

## ***Siberia-Pacific Oil Pipeline***

### **Economic and Environmental Impact and Risks**

of an

### **Oil Terminal in Southern Primorsky Krai**

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## Summary

Transneft, Russia's state-owned oil pipeline monopoly, plans to build the world's longest oil pipeline (4,188 kilometers) to transport oil from western and central Siberian oilfields to the Sea of Japan. The pipeline will be Russia's largest federal project to date with total investments estimated at between 11 and 17 billion USD.

The two major environmental issues associated with the pipeline are the proximity of the route to Lake Baikal and the proposed oil terminal location on the Amur Bay near Vladivostok. This report will focus on the terminal issue.

Conservationists strongly oppose a terminal located on the Amur Bay. Alternative terminal locations, including several sites near Nakhodka, are not only superior from an environmental perspective, but also from social and economic perspectives. Located east of Vladivostok, Nakhodka is the region's largest port. Perevoznaya is presently a pristine coastline with little development and infrastructure. It would be much more efficient to utilize already existing infrastructure near Nakhodka, where oil terminals already exist.

Of all the alternatives examined by specialists, Perevoznaya on the Amur Bay is the worst possible spot for an oil terminal. Strong winds and fog are common in the Amur Bay, and the bay is large, open and shallow. As a result, the terminal must be built at least two kilometers offshore where tankers will be exposed to frequent storms and periods of high waves. Tankers will also need to navigate through a string of small islands to reach the terminal.

Given these unfavorable conditions, the risk of accidents resulting in oil spills is 17 times higher in the Amur Bay than if an alternative terminal site is selected near Nakhodka or elsewhere in south Primorsky Krai. Moreover, a spill in the Amur Bay would do much more damage than at other sites. Conditions in the bay make it difficult to control spills and spills are likely to spread over a large area and to pollute long stretches of the coastline.

Fifteen percent of Russia's endangered species can be found exclusively in the area of the proposed terminal site in Southwest Primorsky Krai. One of the endangered animals found only in Southwest Primorsky Krai is the Amur leopard; with a population of about 35, the Amur leopard is probably the world's rarest big cat. The pipeline would run directly through a wildlife refuge and the proposed terminal site is adjacent to Kedrovaya Pad, a UNESCO Biosphere Reserve and important leopard habitat. Vladivostok, the region's largest city, is opposite the terminal site on the Amur Bay. The most popular tourist resorts and sandy beaches in the Russian Far East – visited by thousands of tourists annually – and Russia's only marine reserve are also located nearby.

On 1 July 2005, a court in Khabarovsk, Russia, ruled the official Environmental Impact Review (EIR) of the project invalid as a result of serious irregularities and violations of Russian law. Irregularities include the following: withholding of essential project information, failure to investigate alternative terminal sites, providing of incorrect information to the public, use of inaccurate information in the project assessment (including inaccurate data on the suitability of the proposed terminal site) and obstruction of independent NGO participation in the EIR process.

President Putin recently criticized Russian environmentalists for creating obstacles for Russia's economic development. He accused NGOs of accepting finance from "competitors," citing the Siberia-Pacific Pipeline Project as his main example. However, NGOs argue for a changed pipeline route, not for cancellation of the entire pipeline project. The present controversy concerning the proposed terminal site is the result of poor planning by Transneft and Russian authorities, such as not selecting the site on the basis of objective scientific data. Contrary to statements by certain Russian officials, NGOs opposed to the

proposed terminal site have not received any support from “competitors” (such as the companies that own oil terminals near Nakhodka).

A total of 17 public hearings were organized in August along the pipeline route. On 15 August 2005, public hearings were held in Vladivostok and in Khasan, the district where Transneft wants to build the terminal. The vast majority of the participants in Vladivostok opposed the plan to build at Perevoznaya. In Khasan, not a single participant spoke out in favor of the plan. In spite of this, opposition to a terminal at Perevoznaya is not mentioned in the protocol summarizing the hearing results. The protocol states that the hearing participants approved of the project.

At a conference in Vladivostok on 18 September 2005 three Russian ministers spoke out against the plan to build the terminal at Perevoznaya. Yury Trutnev (Ministry of Natural Resources), Igor Levitin (Ministry of Transport) and German Gref (Ministry of Economic Development and Trade) stated that Nakhodka is a more suitable terminal location because it is a developed industrial area. However, Transneft declared it still plans to build at Perevoznaya, claiming the statements by the ministers are not an official government decision.

## 1. Introduction

*On 31 December 2005 Russia's Prime Minister Mikhail Fradkov announced that Russia will build the world's longest oil pipeline (4,188 kilometers) to transport oil from western and central Siberian oilfields to the Sea of Japan. The pipeline will be Russia's largest federal project to date with total investments estimated at between 11 and 17 billion USD. The potential environmental damage of this project is unprecedented. Environmentalists were shocked by the proposed oil terminal location: pristine Perevoznaya on the Amur Bay. Perevoznaya is located in the heart of Russia's biodiversity "hotspot," Southwest Primorsky Krai, which is home to the remaining population of Amur leopards.*

There are two major environmental issues connected to the pipeline: 1) the route passing near Lake Baikal and 2) the proposed terminal location on the Amur Bay near Vladivostok. The focus of this document is on the terminal issue. However, we have included a brief summary of pipeline issues near Lake Baikal in Appendix V.

The contents of this report are:

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### Appendices

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## 2. Background

Transneft, Russia's state-owned oil pipeline monopoly is responsible for the Siberia-Pacific Oil Pipeline Project.<sup>1</sup> Russia does not allow private ownership of long-distance oil pipelines. Transneft owns and operates Russia's entire long-distance oil pipeline network with a total length of about 50,000 km.<sup>2</sup> According to Transneft, it handles more than 94% of the oil produced in Russia.<sup>3</sup>

Most Russian oil is produced in western Siberia and transported through pipelines to Western Europe. However, the Siberia-Pacific Pipeline promises to create a significant shift in the direction of oil exports. The Siberia-Pacific Pipeline will facilitate exports to major oil importing countries around the Pacific Rim, including China, Japan, Korea and the US. The pipeline is currently a major factor in relations between China, Japan and Russia; both China and Japan have voiced a desire to receive the majority of oil produced in western and central Siberia.



The decision to build the Siberia-Pacific Pipeline from Taishet in western Siberia to Perevoznaya on the Amur Bay became official when Prime Minister Fradkov signed a decree on 31 December 2004. In May 2005, Russia's Industry and Energy minister Viktor Khristenko announced that the Siberia-Pacific Pipeline will be built in two stages. The first stage of the project will include building both the section of the pipeline from Taishet to Skovorodino (on the Chinese border) and the oil terminal at Perevoznaya. The estimated cost of the first stage of the project is 6.5 billion USD. Transneft initially announced that the pipeline would have a capacity of 80 million tons a year. This was later reduced to 50 million tons. According to the official plans, the terminal will have a capacity of 30 million tons. This

<sup>1</sup> In English language media, the pipeline is usually called "the Eastern Oil Pipeline" or "the Pacific Oil Pipeline". The official Russian name is "Eastern Siberia – Pacific Ocean Pipeline" (Vostotsnii Sibir – Tikhii Okean Nefteprovod). In this document we use the name Siberia-Pacific Oil Pipeline.

<sup>2</sup> See the Transneft website: [www.transneft.ru](http://www.transneft.ru)

<sup>3</sup> From an undated Transneft press release about a project loan secured in the first months of 2005 from private banks for expansion of the capacity of the Baltic Oil Pipeline.

is to be increased to 50 million tons during the second stage of the project. The oil will be transported by rail from Skovorodino to the terminal until the terminal is connected directly to the pipeline during the second stage of the project. At least 20 million tons annually is to be exported from Skovorodino to China by rail.

At a conference in Vladivostok on 18 September 2005 three Russian ministers spoke out against the plan to build the terminal at Perevoznaya. Yury Trutnev (Ministry of Natural Resources), Igor Levitin (Ministry of Transport) and German Gref (Ministry of Economic Development and Trade) stated that Nakhodka is a more suitable terminal location because it is a developed industrial area. However, Transneft reconfirmed plans to build at Perevoznaya, claiming the statements by the ministers were not an official government decision.

In contrast with the oil and gas projects in Sakhalin, where oil companies such as Shell are the main operators, there is little involvement of western firms and banks in the Siberia-Pacific Pipeline Project. The oil production itself as well as the transport by rail and pipeline are said to be carried out almost exclusively by Russian companies.

TNK-BP (50% owned by British Petroleum) has indicated interest in assisting in the building of the terminal. According to the BBC, the oil company has confirmed sending a delegation on a fact-finding mission to Primorsky Krai in June 2005.<sup>4</sup> TNK-BP spokesman Peter Henshaw told the BBC that the firm is aware of the controversy concerning the terminal location. Several Japanese companies, including Mitsui and Mitsubishi, have also shown interest in the project – specifically in the oil infrastructure at the terminal site.

A subsidiary of Transneft (Transneft Product) has received funding from the European Bank for Development and Reconstruction (EBRD) and Transneft has historically received funding for other pipeline projects from various private western banks. A number of private banks, including Japan's Mizuho Corporate Bank and Barclays Capital from the UK, have shown an interest in providing finance for the Siberia-Pacific Pipeline and the oil infrastructure projects at the terminal site. However, Transneft has announced repeatedly that it will not solicit funding from outside Russia for the pipeline project. In order to become eligible for funding from western or Japanese private and public banks, the environmental impact of the project would have to be significantly reduced. This would require changes in both the pipeline route and terminal location. In its present form the project would not successfully pass the environmental tests that most western and Japanese banks carry out as part of loan assessments for large infrastructure projects.

### **3. Biodiversity of the Amur Bay and Southwest Primorsky Krai**

As many as 100 terrestrial endangered species included in Russia's "Red Book" live in Southwest Primorsky Krai.<sup>5</sup> Up to 48 of these species are endemic; i.e. they occur nowhere else in the world. These endemic endangered species include mammals, amphibians, reptiles, butterflies and birds.

Southwest Primorsky Krai – especially its marine and freshwater wetlands – are of global importance to migrating birds, including white-tailed and Steller's sea eagles, black vultures, many duck species (including the famous mandarin duck), geese, swans, waders and cranes. Birds from northern Russia, Mongolia, China and even North America migrate to Southwest Primorsky Krai.

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<sup>4</sup> BBC News, by Sarah Rainsford, 15 July 2005

<sup>5</sup> "Red Data Book of the Russian Federation (Animals)", 2001

Southwest Primorsky Krai is a unique region. Although similar ecosystems existed in the past in Korea and in neighboring areas in China, not many wild places remain in these regions due to human population pressures and lack of conservation measures.

The rich biodiversity of Southwest Primorsky Krai is reflected in its number of protected areas. No other region in Russia has such a high density of protected areas. The protected



Photograph by Michael Gore  
[www.wildlife-photography.net](http://www.wildlife-photography.net)

*The endangered Steller's Sea Eagle has a wingspan of up to 2.5 meters. It winters in substantial numbers in the Amur Bay and the wintering population would suffer greatly from an oil spill near Perevoznaya.*

areas threatened by the Siberia-Pacific Pipeline Project include two UNESCO Biosphere Reserves: the Kedrovaya Pad reserve (17,890 hectares), which was founded in 1916 and is Russia's oldest reserve; and the Far Eastern Marine Reserve (63,000 hectares), which is the only marine reserve in Russia.

One of the endangered animals that is found today only in Southwest Primorsky Krai is the Amur leopard. With an estimated population of around 35 animals, the Amur leopard is probably the rarest big cat on earth.

The Worldwide Fund for Nature (WWF), non-governmental organizations from the Amur Leopard and Tiger Alliance (ALTA) – including local groups such as Phoenix Fund – and Russian scientists work hard to protect Southwest Primorsky Krai's unique nature.<sup>6</sup> The conservation NGOs and scientists finance and implement a comprehensive program for the conservation of the Amur leopard as well as its habitat and prey species. The conservation projects include anti-poaching teams, forest fire fighting, annual leopard counts using camera traps and snow tracks, habitat analysis with satellite images and GIS systems, compensation payments to farmers when leopards kill livestock, support to protected areas, prey management in hunting leases and education projects. Education efforts include publications, presentations in schools, and an annual "Leopard" festival on the region's most popular beach.

NGOs have spent about 1.5 million USD on these projects since 1998 and the conservation efforts have been quite successful. The number of leopards counted by the Wildlife Conservation Society and Russian conservationists with camera traps in a sample area rose from 10 in 2003, to 13 in 2004 and to 14 in 2005. The total leopard population is estimated at around 35 animals.

