wrote, they ought to be exploited in a sound way so that the resource itself, "an economic, climatic and wilderness resource of global significance," is preserved.

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Siberian forests the next Amazon?

American timber companies ready to move in, log the Russian wilderness

By Jane Kay
EXAMINER ENVIRONMENTAL WRITER

American timber companies are pursuing the right to log parts of the Siberian forest, a vast area twice as large as the Amazon rain forests of Brazil and one of the world's last great wildernesses.

As the old Soviet system breaks apart and a newly independent Russia desperately seeks foreign currency, the remote boreal forest of Siberia is becoming a natural resource up for grabs — and an environmental battlefront.

A developing international movement that includes Russians and foreign environmentalists is warning that deforestation of Siberia could trigger an ecological catastrophe equal to the destruction in the Amazon Basin.

Like Amazon rain forests

In a commentary in the current issue of Nature magazine, two researchers at the Sausalito environmental think tank, Pacific Energy and Resources Center, warn that the northern temperate Siberian forests in eastern Russia are as valuable and as vulnerable — if not more so — than their Southern Hemisphere counterparts.

Most Americans are familiar with the debate over the ecological importance of the South American tropical forests. There, in the deep jungles of central and western Brazil, economic pressure drives logging, burning and clearing for agriculture to the detriment of thousands of rare species and the native tribes who have lived there since before Europeans colonized the continent.

Similar stakes are at issue in Siberia, which is often misconceived as a barren wasteland, but is a rich, relatively undeveloped land.

The Siberian forest covers 2.3 million square miles, stretching from the Ural Mountains' western edge on the Eurasian border to the tip of the Chukotka Peninsula near Alaska — an area the size of the continental United States. In it are more than half of the world's conifers and a quarter of the world's standing trees.

Thick masses of greenery

The forest is home to a fragile sub-arctic ecosystem that nurtures plants, birds and animals and contributes mightily to slowing of harmful global warming. This profound natural system supports ancient cultures indigenous to Siberia — the Yakut, the Buriat, the Khants, Mansis, Evenki — and herbal plants used for medicine and rare animals, including the Siberian tiger and brown bear.

More than half the trees in the Siberian forest are virgin stands. These thick masses of greenery act as traps, or sinks, that hold and

[See FORESTS, A-12]

◆ FORESTS from A-1

Siberian forests the next Amazon?

absorb carbon dioxide, a waste product of industrial fossil-fuel burning. Carbon dioxide is the prime culprit behind the greenhouse effect, a phenomenon of gases trapping the sun's heat near the Earth's surface and producing profound climate changes. The Siberian forest stores about 40,000 million tons of carbon dioxide, half of the Amazon Basin's capability.

Siberia also is the site of Lake Baikal, the world's deepest freshwater lake with a depth of 5,712 feet. Holding one-fifth of the Earth's fresh water, Baikal nourishes more than 2,000 animal species, 1,200 of which are found only in the lake.

Lake Baikal already suffers from pulp and paper mill and silt discharges, pollution that would be worsened by deforestation in its watershed.

Past heavy logging in Siberia has led to topsoil erosion and silt-filled lakes and streams. Because of the region's cold climate, trees regenerate slowly — two to three times slower than in the rest of the former Soviet republics.

Armin Rosencranz and Antony Scott, the Sausalito researchers, say the ponderous Soviet regulatory system will be of little help in limiting irresponsible logging in Siberia, particularly under the accelerated pressure to export logs for cash.

"It's like the Wild West of the 19th century. Every man for himself," Rosencranz said.

"Every village that has a stand of timber can negotiate. The only people in charge are those on site. The structure and the political authority has broken down. Even (Russian President Boris) Yeltsin's environmental advisers are involved with oil and gas and paying scant attention to the forests."

Soviet planners long exploited Siberian natural resources as a steady source of hard currency, and half of the Soviet Union's "real" money comes from export of Siberian products, according to the Sausalito researchers.