<sup>6</sup> ALTA members include Phoenix Fund (Vladivostok), Zoological Society of London, Moscow Zoo, Wildlife Conservation Society (US-based with an office in Vladivostok), International Fund for Animal Welfare (IFAW, Russian office), Tigris Foundation (The Netherlands), ALERTIS (The Netherlands), David Shepherd Wildlife Foundation (UK) and AMUR (UK/Moscow).

<b>Endangered animal species in Southwest Primorsky Krai<sup>7</sup></b> (excluded: sea/river species)			
<b>Class/order</b>	<b>Found in Russia</b>	<b>Found in Southwest Primorsky Krai</b>	<b>Exclusive to Southwest Primorsky Krai</b>
Annelida (worms)	1	1	1
Insects	96	37	28
Amphibians	8	1	1
Reptiles	21	4	3
Birds	125	46	9
Mammals	74	11	6
<b>Total</b>	<b>325 (100%)</b>	<b>100 (31%)</b>	<b>48 (15%)</b>

#### **4. Impacts and risks of a terminal at Perevoznaya**

In this chapter we discuss the impacts and risks of an oil terminal in South Primorsky Krai. We compare the proposed location “Perevoznaya” with various alternative terminal locations. Most of our information concerns marine issues because recent research on the impacts and risks of various terminal options focuses on marine aspects of the problem. No additional research was carried out to assess the impact of the pipeline and terminal on protected areas or on terrestrial endangered species and ecosystems.

Most of the information we present about the pros and cons of various alternative terminal sites is based on a series of recent research reports in the Russian language.<sup>8</sup>

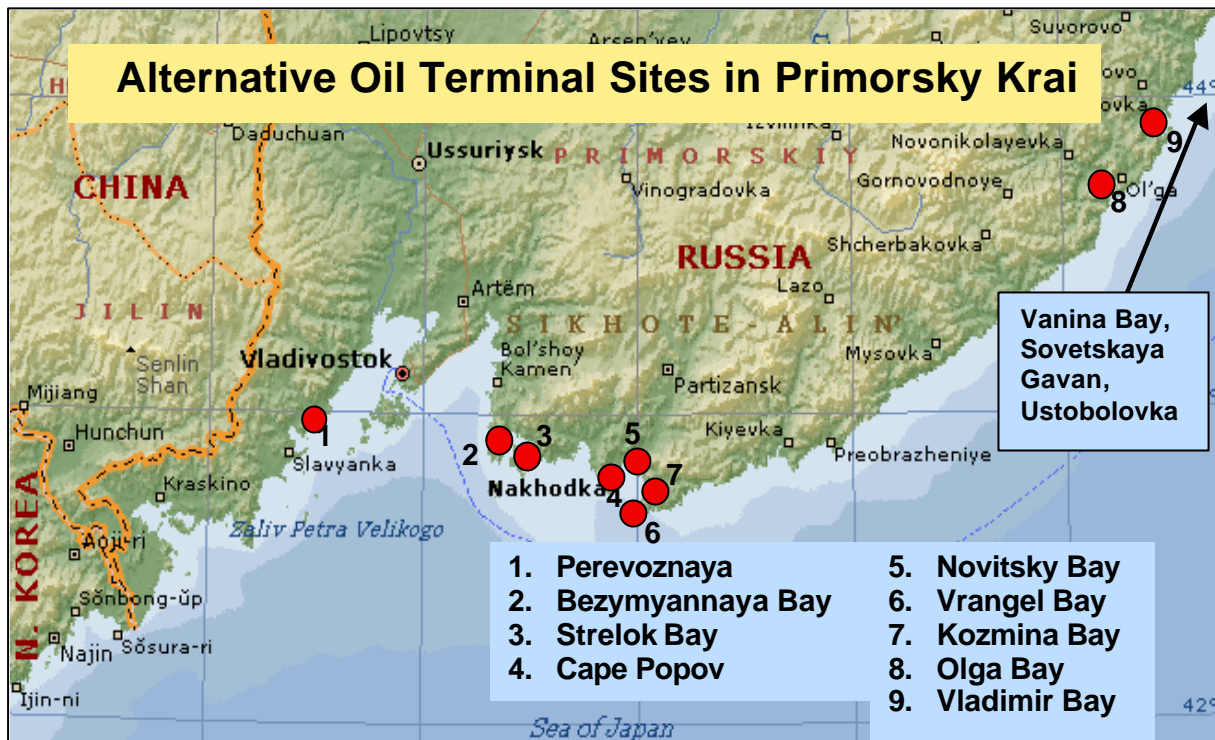
The size and scope of the Siberia-Pacific Pipeline project and oil terminal remain largely unclear. According to official documents, the capacity of the terminal will be 30 million tons. During the project’s second stage, the capacity is to be increased to 50 million tons annually. However, a recent newspaper article mentioned a terminal capacity of only 10 million tons.<sup>9</sup> According to several articles, the second part of the pipeline, from Skovorodino to the terminal, will only be built if the oil production in Siberia substantially increases. The Primorsky Krai administration has advocated the building of an oil refinery plant near the terminal; however, a refinery plant is not an official part of the project. It is uncertain what the exact size and location of the refinery will be, what it will produce and if it will actually be built.

Uncertainties concerning the project details do not affect the discussion in this chapter of the various advantages and disadvantages of alternative terminal sites. A terminal with a capacity of 30 million tons is an enormous industrial complex, four times larger than the largest oil terminal at Nakhodka. The Nakhodka terminal has a capacity of 7.5 million tons per year and is presently the largest oil terminal in Primorsky Krai. Even a terminal with a capacity of only 10 million tons (without a refinery plant) is still a large industrial complex that would include many significant oil storage tanks, shunt areas and other facilities. Export of 30 million tons of crude oil would require 300 medium-sized tankers with a capacity of 100,000 tons each.

<sup>7</sup> Based on "Red Data Book of the Russian Federation (Animals)", 2001

<sup>8</sup> Reports by N. Katchur, I. Arzamastsev, B. Preobrazhensky and other staff members of the Institute of Geography of the Russian Academy of Science (Far Eastern Branch), and a report by S. Moninets of the Sea Protection Institute. All these reports were produced in 2005. For details see the literature overview in Appendix I.

<sup>9</sup> “Chinese President’s Visit Yields Concrete Results”, Newsbase Wednesday, 13 July, 2005



Transneft should build the oil terminal in a suitable location where environmental impacts and risks are minimal.

We will discuss economic and environmental impacts and risks of various terminal sites in this chapter. Health aspects and risks are important, but are not included in this report. More information on various alternative terminal sites can be found in Appendix IV.

Most of the disadvantages of a terminal at Perevoznaya also apply to other possible locations on the Amur Bay. We discuss the following disadvantages of a terminal at Perevoznaya:

- I. High risk that oil spills will occur
- II. Significant negative economic impact of oil spills
- III. Significant environmental impact
- IV. Other practical and economic disadvantages
- V. Political disadvantages

#### 4.1 High risk that oil spills will occur

The natural features of Amur Bay make it a hazardous choice for an oil terminal. It is a large, open bay, too big to provide shelter for tankers. The water at Perevoznaya is relatively shallow, and as a result, the terminal will be built at least two kilometers offshore where the terminal and tankers will be exposed to frequent gales, high waves and ice flows. In addition, there are many islands as well as shallow spots in the Amur Bay to be navigated by tankers traveling to and from the terminal site. These factors combine with frequent periods of fog to increase the likelihood of accidents resulting in large oil spills.

In earlier pipeline plans, Nakhodka was featured as the terminal location. According to a recent study by Sergei Moninets of the Sea Protection Institute, the risks of an accident resulting in an oil spill are 17 times higher if a terminal were to be built at Perevoznaya than if a site near Nakhodka or elsewhere in Primorsky Krai were to be selected.

According to Transneft, the average capacity of tankers visiting the new terminal will be approximately 150,000 tons.<sup>10</sup> Moninets calculated that a major oil spill of between 35,000 and 75,000 tons would occur on average once every 20 years if the average tanker capacity is 150,000 tons and if a total of 50 million tons will be shipped annually from the terminal at Perevoznaya.<sup>11</sup> If the terminal is built at Perevoznaya, all local citizens (except the very old) can expect to witness a major ecological catastrophe in the Amur Bay during their lifetime.

The risk assessment by Moninets is based on international statistics from ITOFF (International Tanker Owners Pollution Federation) of the various causes of oil tanker accidents, such as grounding, collision with another ship and fires or explosions. Moninets subsequently determined how the various risk factors increased or decreased as a result of local conditions at the alternative terminal sites and along the tanker routes to these sites.

Not only scientists consider Perevoznaya to be unsuitable for an oil terminal. Alexander Kirilichev, chairman at Prisco (Primorsk Shipping), the region's largest and Russia's third largest shipping company by tanker capacity, stated, "Nakhodka, Vanino, Vladimir Bay, Gorny cape in the Bezymyany Bay and some other points on the map fit much better because of depth, access by ships. Perevoznaya will cause problems navigating for tankers that can carry 100,000 to 300,000 metric tons."<sup>12</sup>

According to professor B. Preobrazhensky, the terminal site at Perevoznaya is exposed to high winds (Beaufort scale 5 or more) an average of 137 days per year.<sup>13</sup> Alternative sites in more secluded bays near Nakhodka and elsewhere in Southern Primorsky Krai are much less exposed to high winds. According to data collected by a group of scientists from the Sea Protection Institute, scientists from the Institute of Geography of the Russian Academy of Science (Far Eastern Branch), WWF Russia and Phoenix Fund, the terminal site at Perevoznaya is exposed to waves of three meters or more on an average of 20 days per year, whereas waves of that size do not occur at all at several suitable sites elsewhere in Primorsky Krai. According to these data the Amur Bay is covered with solid ice approximately 65 days per year, whereas at alternative sites there is only a narrow band of solid ice along the shore in winter. Overviews of data on alternative terminal sites are included in Appendix IV.

## 4.2 High potential economic damage of oil spills in the Amur Bay

Oil spills have a negative impact in the form of damage and costs. The main impacts include:

1. Ecological damage
2. Economic damage resulting from impacts to natural resources
3. Clean-up costs

Both the potential damage and the clean-up costs would be much higher if Perevoznaya is selected over an alternative site near Nakhodka or elsewhere in Primorsky Krai. We discuss the economic damage and cleanup costs here. The ecological damage is discussed in paragraph 4.3.

Factors contributing to economic damage from spills in the Amur Bay include the following:

1. Primorsky Krai's main marine aquaculture farms are located in the Amur Bay.
2. At least one fish hatchery is located just north of the proposed terminal site at Perevoznaya. The hatchery breeds salmon that are released in local rivers to augment salmon populations that spawn here.

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<sup>10</sup> According to Transneft, 536 tanker transports will be needed when the system reaches its maximum capacity of 80 million tons annually. Corresponding tanker size:  $80,000,000 / 536 = 149,254$  tons.

(See Appendix IV A, indicator 2)

<sup>11</sup> In comparison: the *Exxon Valdez* spill in 1987 resulted in 40,000 tons of oil spilled.

<sup>12</sup> Bloomberg, 23 August 2005

<sup>13</sup> B. Preobrazhensky, 2005

3. The Amur Bay has rich fisheries that form an important economic resource for local communities.
4. The bay serves as spawning grounds for a number of fish species, including herring, which are important to Russia and Japan's open seas fishing fleets.
5. The water in the Amur Bay is the warmest of anywhere in Primorsky Krai. The region's most popular sandy beaches and tourist resorts, visited by tens of thousands of Russian and foreign tourists annually, are located on the Amur Bay. These same beaches and resorts are located on those coasts that are most likely to suffer from possible oil spills in the bay.

A spill in the Amur Bay would spread out over a large area and would, on average, reach and pollute more coastline than a similar spill near alternative an terminal site. Moninets calculated the total length of coastline that will be polluted by oil spills in various locations using models based on data on local currents and winds. According to Moninets, an oil spill near the terminal in the Amur Bay would pollute a total length of 644 km of coastline while a similar spill would pollute only 139 km of coastline if it occurs near a terminal adjacent to Nakhodka. Oil spills near Nakhodka would either remain inside the small bay, where the spill can be more easily contained, or the spill would float directly from the bay into open sea where the spill would be more likely to break up.<sup>14</sup>

Impacts from oil spills at open sea can at least be minimized with assistance of clean-up infrastructure available at Nakhodka. Russia, Japan, China and South Korea have signed agreements on mutual assistance in the case of accidents with tankers resulting in major oil spills. A spill contained near Nakhodka could be removed using response equipment available in the city. If a spill floats to the open sea near Nakhodka, special clean-up ships and other equipment from Sakhalin, Japan, China and South Korea are likely to reach the disaster area in time to assist in clean-up operations before the spill reaches a coast. In contrast, an oil spill in the Amur Bay is likely to reach a coast within 20 hours irrespective of the direction of the wind and currents, making it unlikely that assistance from Sakhalin and neighboring countries could arrive in time to the Amur Bay.<sup>15</sup> Significantly, no oil spill cleanup effort has ever recovered more than 20% of a spill. All spills negatively impact the environment. As a result, it is imperative to choose a terminal location that will maximize oil spill prevention measures. Importantly, locating the terminal in Nakhodka would allow Russian agencies responsible for oil spill prevention and response to centralize oil spill response equipment at Nakhodka, improving current capabilities and maximizing resources and training in one area for spill prevention and response.

Transneft is only legally responsible for oil spills that occur in the immediate vicinity of the terminal (in an area of less than four square kilometers).<sup>16</sup> However, substantial spills usually do not occur at the terminal itself, but en route to and from the terminal.<sup>17</sup>

Cleanup costs not only depend on the total length of the polluted coastline, but also on the type of coast that is polluted. Conditions in the Amur Bay are unfavorable in this respect. Coastal conditions causing removal of oil spills to be difficult and expensive – such as saltwater marshes – are relatively common on the Amur Bay.<sup>18</sup>

The 1989 *Exxon Valdez* oil spill in Alaska, in which 40,000 tons of oil were spilled, leading to an environmental catastrophe from which Alaska's coastlines and marine ecosystems have yet to fully recover, demonstrated the importance of oil spill prevention and response systems. Unfortunately, such a system was instituted in the port of Valdez only after the 1989 *Exxon Valdez* accident. A world-class oil spill prevention and response system should

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<sup>14</sup> S. Moninets, 2005

<sup>15</sup> S. Moninets, 2005

<sup>16</sup> See B. Arzamastsev, 2005

<sup>17</sup> S. Moninets, 2005

<sup>18</sup> S. Moninets, 2005

include a clear, integrated communications network; a well-communicated response plan; oil spill response centers equipped with the best available equipment and materials; and improved access roads to endangered coastline. None of this infrastructure exists near Perevoznaya on the Amur Bay. In contrast, Nakhodka has an existing prevention and response structure that would benefit from added investment by Transneft.

### **4.3 Significant negative environmental impact**

We will now discuss the negative impacts of the pipeline project on protected areas, endangered species and valuable ecosystems. The negative ecological impact of the pipeline and terminal can be divided into two categories:

1. Impact of building the oil infrastructure and normal use
2. Impacts of accidents resulting in oil spills.

The environmental impacts concern both terrestrial impacts and marine impacts.

#### Technical standards and environmental impact

Applying best practices can reduce the environmental impact and risks associated with the pipeline and terminal project. There is, as is to be expected, a trade-off between environmental safety and building costs. The safest techniques are often the most expensive. Transneft claims that its pipelines meet the highest international safety standards; however, the Siberia-Pacific Pipeline will be, measured in current prices, 4-5 times cheaper per kilometer than the Trans-Alaska Pipeline System (TAPS) which was built in 1977 using many of the best available techniques.<sup>19</sup> With steel prices currently at an all-time high, the Siberia-Pacific Pipeline can not meet best practices given its current budget. The Alaska pipeline, for example, was built aboveground; this substantially increases building costs, but also reduces the risk of pipeline ruptures as a result of earthquakes. Unfortunately, the Siberia-Pacific Pipeline will be entirely underground, even in very seismically active areas along the route where earthquakes measuring up to 9.5 on the Richter scale occur.

#### Impact of normal use

Even if best practices are applied and no major accidents take place, the building and day-to-day use of the oil pipeline, terminal and other infrastructure will still have a substantial negative impact on the environment.

Environmental impacts of building and normal use will include the following:

1. Pipeline construction will cause substantial disturbances including prospecting and noisy drilling for soil samples at the terminal site and along the pipeline route. Clear-cutting of forest along the route also causes substantial disturbance.
2. Skilled labor, needed to build and operate the oil facilities, is absent in Southwest Primorsky Krai. Building and operating the terminal will result in an influx of thousands of workers who will need a place to live. The workers will likely want to use the natural surroundings for recreation and hunting, and the increased human population will result in increased poaching activities.
3. Maintenance crews will keep a broad band on both sides of the pipeline route clear of vegetation. As a result, the pipeline increases habitat fragmentation in the area. Although the pipeline will not be a physical obstruction for most animals, many animals, including tigers and certain butterfly species, are hesitant to cross open spaces.
4. The terminal itself, transport of oil by rail and constant use of the pipeline will result in substantial emissions of pollutants into the air, sea and soil. Significant emissions into the air will occur when oil is transferred from train carriages and into oil tankers moored at the terminal. The emissions from train carriages have not been evaluated during the

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<sup>19</sup> Evgeny Shvarts, WWF Russia, 2005 (available at [www.wwf.ru/pub/EShvarts\\_Paris\\_2005\\_mod\\_01.ppt](http://www.wwf.ru/pub/EShvarts_Paris_2005_mod_01.ppt))

project EIR. According to Transneft oil transports by railway to the terminal are not part of the project itself. (Add to Russian version)

Construction and normal day-to-day use of the oil pipeline and infrastructure at the terminal will have a substantial negative impact on the environment, even if the best practices are applied. Unfortunately, major accidents resulting in large oil spills cannot be ruled out even when the best techniques and safety measures are applied.

*Threats increase as a result of selected route*

Equally important to technical aspects of construction are the actual pipeline route and terminal location. In order to minimize impacts and risks, the pipeline route should avoid protected areas, areas with high levels of biodiversity and habitat of endangered species. These factors play a major role in the environmental assessments of large infrastructure projects by public banks, such as the Japanese Bank for International Cooperation (JBIC), the European Bank for Reconstruction and Development (EBRD) and private banks that signed the "Equator Principles."<sup>20</sup> Unfortunately, the Siberia-Pacific Pipeline and proposed terminal site do not meet established international standards.

The pipeline, terminal and related oil infrastructure projects will threaten three protected areas in Southwest Primorsky Krai if the terminal is built at Perevoznaya. The proposed pipeline route runs directly through the Barshovy Federal Wildlife Refuge (*zakaznik*) and along the border of the Kedrovaya Pad Reserve (*zapovednik*). Kedrovaya Pad is especially vulnerable because it is relatively small (at least by Russian standards) and has no buffer zone. Pipeline routes to alternative sites near Nakhodka would not pass protected areas at close range.

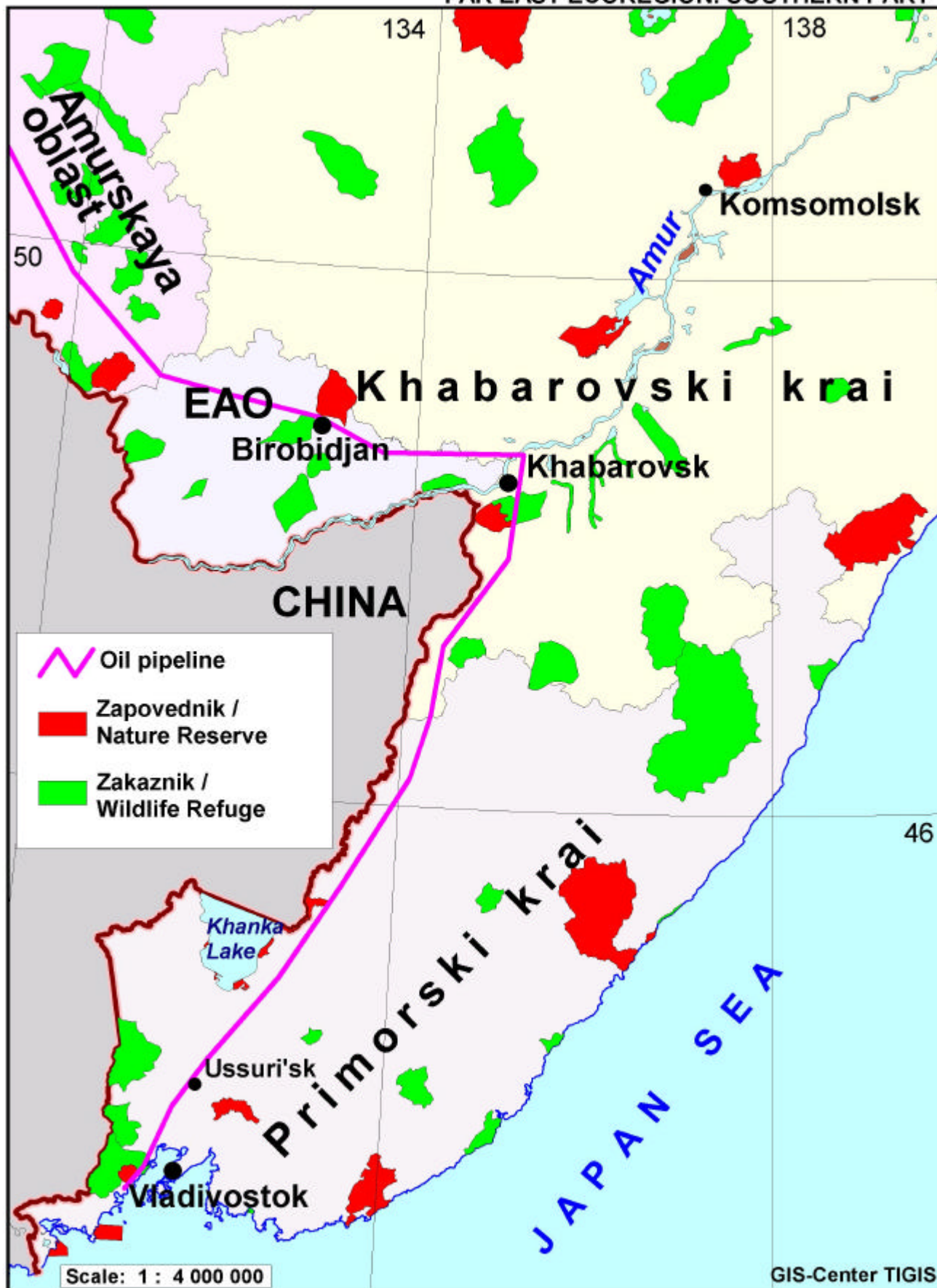


*The presently pristine coastline at Perevoznaya on the Amur Bay*  
(© WWF Russia / Dmitri Kutchma)