Currently, environmental enforcement is virtually ineffectual, Rosencranz and Scott say in their article. Referring to current and past experiences with Japanese, Korean, Chinese and Europe logging ventures, they write:

"Foreign companies seem able to conduct resources extraction operations virtually unhindered. Fines for destructive practices are too small — only 100 rubles ($1)." They conclude that "joint ventures are more likely to exacerbate than mitigate forest damage," the article says.

Scott Marshall, timberland vice president at Weyerhaeuser Co. in Seattle, which is in the midst of negotiating a Russian logging deal, not only disagrees with that conclusion, but asserts that U.S. logging companies will bring new reforestation techniques and efficiency to control waste to the Siberian forest.

"It's a lot like Montana or Alberta and Saskatchewan," said Marshall. Reforestation and protection against pests and fire are in the primitive stages there, he said. His company wants to plant new trees after logging, and is meeting with a Green Committee, he said. "Once our objectives are understood, we get excellent support from the environmental groups."

Currently, loggers fell 10 million acres of Siberian forests each year, with Siberian timber representing 2.6 percent of Russia's total foreign trade. But logging is expected to increase dramatically as the foreign timber corporations enter into joint ventures with the republics.

U.S. timber executives from such companies as Weyerhaeuser, Louisiana Pacific Corp. and Georgia Pacific Corp. are eyeing vast stands of spruce, larch and white fir.

L-P western division manager in Eureka, Joe Howe, said his corporation has nothing in the works. Sheila Weidman, G-P spokeswoman in Atlanta, said, "We're looking at the potential." On the trips to Russia, G-P found some problems with the convertibility of the ruble, ownership issues, economic stability and the lack of an infrastructure, she said.

Weyerhaeuser has been searching for trees in Russia for four years and this year could be starting up a logging operation at a rate of an annual 200 million board feet — equal to the historic peak annual cut on the Shasta-Trinity National Forest or the yearly consumption of one medium-sized California sawmill.

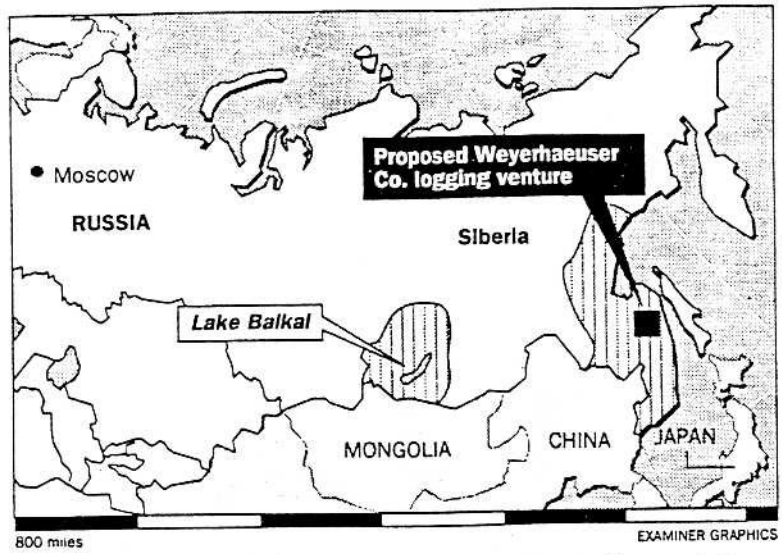
If Weyerhaeuser's deal goes through, it won't sell the trees in the United States but to closer Asian markets, Marshall said.

David Gordon, another Pacific Energy researcher who has traveled to the Siberian forest to meet with local people there, said Weyerhaeuser has told local officials it wants to clear-cut sections of the forest and then replant them.

Now some of the local people, who he says wanted small-scale cuts and natural regeneration, are concerned that clear-cutting will damage the forest's permafrost layer, leading to bogs, swamps or other ecological deterioration.

SIBERIAN TIMBERLAND

Parts of Siberian forest where foreign corporations have shown greatest interest in establishing logging operations



Pacific Energy and Resources Center

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