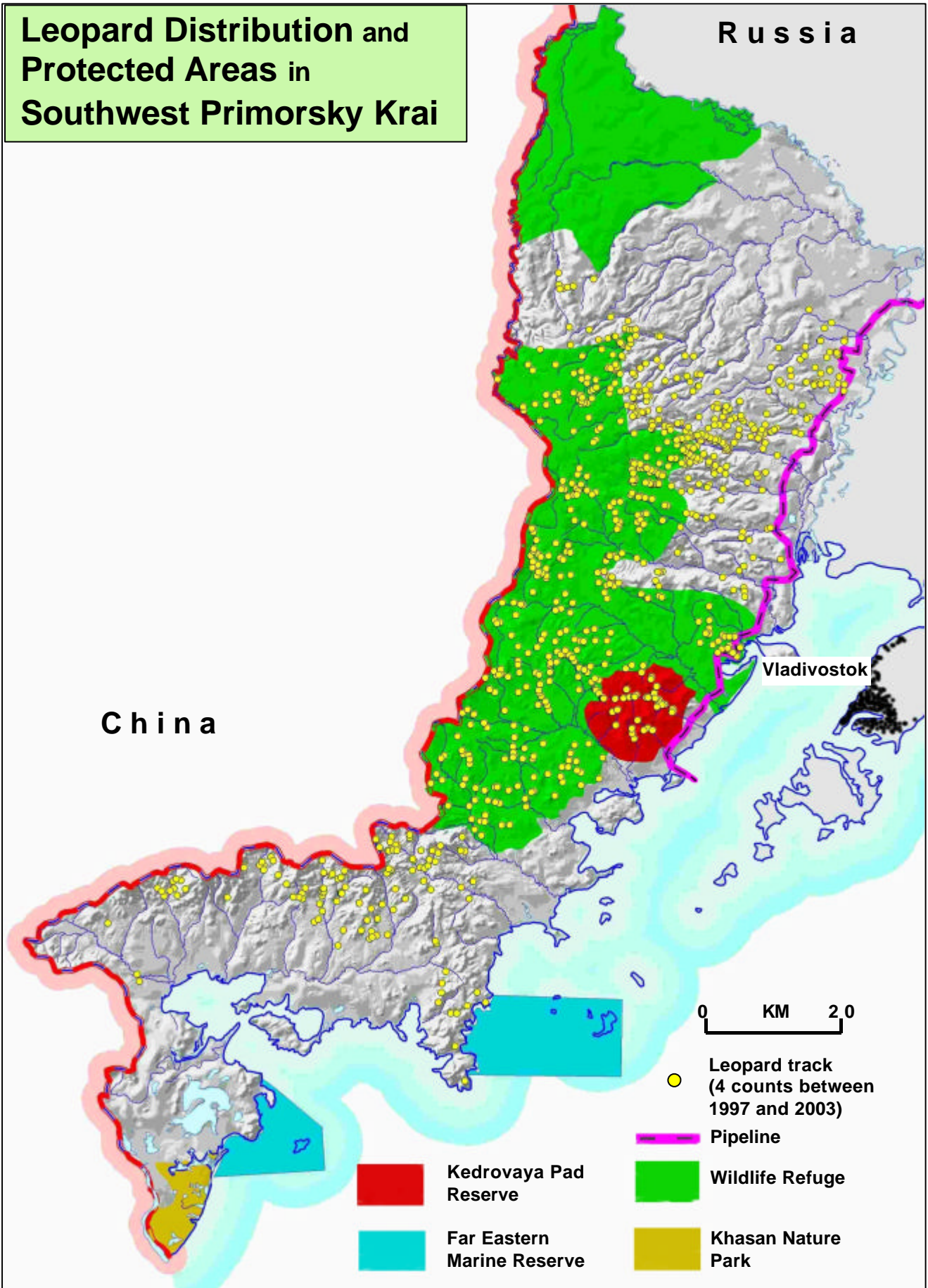
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<sup>20</sup> The Equator Principles are environmental guidelines for project financing by private banks. One of the guidelines is that projects should, as a minimum requirement, meet the environmental and social conditions of World Bank projects. For more information: [www.equator-principles.com](http://www.equator-principles.com)

FAR EAST ECOREGION. SOUTHERN PART



**Leopard Distribution and Protected Areas in Southwest Primorsky Krai**



### The Amur leopard

The Amur leopard is the most striking and famous animal threatened by a terminal at Perevoznaya on the Amur Bay. With approximately 35 animals remaining in the wild, the Amur leopard is probably the world's rarest big cat.<sup>21</sup>



In the 1960s and 1970s the Amur leopard was still found in considerable numbers in northeast China, the Korean peninsula, and the southern part of Primorsky Krai. Due to habitat loss and poaching, the Amur leopard population is now restricted to a small patch of habitat in Southwest Primorsky Krai along the Chinese and Korean borders.

The pipeline will run directly through the Barsovy Wildlife Refuge, home to the Amur Leopard. The neighboring Kedrovaya Pad Reserve contains prime leopard habitat that will be threatened by the proposed pipeline route running only a few hundred meters along its border and by the terminal complex, shunt area and storage tanks that will also be built in its immediate proximity.

The surviving Amur leopard population is isolated, small and thus vulnerable. The leopard population already copes with

human-caused pressures and negative changes in land use. Given the current situation, even slight additional pressure on the population could lead to extinction. Present pressures and threats include the following:

1. Poaching of both leopards and their prey species forms a very serious threat. In 2002 and the first half of 2003, a total of six Amur leopard skins were confiscated by various law enforcement agencies in Primorsky Krai.<sup>22</sup> In January 2004 two dead leopards that had been killed by poachers were found in the forests. An additional skin was confiscated in China in 2002 and a leopard was killed in China not far from the Russian border in 2005.<sup>23</sup> The population contains probably no more than 10-13 breeding females. Population models developed in consultation with WCS scientists suggest that removal of just a few adult female leopards from the population would greatly increase the probability of extinction.<sup>24</sup> As most Russians go to the forest often to collect a variety of forest products (not only berries and nuts, but meat and furs as well) the influx of workers associated with a terminal at Perevoznaya would certainly increase hunting and poaching pressures locally. Models suggest that it would only take 2-3 new active poachers (possibly associated with the influx of people at the terminal) to push the leopard population to extinction.

<sup>21</sup> See leopard counts in the literature list of Appendix I.

<sup>22</sup> Tigris Foundation, Amur Leopard Conservation Update, issues January 2003 and August 2004 (available at [www.tigrisfoundation.nl](http://www.tigrisfoundation.nl))

<sup>23</sup> Unpublished information provided by WCS China.

<sup>24</sup> G. Chapron et al., in prep.



*One of the 30 Amur leopards remaining in the wild. The photo was taken by a camera-trap. A second camera-trap is visible on the tree behind the leopard (photo courtesy WCS and ISUNR).*

2. Another threat is the ongoing reduction of suitable forest habitat as a result of a large number of human-caused fires in southwest Primorsky Krai.<sup>25</sup> Most fires are started in order to stimulate the growth of ferns, which are popular food supplement in China and Russia.<sup>26</sup> The local capacity to fight forest fires has become less effective since the fall of the Soviet Union. These extensive ground fires prevent regeneration of forests, and eventually kill mature trees, converting rich and diverse mixed coniferous-

deciduous forests into open grasslands, wholly unsuitable for leopards. The vast majority of fires are human-caused, and as a result the influx of terminal workers at Perevoznaya will likely increase rates of fires in adjacent lands, leading to more rapid conversion of forests to unsuitable habitat for leopards.

3. Fifteen years ago many deer farms operated in Southwest Primorsky Krai. At these farms sika deer were bred for their antler velvet, which forms a valuable ingredient in Chinese medicine. Many farms held several thousands of deer. Unfortunately, the farms are, one by one, closing down. As a result, leopards are losing an important food source. leopard tracks are relatively often encountered in the proximity of those farms that are still operating during leopard counts based on snow tracks, but no or very few leopard tracks are found after a farm is closed down.

Without additional research it is impossible to predict the extent to which the pipeline and oil terminal will impact the Amur leopard's survival chances. There is, however, no doubt that a terminal in southwest Primorsky Krai would increase the already significant negative human impact on the leopard population and could very well lead to its extinction.

#### *Environmental impact: conclusions*

*We conclude that the negative ecological impact of a terminal in Southwest Primorsky Krai would be substantial. The exact size of the impact on local protected areas, endangered species and terrestrial and marine ecosystems is difficult to determine. However, terminal sites near Nakhodka and elsewhere in Primorsky Krai are preferable from an ecological perspective; a pipeline routed to one of these alternative sites would not pose a serious threat to protected areas and to habitat important to endangered species.*

<sup>25</sup> "An analysis of fires and their impact on leopards in Southwest Primorye", by Miquelle, D. G., A. Murzin, and M. Hötte, 2004 (report available at [www.tigrisfoundation.nl](http://www.tigrisfoundation.nl))

<sup>26</sup> "Social survey in the leopard range", Tigris Foundation, 2004 (report available at [www.tigrisfoundation.nl](http://www.tigrisfoundation.nl))

#### 4.4 Other economic and practical disadvantages

Perevoznaya is currently a pristine coast. If a terminal is built at Perevoznaya, the necessary infrastructure will be developed from scratch. Clearly, it would be much more efficient to use the existing infrastructure at Nakhodka.

There is, for example, presently no oil spill response infrastructure in the Amur Bay. If the terminal were to be built near Nakhodka, there would be additional investments in both local safety measures and the existing oil spill response infrastructure. As a result, the risks involved in tanker transport would decrease, whereas this risk would increase substantially if the terminal were built at Perevoznaya.

Building and operating the oil infrastructure requires skilled labor. Such labor is presently not available in Southwest Primorsky Krai. It will be difficult to find skilled laborers willing to move to Southwest Primorsky Krai, especially because most of these laborers are accustomed to living in cities. The importation of workers will require additional salary payments, thus increasing the total cost of the project.

A terminal at Perevoznaya would compete with existing terminals at Nakhodka if the Perevoznaya terminal were also to handle the types of fuel that are presently transferred to tankers at the Nakhodka terminals. Such competition could have serious negative implications for Nakhodka's economy.

Much of the land around the terminal location is not firm or stable and as a result is not suitable for building heavy installations such as large oil storage tanks.<sup>27</sup> At several alternative sites, installations can be built more safely on solid rock formations.

The Amur Bay at Perevoznaya is shallow; as a result, the terminal will be built at least two kilometers offshore. Even at this distance from shore, extensive dredging will be needed to allow tankers with a capacity of 300,000 tons to moor at the pier. According to one study, a total volume of 200,000 tons will need to be removed from the seafloor in order to create a sufficient depth for the terminal.<sup>28</sup> The dredging operations must be repeated regularly to keep the terminal accessible. This dredging will substantially increase the total costs of building and operating a terminal at Perevoznaya.

As a result of winter ice conditions in the Amur Bay, double-hull 300,000-ton tankers will not be able to dock at Perevoznaya during much of January, February and March (unless they are fitted with specially strengthened hulls). Tankers of this class can access suitable terminal sites elsewhere in Primorsky Krai year-round.

Transneft argues that a pipeline to Nakhodka would be approximately 50 kilometers longer than a pipeline to Perevoznaya, thus increasing project costs. Given all of the abovementioned economic disadvantages, the overall length of the pipeline and the environmental gains, the cost of 50 extra kilometers cannot outweigh the benefits of moving the terminal from the Amur Bay. Three Russian ministers (the minister of Natural Resources, the minister of Transport and the minister of Economic Development) also spoke out against the plan to build the terminal at Perevoznaya. They stated that Nakhodka is a more suitable terminal location because it is a developed industrial area.

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<sup>27</sup> B. Preobrazhensky, 2005

<sup>28</sup> B. Preobrazhensky, 2005

## **4.5 Political disadvantages**

Oil spills in the Amur Bay could reach the waters and coasts of North Korea and lead to a political conflict with this unpredictable country.

The northeast part of China is land-locked; it is cut off from the sea by Russia and North Korea. China desires to develop an international harbor in the three-country border area at the mouth of the Tumen River. Russia, however, has opposed the idea, pointing to the negative ecological impact of such a harbor. This fundamental argument would be weakened if Russia were to build a large oil terminal in the Amur Bay not far from the mouth of the Tumen River.

An international harbor at Tumen would stimulate China's economic growth, which is perceived as a threat by most Russian politicians. The developed Tumen harbor would negatively impact harbor and transport activities in Primorsky Krai. Many road and rail transports presently running from Siberia via Khabarovsk to harbors in Primorsky Krai would make a shortcut through China instead if it became possible to ship goods from an international harbor on the Tumen River.

## **5. Legal and democratic aspects**

Russian law requires official assessment of the impact of large infrastructure projects on the environment. The Environmental Impact Review (EIR) of a project is meant to result in the selection of the best possible project variant. Perevoznaya is not a suitable terminal site. Thus far, the impact review process for the project has resulted in a number of violations of Russian laws and civil rights.

Complaints concerning civil rights and Russian laws include:

- Essential project information, including information about possible alternatives for the oil terminal location, was not made available to the public. Transneft has stated that the proposed terminal location was selected after comparing many possible locations, but reports showing why Perevoznaya on the Amur Bay was selected as the best location have yet to be released.
- No assessments have been provided of the impact of the pipeline and terminal in Southwest Primorsky Krai on the Amur leopard; on the area's unique marine and terrestrial ecosystems; and on the aquaculture, fishery and tourism industries of the region.
- About 200 citizens attended a public hearing in Vladivostok in 2004, and 20 experts (including reserve directors, scientists and conservationists) made five-minute presentations on alternative terminal locations. While the arguments varied, the conclusion of each presentation was the same: do not build the terminal on the Amur Bay. Unfortunately, Transneft and the Russian authorities decided to ignore public opinion.
- Transneft distributed an overview with data on alternative terminal sites that varies from the data produced by experts from the Russian Academy of Science and the Sea Protection Institute (see Appendix IV). As a result of the disparate data, Perevoznaya appears to be the best option for an oil terminal. Transneft was allowed to address a Primorsky Krai Duma session on the subject and presented this view. Conservationists and scientists opposing the Perevoznaya option were not allowed to speak at the Duma session. Transneft provided the same data for use in the official EIR that resulted in approval for the project. According to Moninets and Preobrazhnisky, many of the data on alternative terminal locations that was distributed by Transneft are incorrect. Alleged incorrect data include essential indicators for the suitability of terminal locations, such as

the depth of the sea at the location, the number of days per year with strong winds, the number of days with high waves and ice conditions in winter.

- Transneft or Transneft subcontractors violated the Federal Law “On Environmental Impact Assessment” by starting preparation activities along a route near Lake Baikal that was not approved by the Government. Building activities at the terminal site are also illegal. Initial orders from local authorities to stop the work at Baikal were ignored.
- Building a pipeline through a World Natural Heritage Site, which Baikal has been since 1996, is a violation of the International Convention for Protection of Cultural and Natural Heritage.



*Illegal terminal building preparations at Perevoznaya (Photo courtesy Phoenix Fund)*

Russian NGOs have the right to perform public EIRs. The results of these public EIRs should be taken into account in the official EIR. The only “independent” EIR of the Siberia-Pacific Pipeline Project was conducted by the NGO “Public Environment.” Curiously, Public Environment is registered on the same street as Transneft; their offices are only a few blocks apart. During a meeting with Greenpeace, WWF and other NGOs, Transneft vice president Vladimir Kalinin accidentally said “our EIR” when referring to Public Environment’s review. Greenpeace has this “slip of the tongue” on tape. The results of the Public Environment EIR were favorable for the pipeline project.

A Khabarovsk court decided on 13 May 2005 to investigate complaints by citizens and local NGOs, including the environmental NGO Ecodal, about irregularities in the pipeline project’s EIR. **On 1 July 2005, a Khabarovsk court ruled the project EIR invalid in light of the serious nature of these irregularities.** As a result of this ruling, the decree of Prime Minister Fradkov on 31 December 2004, to build the Siberia-Pacific Pipeline from Taishet to Perevoznaya lost its legal grounds. Transneft and Rostekhnadzor (the government organization responsible for the project’s EIR) have appealed the Khabarovsk court ruling.

In August 2005, a second round of public hearings (17 in total) was held along the pipeline route. According to local conservation NGOs, these hearings resulted in a new series of irregularities and violations of Russian laws, including the following:

1. The vast majority of the hearing participants in Vladivostok oppose the plan to build at Perevoznaya. In Khasan, the district where Transneft wants to build the terminal, not a single participant speaks out in favor of the plan. However, the opposition to a terminal at Perevoznaya is not included in the protocol text that summarizes the hearing results. Instead, the protocol states that the hearing participants approve of the project. Most hearing participants signed a statement opposing a terminal at Perevoznaya, which was included as part of the 108-page appendices to the protocol.
2. At the end of the hearings in Vladivostok and in Khasan, the chairmen read out a protocol text that was supposed to summarize the hearing results. The majority of the hearing participants did not agree with the text and proposed an alternative text, requesting that the two texts are put to a vote. The chairmen at the hearings in Vladivostok and in Khasan refused to grant this request. However, at hearings where the majority of the participants did not object to the project and the proposed protocol (such as at a hearing in Irkutsk) the proposed protocol was put to a vote.

3. Citizens in Vladivostok and at other hearing locations were offered an opportunity to write their opinion about the project in a journal that was made available for this purpose in the administration building of the local municipality. Most entries in the journal in Vladivostok opposed the plan to build the terminal at Perevoznaya. However, a few days before the period for entries closed, staff members of Phoenix Fund reported that the journal had been replaced with a new one. This new journal contains mostly entries in support of Perevoznaya. It is not mentioned anywhere in the new journal that it is a continuation of the first journal. The Phoenix Fund staff members requested to see the first journal, but this request was not granted.
4. The public has not been allowed make copies of the project materials that were made available in Vladivostok during a certain period before and after the hearing. Phoenix Fund staff members have not even been allowed to write down names of citizens who wrote entries in the journals (see previous point).

Phoenix Fund sent complaints to the government organization responsible for the EIR process and will file a number of lawsuits related to the previous allegations.

Russian President Vladimir Putin has criticized Russian nongovernmental organizations for creating obstacles for projects essential for Russia’s economic development.<sup>29</sup> He suggested that the NGOs are financed by “competitors.” President Putin used the Siberia-Pacific Pipeline Project as his main example to illustrate his point.

President Putin’s criticism is not justified. Russian conservation NGOs and scientists are calling for a changed route for the pipeline and terminal, but are *not* calling for the overall cancellation of the project. Conservationists and scientists oppose the proposed terminal site because it is the worst possible option from environmental, economic and social perspectives. Efforts of NGOs and scientists to have the terminal built at a more suitable spot are in Russia’s interest.

One argument for Perevoznaya is that at this advanced stage of project preparations, switching to a different terminal site could cause a serious delay in the implementation of the project. However, NGOs and scientists pointed out Perevoznaya’s weaknesses as soon as the plan to build at this location became public. A delay would have been avoided if Transneft and the authorities responsible for the official EIR had followed the law and had taken the negative economic and environmental impacts of a terminal at Perevoznaya into consideration. NGOs and scientists cannot be blamed for a possible delay that is in fact the result of the actions of Transneft and Russian authorities.



*Protestors meeting a delegation of Japanese businessmen and Primorsky Krai officials at Perevoznaya (photo courtesy Phoenix Fund)*

The accusation that competitors have paid scientists and NGOs to oppose the proposed terminal site is groundless. The only parties that could potentially gain from the campaign for

<sup>29</sup> “Russian leader blasts environmentalists for holding back development”, AFP, Moscow, 20 July  
 “Ecologists Fret Over Presidential Critique,” by O. Yablokova and G. Walters, Moscow Times, 22 July 2005

a different oil terminal site are the owners of the Nakhodka oil terminals. The owners of the Nakhodka terminals have not provided support in any form for those concerned that Perevoznaya is a poor terminal location.

## **6. Conclusions and recommendations**

The majority of conservationists and scientists, including the authors of this report, strongly oppose the proposed pipeline route and terminal location. We are calling for changes in the route and terminal location – *not* for cancellation of the entire project. The terminal issue is *not* a conflict between environmental and economic interests. In fact, alternative terminal locations, including several sites near Nakhodka, are not only superior from an environmental perspective, but also from social and economic perspectives.

Analysis shows that the proposed terminal location at Perevoznaya on the Amur Bay is the worst possible location for a terminal. Strong winds and fog are relatively common in the Amur Bay and the bay is large, open and shallow. As a result, the terminal must be built at least two kilometers offshore where tankers will be exposed to high waves and frequent storms. Tankers will need to navigate through a string of small islands to reach the terminal.

As a result of these unfavorable conditions, the risk of accidents resulting in oil spills is 17 times higher than if an alternative site near Nakhodka or elsewhere in south Primorsky Krai is selected. Scientists estimate that a major oil spill of between 35,000 and 75,000 tons will occur on average once every 20 years if Perevoznaya is selected. Most local citizens can expect to witness a major ecological catastrophe in the Amur Bay during their lifetime.

Moreover, a spill in the Amur Bay would do much more damage than at other sites. Conditions in the Amur Bay make it very difficult to control spills, and spills are likely to spread over a very large area and to pollute long stretches of coastline.

Perevoznaya is located in Southwest Primorsky Krai, one of Russia's foremost biodiversity hotspots. Fifteen percent of Russia's endangered species can be found only in this part of Russia. One of the endangered animals found only in Southwest Primorsky Krai is the Amur leopard, probably the world's rarest big cat with a population of about 35 individuals. The pipeline would run through a wildlife refuge and the proposed terminal site is located very close to Kedrovaya Pad, a UNESCO Biosphere Reserve and important leopard habitat. Vladivostok, the region's largest city, is opposite the terminal site on the Amur Bay. The most popular tourist resorts and sandy beaches in the Russian Far East, visited by ten thousands of tourists annually, and Russia's only marine reserve are also located nearby on the same bay.

Perevoznaya is presently a pristine coastline; the proposed oil port infrastructure would be developed from scratch. It would be much more efficient to build on already existing infrastructure near Nakhodka, Primorsky Krai's largest port, where oil terminals already exist. This investment would result in improved and centralized oil spill response capacity in Nakhodka.

The official Environmental Impact Review (EIR) of the pipeline project should have resulted in the selection of the best project variant, including the most favorable terminal site. However, the proposed site at Perevoznaya is clearly not suitable. On 1 July 2005, a court in Khabarovsk, Russia, ruled that the official project EIR – resulting in a “green light” for the project – is invalid as a result of specific violations. These violations include withholding of essential project information, failure to seriously investigate alternative terminal sites, providing incorrect information to the public, using incorrect information in the environmental assessment (including disparate data on the suitability of the proposed terminal site – see Appendix IV) and obstruction of independent NGO participation in the EIR process.

We cannot explain why Transneft and the Primorsky Krai administration favor a terminal at Perevoznaya on the Amur Bay. However, it is clear that building a terminal at the proposed site is not in Russia's best interest and would form a serious threat to the economic development and ecological safety of the region.

***We therefore call upon:***

- ***The President of the Russian Federation, Vladimir Putin, the responsible Russian authorities and Transneft to change the route of the Siberia-Pacific Pipeline and to select a terminal site not located on the Amur Bay.***
- ***Russian, Japanese and western companies and banks to refrain from participation in the pipeline project and oil infrastructure projects at the terminal site until a terminal site has been selected that is not located on the Amur Bay.***

## Appendix I. Literature

1. "Alternative oil terminal sites", Pacific Institute of Geography, Russian Far Eastern Branch of the Russian Academy of Science. Author: Dr. of Ecology, Prof. Boris V. Preobrazhensky, (language: Russian), Vladivostok, 2005.
2. Amur Leopard Conservation Updates, Michiel Hötte, Tigris Foundation, (language: English), Amsterdam, January 2003 and August 2004 (both reports are available at [www.tigrisfoundation.nl](http://www.tigrisfoundation.nl))
3. "An analysis of fires and their impact on leopards in Southwest Primorye", Dale. G. Miquelle, Andrei Murzin, and Michiel Hötte, (language: English), Vladivostok, 2004 (report can be downloaded at [www.tigrisfoundation.nl](http://www.tigrisfoundation.nl) )
4. "Comparison of the risks of oil spills in connection with an oil terminal in South Primorye", Marine State University "Admiral G.I. Nevelskoi", institute for the Protection of Sea. Author Sergei Yurivitch Moninets (director of the institute), (language: Russian), Vladivostok, 2005.
5. "Evaluation of alternative oil terminal sites in South Primorye", Pacific Institute of Geography, Russian Far Eastern Branch of the Russian Academy of Science. Author A. N Katchur (language: Russian), Vladivostok, 2005.
6. "Evaluation of the environmental impact of an oil transfer terminal at Perevoznaya Bay", Pacific Institute of Geography, Russian Far Eastern Branch of the Russian Academy of Science, (language: Russian), Vladivostok, 2005.
7. "Evaluation of the environmental impact of an oil transfer terminal at Perevoznaya Bay based on the experience with the existing terminal near Primorsk in the Leningrad Province", Pacific Institute of Geography, Russian Far Eastern Branch of the Russian Academy of Science. Author Ivan Segeivitch Arzamastsev, (language: Russian), Vladivostok, 2005.
8. "Environmental Problems of Development and Increasing Environmental Responsibility", presentation to the VII International Congress "Oil and Gas complex: Strategies of Development", by Evgeny Shvarts, WWF Russia, (language: English), Paris, France, 30 June – 2 July, 2005 (available at [www.wwf.ru/pub/EShvarts\\_Paris\\_2005\\_mod\\_01.ppt](http://www.wwf.ru/pub/EShvarts_Paris_2005_mod_01.ppt))
9. Leopard counts: Frontal Count 2000 and 2003, Dimitri Pikunov et al., Simultaneous Count 2000, Vladimir Aramilev et al., Camera-trap count 2003 and 2004, Kostiria et al.
10. "Social survey in the leopard range", Michiel Hötte, Tigris Foundation, (language: English), Vladivostok, 2004 (report available at [www.tigrisfoundation.nl](http://www.tigrisfoundation.nl))
11. "The Russian Far East", Josh Newell, (language: English), New York, 2005.
12. "Red Data Book of the Russian Federation (Animals)", 2001, published by Astrel and AST

## Appendix II. English language articles

Please find below a list of English newspaper articles about the Siberia-Pacific Pipeline and related topics. This list is not exhaustive. A significant number of articles on the subject have been published in several languages (besides Russian), including German, French and Dutch.

- 21 January, The New York Times, "Disputes at Every Turn of Siberia Pipeline", by James Brooke
- 2 February 2002, Prime Tass, "Official says first oil exports via Taishet-Nakhodka for China"
- 4 February 2005, CIS Oil & Gas Report, "Preparations of Business Plan of Taishet-Nakhodka Pipeline to be seriously Accelerated"
- 23 February 2005, AFP, "Russia to start building major Far East oil pipeline in summer"
- 25 February 2005, AFP, "Russia not to alter plans for oil terminal in Far East despite ecologist concerns"
- 16 March 2005, CIS Oil & Gas Report, "Presidential Administration Determined the End Point of the Eastern Oil Pipeline"
- 22 March 2005, Russia RZD, "Political Maneuvers around the Eastern Pipeline", by Igor Tomberg
- 15 March 2005, Kommersant Daily, "Transneft Asked to Change Route and run the pipeline to Nakhodka"
- 22 March 2005, The Associated Press/Moscow, "Activists urge Japan on oil pipeline"
- date unknown, Korea Times, "China, Japan Both Eye Russian Oil", by Frank Ching
- 7 April 2005, VladNews (from Zolotoi Rog Business Weekly), "Japanese delegation to arrive for pipeline talks"
- 13 April 2005, ITAR-TASS, "Primorye Citizens Protest Construction Of Sea Oil Terminal", by Marina Shatilova
- 15 April 2005, Reuters, "Lenders Keen To Fund Russian Pacific Pipeline Plan", by Dmitry Zhdannikov
- 15 April 2005, AM EDT, "Barclays Syndicate Lends Transneft \$250 Million for Pipeline"
- 21 April 2004, Prime Tass, "Russia wants East Siberia geological exploration begin soon"
- 21 April 2004, Moscow Times, REUTERS, Bloomberg, "Japanese Told China to Get Pipeline First"
- 22 April 2005, PrimeTass, "Minister: Russia to decide on stages of Far East oil pipe soon"
- 22 April 2005, PrimeTass, "Japan, Russia to continue talks on Siberian oil pipeline"
- 22 April 2005, PrimeTass, "Khristenko says \$6 bln needed for 1st stage of Siberia oil pipe"
- 25 April 2005, PrimeTass, "Khristenko says \$6 bln needed for 1st stage of Siberia oil pipe"
- 27 April 2005, PrimeTass, "Russia's Gref: Against limits on privately financed oil pipes"
- 2 May 2005, PrimeTass, "PRESS: Transneft can secure \$7-\$8 bln to finance Nakhodka pipe"
- 2 May 2005, CIS Oil & Gas Report, "Minister of Industry and Energy Viktor Khristenko signed an order on the construction of the first part of the oil pipeline from Eastern Siberia to Pacific Ocean"
- 3 May 2005, Moscow Times/Bloomberg, "Tokyo Casts Pipeline Financing in Doubt"
- 5 May 2005, The Economist, "King Solomon's Pipe, the benefits of keeping Japan and China guessing", by Andrew Miller

- 6 May 2005, RusBizList, "Russian Oil & Gas: Energizing the Summit & Raising Risk", by Chris Weafer
  - 10 May 2005, BBC, "Chinese, Russian presidents agree to further develop bilateral ties"
  - 12 May 2005, RBC, "Putin's visit to Japan to be scheduled soon"
  - 28 May 2005, Financial Times, "How oil pipeline carries an environmental threat", letter to the editor by Sarah Christie and Michiel Hötte of the Zoological Society of London
  - 31 May 2005, Moscow Times, "Pumping Peril to the Pacific", by Roman Vazhenkov
  - 2 June 2005, Guardian, "Oil Pipeline will be catastrophe; naturalists are outraged at a threat to the last wild haven of the world's rarest big-cat", by Tom Parfitt
  - 16 June 2005, Moscow Times, "Transneft Accused of Illegal Logging", by Valerya Korchagina
  - 17 June 2005, CIS Oil & Gas Report, "Construction of Eastern Oil Pipeline may be suspended"
  - 22 June 2005, The Times, "Longest pipeline is halted to save the lake and leopard", by Jeremy Page
  - 22 June 2005, PrimeTass, "Transneft CEO: No environmental problems with Far East pipe"
  - 5 July 2005, Bloomberg, "Transneft Loses Environmental Approval for Pipeline", by Torrey Clark
  - 6 July 2005, CIS Oil & Gas Report, "Construction of the Eastern Oil Pipeline Suspended"
  - 13 July 2005, Newsbase, "Chinese President's Visit Yields Concrete Results", by Jennifer
  - 15 July 2005, BBC News, "Pipeline risk to Siberia wildlife", by Sarah Rainsford
  - 19 July 2005, The Independent, "Pipeline threatens world's rarest cat with extinction", by Andrew Osborn
  - 20 July 2005, AFP, "Russian leader blasts environmentalists for holding back development"
  - 21 July 2005, Vladivostok News, "Primorye's Governor puts ecology first"
  - 22 July 2005, Moscow Times, "Ecologists Fret Over Presidential Critique", by Oksana Yablokova and Greg Walters
  - 27 July 2005, Prime Tass, "Russia's VEB has no plans to finance Far East pipe project"
  - 28 July 2005, Vladivostok News, "American environmentalists oppose Pacific pipeline route"
  - 22 August 2005, Bloomberg, "Russia's Primorsk Says New Port for Pacific Pipeline Isn't Safe", by Eduard Gismatullin
  - 23 August 2005, Bloomberg, "Port Safety in Doubt"
-

## Appendix III. Main events in chronological order

<b>Main events</b>  <b>Siberia-Pacific Pipeline Project</b>  <b>and</b>  <b>campaign against a terminal at Perevoznaya</b>	
Date / period	Event
2001	A plan emerges for a pipeline to be built from central Siberia to China. The oil company Yukos promotes the plan. Yukos proposes a route from Angarsk (Irkutsk Region) to Daqing in China.
2002	Transneft proposes to build the pipeline not to China, but to Nakhodka on the Sea of Japan. From here, the oil can be exported to countries around the Pacific Rim, including China, Korea, Japan and the US. The advantage of this plan is that Russia would not depend on a single buyer (China).
5 April 2002	Primorsky Krai governor Darkin and Transneft sign an agreement to build the terminal of the pipeline at Perevoznaya on the Amur Bay opposite Vladivostok. This agreement was signed before the official Environmental Impact Review (EIR) of the project was completed.
2003	The pipeline decision is a compromise: the pipeline is to be built to Nakhodka on the coast of the Sea of Japan, but it will also have a branch to China. The pipeline will run north of Lake Baikal instead of south.
6 February 2003	Darkin states in an interview published in the local newspaper "Vladivostok" that the terminal will probably not be built in Nakhodka (east of Vladivostok), but near Perevoznaya (west of Vladivostok, on the opposite side of the Amur Bay). Even when the plan to build at Perevoznaya becomes official, Transneft and Moscow-based authorities continue to use the name "Taishet-Nakhodka pipeline." The media often mistakenly mention that Perevoznaya is near Nakhodka (Nakhodka-Perevoznaya is in fact a five-hour drive).
13 July 2004	First Public hearing in Vladivostok. Twenty participants give a five-minute presentation to explain why the terminal should not be built at Perevoznaya; participants included scientists, conservationists, protected area directors, experts on the risks of tanker movements and oil spills and others. Not one of the 200 participants at the hearing speaks out in favor of a terminal at Perevoznaya. However, officials do not include this opposition to a terminal at Perevoznaya in the official, published minutes of the hearing.
2003-2004	NGOs (including Green Cross and Greenpeace) attempt to register a "public" EIR, but they are denied their legal right to perform an EIR.
2 December 2004	The results of the official EIR are made public. They are positive for the project. The results of only one public EIR is included in the official Review. This public EIR is performed by an NGO named "Public Environment." The office for this little-known organization is on the same street as Transneft. Public Environment's conclusions are favorable for the project.
31 Dec 2004	Prime Minister Fradkov signs a decree concerning building of a pipeline from Taishet to Pervoznaya.

10 March 2005	Greenpeace Russia, WWF Russia, Phoenix Fund, IFAW Russia and WCS write to the UNESCO Man and Biosphere (MAB) Program in Paris with a request to urge the Russian Government not to build the terminal on the Amur Bay. This results in an official position of UNESCO MAB against building a terminal at Perevoznaya.
14 March 2005	39 Russian and international organizations send a letter to Russian President Putin and to Japanese Prime Minister Koizumi demanding that the pipeline route be moved further from Baikal and the oil terminal not be built at Perevoznaya. No answer to the letter is received.
16 March 2005	Director of the Presidential Administration, Dmitry Medvedev, sends a letter to Prime Minister Fradkov with a request to consider construction of the pipeline to the port of Nakhodka instead of to Perevoznaya. Medvedev's letter is in response to an appeal by the Director of the Russian Academy of Sciences, Yury Osipov. According to the Osipov, the proposed terminal site at Perevoznaya has a high ecological risk.
25 February 2005	The Khasan district Duma accepts an official request from local citizens for a referendum about the plan to build the terminal at Perevoznaya in the Khasan District.
15 March 2005	The Primorsky Krai Prosecutor's office speaks against the plan to hold a referendum in Khasan on the grounds that it concerns a federal and not local project. The Khasan Duma cancels the referendum.
early April 2005	Primorsky Krai's Prosecutor's Office stops illegal building preparations at sea and on land near the proposed terminal site at Perevoznaya.
12 April 2005	The International Union for the Conservation of Nature (IUCN) sends a letter to president Putin expressing concern about the impact of the terminal on the highly endangered Amur leopard.
12 April 2005	A delegation of Japanese companies interested in investing in the oil infrastructure project visit the proposed terminal site at Perevoznaya together with officials from the Primorsky Krai administration. The delegation is met by a group of protestors consisting of conservationists, protected area staff and local citizens. The Russian officials prevent communication between the protest group and the Japanese delegation.
20 April 2005	Russia's Industry and Energy minister, Viktor Khristenko, leaves for Japan for talks on the Siberia-Pacific Pipeline Project. Primorsky Krai Governor Darkin is a member of his delegation.
26 April 2005	Russia's Industry and Energy minister, Viktor Khristenko, announces that the pipeline will be built in two stages. During the first stage, the first half of the pipeline will be built from Taishet in Siberia to Skovorodino in the Amur Region, close to the Chinese border. The terminal at Perevoznaya will also be built during the first stage of the project. The estimated cost of the first stage is 6.5 billion US dollars. Khristenko's decree signed on 26 April states that the first stage is to be completed in 2008.
end of April 2005	Japanese officials repeat earlier statements that Japan will only make funds available for the Siberia-Pacific Pipeline Project pipeline construction starts simultaneously at both ends (i.e. the Sea of Japan and Siberia). Japan does not want to risk paying for a pipeline that will primarily provide oil to China.
11 May 2005	Transneft invites a delegation of Primorsky Krai Duma members on a trip to an oil terminal on the Baltic coast. Only those in favor of a terminal at Perevoznaya are invited.
19 May 2005	Session of the local Primorsky Krai Duma to discuss the pipeline project. NGOs and scientists opposing a terminal Perevoznaya are not allowed to speak, but Transneft is allowed to address the Duma. Data on alternative terminal sites differing from data released by scientists from the Sea Protection Institute is distributed among the legislators. (See terminal data in Appendix IV)

1 June 2005	WWF, Phoenix Fund and the local branch of the Academy of Science organize a press conference in Vladivostok to present the results of several studies into the environmental impact and risks of a terminal in South Primorsky Krai. The studies compare the Perevoznaya option with alternative sites. The scientists of the Academy of Science and the Sea Protection Institute state that a terminal at Perevoznaya is undesirable because it would increase the risks of oil spills as well as the damage that spills will do. They conclude that there are many more suitable alternative sites.
6-7 June 2005	Greenpeace and Rosprirodnadzor investigate illegal pipeline building preparations at a route that passes less than one kilometer from Lake Baikal.
15 June 2005	Greenpeace and Rosprirodnadzor organize a press conference where illegal building preparations near Lake Baikal are exposed.
1 July 2005	The NGO Ecodal and citizens file a complaint at a court in Khabarovsk concerning violations of Russian laws during the official EIR of the project. The court rules in favor of the plaintiffs, and the EIR (which gave a positive result and allowed building the pipe from Taishet to Perevoznaya) is ruled invalid. As a result, the 31 December 2004 decision to build the pipeline from Taishet to Perevoznaya loses its legal grounds.
15 July 2005	BBC (channel 4 and BBC World) shows a news feature on the terminal issue.
19 July 2005	Governor Darkin meets with scientists opposing a terminal at Perevoznaya. He says he was unaware that alternatives superior to Perevoznaya exist. He blames Transneft for not providing information on the risks of a terminal at Perevoznaya. He states that it does not make any difference to him where the terminal is built.
3 August 2005	WWF distributes information that director Vainshtok of Transneft fired the director of the department responsible for the selection of the terminal location Perevoznaya. However, this is not mentioned in the media.
5 August 2005	Vainshtok invites a staff member of WWF Moscow to his office to discuss environmental aspects of the project. They meet and agree to continue "mutual consultations."
15 August 2005	A second public hearing is held in Vladivostok. The vast majority of the 200 participants oppose a terminal on the Amur Bay. However, the chairman Vladimir Simonenok, Head of the Energy Department of the Primorsky Krai administration, proposes a protocol text with hearing results that does not mention the opposition against the Perevoznaya option. The majority of the participants then sign an alternative protocol text proposed by NGOs that states that the terminal should not be built at Perevoznaya.
15 August 2005	First public hearing held at Slavyanka, the capital of the district where the proposed terminal site is located. Not one of the 100 participants at this hearing speaks out in favor of a terminal at Perevoznaya on the Amur Bay. Again the chairman (this time from the Khasan administration) refuses to mention the opposition against the terminal in the hearing's protocol. Most participants sign the protocol proposed by NGOs, and only one participant signs the protocol proposed by the chairman.
18 September 2005	At a conference in Vladivostok on 18 September 2005, three Russian ministers (Minister of Natural Resources, Minister of Transport and Minister of Economic Development and Trade) state that Nakhodka is a more suitable terminal location because it is a developed industrial area. The ministers are concerned about the large ecological impact of a terminal at Perevoznaya; however, Transneft declares that the statements are not an official government position. Transneft still plans to build at Perevoznaya.

## **Appendix IV. Overviews of data on alternative terminal sites**

**A) Transneft data**

**B) Data compiled by WWF, Phoenix Fund and scientists from the Russian Far East**

**C) Comparison**

Appendix IV - A

Transneft’s “Comparison of alternative terminal sites”<sup>30</sup>

Indicator	Perevoznaya	Ustobolovka	Vladimir Bay	Olga Bay	Nakhodka			Strelok Bay	Vanina Bay	Sovietskaya Gavan Bay
					Vrangel Bay	Kozmina Bay	Popova Bay			
1. Suitability for tankers (300,000 tons, “non-ice class”)	+	– ice conditions	+	+	+	+	+	+	– difficult ice conditions	– difficult ice conditions
2. Intensity of local ship movements (At its full capacity (up to 80 mln tons annually) an estimated 536 tanker movements will be needed)	+	+	+	+	– Congestion in the Nakhodka Bay area as a result of the presence of four ports: Nakhodka Fishing port, trading port, Eastern port and oil port.			– Navigation complicated due to intensive ship movements to Vladivostok	– Ship movements do not present complications	– Ship movements do not present complications
3. Period of ice cover	+	–	–	–	–	–	–	–	–	–
	65 (floating ice)	100	90	90	80	80	80	80	160	160
4. Level of shelter	+	–	+	–	–	–	–	+	–	+
	sheltered bay	open bay	sheltered bay, tug required for 300,000 ton tankers	open bay	sheltered bay, tug required for 150,000 and 300,000 ton tankers	open bay	open bay	sheltered bay, tug required for 150,000 and 300,000 ton tankers	open bay	open bay
5. Depth (in meters)	>24	>27	>30	20	16	18	23	23	16	20
• 300,000 tons tankers	No dredging needed	No dredging needed	No dredging needed	Dredging Needed	No dredging needed	Dredging needed	No dredging needed	Dredging needed	Dredging needed	No dredging needed
• 150,000 tons tankers	No dredging needed	No dredging needed	No dredging needed	No dredging Needed	No dredging needed	No dredging needed	No dredging needed	No dredging needed	Dredging needed	No dredging needed

<sup>30</sup> Transneft frequently claims that Perevoznaya was selected as terminal site from a large number of alternative locations on the coast of the Sea of Japan. However, Transneft – in spite of many requests and obligations by Russian law – never disclosed information on the selection process that resulted in this choice. The company failed to provide research reports and data concerning alternative terminal sites. However, on 19 May 2005 Transneft provided this overview to the members of the Primorsky Krai DUMA (parliament) during a session in which the pipeline project and proposed terminal location were discussed. Most “data” on Perevoznaya in the overview do not correspond with data presented by specialists from the Sea Protection Institute and scientists from the Institute of Geography of the Russian Academy of Science, Far Eastern Branch. According to these scientists, much of the Transneft data is inaccurate. For instance: one glance at a map is sufficient to determine that Perevoznaya is not “a sheltered bay,” but merely a curve in the coastline. As a result of the incorrect information, Perevoznaya appears the best of the 10 options included in this overview.

Indicator	Perevozna ya Bay	Ystsobo- lovka	Vladimir Bay	Olga Bay	Nakhodka			Strelok Bay	Vanina Bay	Sovietska- ya Gavan Bay
					Vrangel Bay	Kozmina Bay	Popova Bay			
6. Number of days exposed to high winds	12	26	24	24	28	28	28	28	30	38
7. Duration of periods with high winds	2-3	3-4	3-4	3-4	3	3	3	3-4		
8. Number of days with waves higher than 3 m	0	31	30	30	0	10	12	2	0	
9. Available coastal area for terminal and other infrastructure	Flat +	Flat +	Difficult, rugged terrain -	Difficult, rugged terrain -	Difficult, rugged terrain -	Difficult, rugged terrain -	Difficult, rugged terrain -	Difficult, rugged terrain -	-	+
10. Organizations presently using the site	No +	No +	Ministry of defense -	Ministry of defense -	No +	No +	No +	Ministry of defense -	No +	Ministry of defense -
11. Conditions for building the pipeline in the area	Flat +	Difficult, rugged terrain -	Difficult, rugged terrain -	Difficult, rugged terrain -	Rugged terrain, the district is densely populated the last 100-130 km from the terminal			Flat +	Flat +	
12. Areas with restrictions for building an oil terminal	Not present +	Not present +	Approval needed from the navy -	Approval needed from the navy -	According to regulations an oil terminal can not be built closer than 27 km from Nakhodka (a town of the 2nd category)			Not present +	Not present +	Approval needed from the navy -
13. distance to railway ( km)	2,5 +	340 -	200 -	190 -	9 +	10 +	6 +	6 +	8 +	6 +

Appendix IV – B

**WWF’s Comparison of Alternative Oil Terminal Sites  
Siberia- Pacific Oil Pipeline**

The table was compiled by WWF on the basis of data provided by:

- S. Moninets (Sea Protection Institute)
- B. Preobrazhensky and I. Arzamstsev (Institute of Geography, Russian Academy of Science, Far Eastern Branch)
- Y. Bersenev and K. Zgurovsky (WWF)
- S. Bereznuk (Phoenix Fund)

(WWF did not include the least attractive alternatives in its table: Ust Sobolovka, Vanino Bay, Sovetskaya Gavan. The table below is a shortened version of the WWF table: not all indicators and footnotes have been included, and the data sources have been removed. A complete version will be provided by WWF Russia on request (see contact data Appendix VII)

Indicator	Perevoznaya	Bezmyan-naya Bay	Vladimir Bay	Olga Bay	Nakhodka Bay			Strelok Bay
					Vrangel Bay	Kozmina Bay	Novitskova (north of the island Lisiy)	
1. Suitability for tankers (300,000 tons, “non-ice class”)	Except for January-March	Year-round	Except for January-March	No data	Year-round	Year-round	Year-round	Year-round
2. Exposed to winds	Exposed to winds from the south and east, sheltered from winds from the north.	Exposed only to western winds (on average 4 days per year)	Not exposed	No data	Not exposed	Exposed to southwestern and western winds (5 days per year on average)	Not exposed	Not exposed
3. Duration of the period with ice cover (days per year)	90-100 (65 days of solid ice cover)	50-65 (solid ice only close to the coast, floating ice elsewhere)	65-75	120-140	75-90			50-60
4. Sheltered bay / Exposed bay	Exposed	Exposed	Sheltered	Sheltered	Sheltered	Sheltered	Sheltered	Sheltered
5. <u>Depth</u> Distance (km) from the coast where a depth is reached of: - 20 meters - 30 meters	0,7 – 1,8 3,5 – 4,8	0,04-0,9 0,6 – 1,2	No data	No data	Nowhere deeper than 20 m	0,14 – 0,2 0,7 – 1,5	0,08 – 0,15 0,4 - 1,1	0,02 – 0,1 0,04 – 0,5

Indicator	Perevoznaya	Bezmyan-naya Bay	Vladimir Bay	Olga Bay	Nakhodka Bay			Strelok Bay
					Vrangel Bay	Kozmina Bay	Novitskova (north of the island Lisiy)	
6. Average number of fog days per year	45-106	No data	No data	No data	43	43	43	No data
7. Days per year with high winds (5 Beaufort or more) according to Preobrazhensky	137	15	Not exposed to storms	No data	Not exposed to storms	Not exposed to storms	Not exposed to storms	Not exposed to storms
8. Days per year with high waves (>3,5 m)	20	3-5	3-5	30	0			0
9. Geological foundation for the terminal	Rugged, steep terrain on the Lomonosov peninsula, dense layer of saturated silt (more than 100 m of quicksand) along the coastal wetlands. Powerful underwater sediment flow.	No limitations, solid rock foundation. Low coastal relief.	Low hills, wet soils, suitable for building a terminal. Base of nuclear fleet.	No data	Difficult, rugged terrain, rock fundament	Low hills, rocky foundation, sandy/ pebbly sediment.	Difficult, rugged terrain, rock fundament	No limitations, low relief near coast.
10. Distance to railroad (km)	2,5	1,5	200	190	0	6	6	10
11. Necessity of dredging to increase depth	200 000 cubic meter	No dredging needed	No dredging needed	No substantial dredging needed	Repeated dredging needed	No dredging needed	Dredging needed	No dredging needed
12. Existing local infrastructure	- Electrical power line - village - Aquaculture center - Area for camping - Collection point for red seaweed ( <i>Ahnfeltia plicata</i> )	- Electrical power line - Main road/village - Shipyard - Potential for deepwater piers	-electrical power line -road -three villages	No data	-electrical power line -road -ship repair yard	- electrical power line - main road/town - piers - shipyard	-electrical power line -road - railroad -ship repair yard	- electrical power line, - village

Indicator	Perevoznaya	Bezmyan-naya Bay	Vladimir Bay	Olga Bay	Nakhodka Bay			Strelok Bay
					Vrangel Bay	Kozmina Bay	Novitskova (north of the island Lisiy)	
13. Ecological impact	Serious irreversible damage to extremely rich marine and terrestrial ecosystems of southern Primorye, significant loss of life of migrating birds, impact to the state biosphere "Kedrovaya Pad" protected area and the marine nature reserve, serious harm to the local salmon stocks, and stagnation of fish hatcheries.	Minimal impact on coastal ecosystems. No protected areas or natural features.	Serious conflict with commercial marine aquaculture (scallops, sea cucumber, algae, sea urchins). No protected areas or natural features.	Threat to main salmon rivers – marine cultures (scallops, sea cucumber, algae, sea urchins). Very limited impact on local wildlife refuge Vasilkovsk.	Minimal impact on coastal ecosystems. No protected areas or natural features.	Conflict with commercial marine cultures sea urchins and scallops). No protected areas or natural features.	Minimal impact on coastal ecosystems. No protected areas or natural features.	
14. Conditions for oil spill clean-up activities in the direct vicinity of the terminal	Difficult	Average to difficult	Average	Average	Favorable			Average
15. Conditions for oil spill clean-up activities en route to and from the terminal	Difficult	Average	Favorable	Favorable	Favorable			Average

Indicator	Perevoznaya	Bezmyannaya Bay	Vladimir Bay	Olga Bay	Nakhodka Bay			Strelok Bay
					Vrangel Bay	Kozmina Bay	Novitskova (north of the island Lisiy)	
16. Impact on recreational areas (expert opinion)	Impact on the warmest area of the Russian Pacific coastline. Destruction of established recreational areas at Petsany, the Lomonosov and Yankovsky peninsula, and partially on the islands Ruski, Popov, Reynik and Rikord.	The recreational resources are not significant and little used.	Impact on the extensive sandy beaches of the Vladimir Bay used by the citizens of Primorye as well as by visitors from Khabarovsk, Magadan and Siberia.	Impact on recreational areas of local significance.	Impact on recreational areas of local significance.			Impact on the extensive sandy beaches of the districts Domaslino and Rudnevo, and the island Putiatin used by citizens from Primorye as well as from other regions in the Russian Far East. Impact on the presently little used recreational potential of the island Askold.

## Conclusions

Based on the aggregation of factors to consider in choosing a terminal location, the preferable locations are:

1. Bezmyannaya Bay on the larger Ussuriisk Bay (main disadvantage: exposure to western winds),
2. Strelok Bay (main disadvantage: need to secure permission from the Pacific Fleet),
3. Kozmino Bay (main disadvantages: the relative small size of the bay and the need to use an ice-breaker in the bay itself (the route to the bay is free of ice))
4. Vladimir Bay (main disadvantages: the long distance from the railway, and conflicts with marine aquacultures such as scallops, sea cucumbers, algae, and sea urchins, and the need to use an ice-breaker in the bay itself (the route to the bay is free of ice)).

## Appendix IV - C

## Comparison of data: Transneft - WWF / Phoenix Fund / Scientists

Table C provides a comparison of the terminal data used by Transneft (Appendix A) and the data from WWF, Phoenix Fund and local scientists from the Russian Far East (Appendix B). ) Table C includes only terminal sites and indicators that both Transneft and WWF included in their analysis and overview.

According to Transneft, Perevoznaya scores best (or equal to other locations) for five of the seven indicators. According to the WWF table, Perevoznaya does not lead in any category. According to the WWF table, Perevoznaya has the worst score (or equally poor as other locations) for six of the seven mutual indicators, whereas according to Transneft, Perevoznaya does not have the lowest score in any of these indicators.

Many of Transneft's data seem incorrect. For instance; every Vladivostok citizen knows that a heavy truck can drive across the ice of Amur Bay to Perevoznaya in almost any winter. However, according to Transneft, solid ice covers do not occur in the bay. The use of inaccurate data can be explained as an attempt to "coach" the inferior Perevoznaya-option successfully through the official Environmental Impact Review. Rostekhnadzor (the government agency responsible for the EIR) accepted the data from Transneft and agreed with Transneft that Perevoznaya is the best option. This indicates that Russian government organs may not be impartial when it comes to supervising the activities of powerful state-owned companies like Transneft.

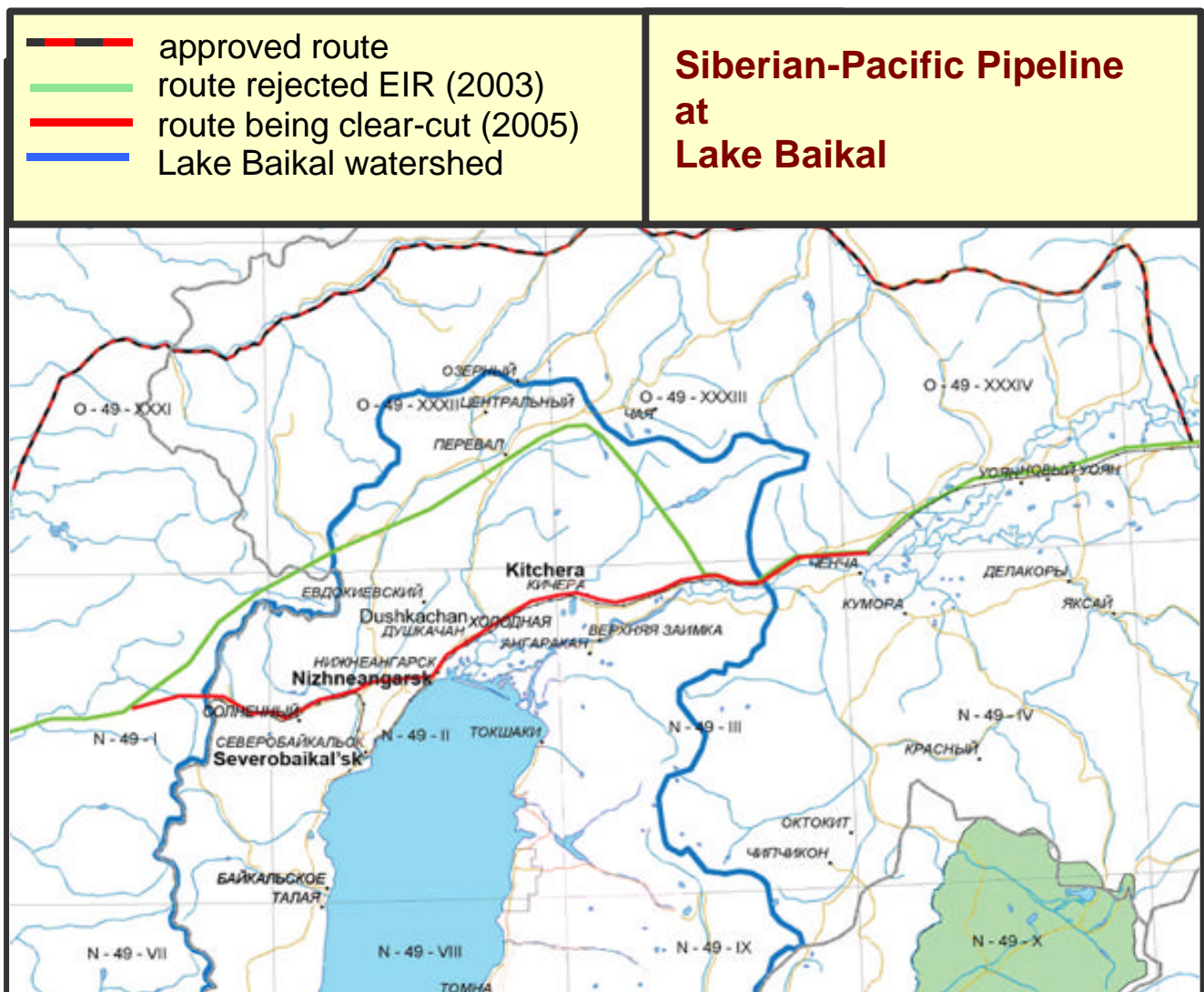
Indicator	Perevoznaya		Strelok Bay		Kozmina Bay		Vladimir Bay		Vrangel Bay	
	WWF	Transneft	WWF	Transneft	WWF	Transneft	WWF	Transneft	WWF	Transneft
Suitability for tankers (300,000 tons, "non-ice class") <sup>31</sup>	Not suitable January, February, March	+	Year round	+	Year round	+	Not suitable January, February, March	+	Year round	+
Period of ice cover (days per year) <sup>32</sup>	65 days solid ice cover	+ 65 days floating ice	Narrow band of solid ice along coast line	- 80	65 days solid ice cover	- 80	90 days solid ice cover	- 90	75-90	- 80
Days exposed to high winds (> 5 Beaufort) <sup>33</sup>	137	12	0	3-4	0	28	0	24	Not exposed	0
days with waves >3m	20	0	0	2	0	10	0	30	0	0
Necessity to dredge to increase depth for tankers 300,000 tons	200,000 cubic meter	No dredging needed	No dredging needed	No dredging needed	No dredging needed	No dredging needed	No dredging needed	No dredging needed	Repeated Dredging needed	No dredging needed
Bay sheltered/exposed	Exposed	sheltered	sheltered	sheltered	sheltered	exposed	sheltered	sheltered	Sheltered	sheltered
Distance to railway	1.5 km	2.5 km	0 km	6 km	10 km	10 km	140 km	200 km	0 km	9 km

<sup>31</sup> Transneft provides only scores (-/+). According to Transneft all five locations are equally suitable, whereas Perevoznaya is less suitable than Strelok -, Kozmina - and Vrangel Bay according to the WWF table.

<sup>32</sup> Transneft provides scores (-/+). Perevoznaya scores best because - according to Transneft - the Amur Bay has ice flows, but no solid ice cover.

<sup>33</sup> The WWF columns show the opinion of Professor Preobrazhensky for this indicator.

## Appendix V. Lake Baikal



Lake Baikal is Russia's most famous protected area and a UNESCO World Heritage Site consisting of 3,150,000 hectares. It is the world's deepest and oldest lake and contains 20% of the world's fresh water. No other lake, not even Lake Victoria in Africa, holds more fresh water.

Over 80% of the species that occur in and around the lake are unique to the area. These species include animals such as the Baikal sturgeon and seal.

Transneft submitted two routes passing north of Lake Baikal for evaluation in the government's Environmental Impact Review (EIR). One of these routes, passing the shores of the lake at 12 km, was turned down by the government in 2003 due to the threat it posed to Lake Baikal.

The responsible authorities selected a second route that would run at least 80 km from the lake. However, local authorities and NGOs exposed the fact that Transneft started illegal clear cutting along a route that passes less than one kilometer from the lake. This route follows existing railways and would be much cheaper than the routes that pass further away from Lake Baikal. Rosprirodnadzor, the responsible agency of the Ministry of Natural Resources investigated

complaints and documented the violations. The ministry organized a press conference together with Russian NGOs on 15 June 2005, when journalists were informed about the violations near Lake Baikal.

Rosprirodnadzor then decided to file lawsuits against the subcontractors that work on the pipeline at Lake Baikal.

Transneft often states that it operates according to Russian law, and Transneft's president Vainshtok has been quoted in the media as stating that Transneft is not responsible for violations of its subcontractors; however, Transneft is at least morally responsible for the damage done at Lake Baikal.

Transneft has also been quoted in the media as stating that natural conditions make it impossible to build the pipeline along the northernmost route and that it is impossible to bring construction workers to the sites, let alone heavy equipment. Why then did Transneft provide this option for evaluation in the EIR if it is impossible to build the pipeline there?

The map shows the various routes along Lake Baikal:

1. The route that was rejected in 2003
2. The route that has been approved
3. The route that comes as close as one kilometer to the shore (illegal clear cutting and prospecting took place in 2005 along this route)

Please note that the approved route runs outside the lake's watershed. As a result, the rivers that the pipeline crosses along this route cannot carry oil spills to the lake.

Transneft presented the illegal route that passes the lake at one kilometer on maps at public hearings in August 2005 as if it is the officially approved route.

## Appendix VI. Open Letter to the Prime Minister of Japan

*Below you will find a petition signed by 39 organizations that was sent to the Japanese Prime Minister Koizumi and his cabinet. The Japanese government has offered to provide finance, in the form of soft loans, for the Siberia-Pacific Pipeline Project. The signatory parties request Japan to urge Russia to reconsider building the terminal of the Siberia-Pacific Pipeline on the Amur Bay. No answer to the letter has been received.*

March 14, 2005

To: His Excellency Junichiro Koizumi  
Office of the Prime Minister of Japan  
Cabinet Secretariat  
1-6-1 Nagata-cho, Chiyoda-ku  
Tokyo 100-8914 JAPAN  
Fax: +81-3-3581-3883  
E-mail: [jpm@kantei.go.jp](mailto:jpm@kantei.go.jp), [kanteihp-info@cas.go.jp](mailto:kanteihp-info@cas.go.jp)

Your Excellency:

We, the undersigned organizations, respectfully request that you, the Prime Minister of Japan, and your Cabinet urge the Russian Federation and the Russian oil transport company Transneft to reconsider their plan to build an oil pipeline through the seismically active Severomuisky Range near Lake Baikal to the pristine Perevoznaya Bay on the Amur Bay in Southwest Primorsky Krai. We do not all necessarily oppose construction of a pipeline to the Sea of Japan; however, we do all strongly oppose its route through fragile ecosystems in the Lake Baikal basin and in Southwest Primorsky Krai as well as its terminal in Perevoznaya Bay.

The proposed terminal site in Perevoznaya Bay, within the greater Amur Bay, is the worst possible place in the Russian Far East to locate an oil terminal and refinery for many reasons.

Perevoznaya Bay is an extremely open bay, and in the event of an oil spill, water currents will carry oil over a wide area. In Perevoznaya, the high volume of tanker traffic between the area's many islands during the windy storm season greatly increases the probability of a major oil spill. The water near Perevoznaya is shallow, and oil tankers traveling to and from Perevoznaya will have to navigate past a string of small islands at the mouth of the Amur Bay to reach it. The Khasansky area, where the Perevoznaya Bay is situated, is also a critical economic zone for recreation, aquaculture, and fisheries. The local population is reliant on those economies and so is strongly opposed to the construction of an oil terminal nearby, as evidenced in recent public hearings. Oil spills in the Amur Bay would threaten to pollute:

- The most popular beaches and tourist resorts in Primorsky Krai, visited by tens of thousands of tourists annually;
- The coasts of the city of Vladivostok, located directly opposite Perevoznaya in the Amur Bay;
- Primorsky Krai's main commercial aquaculture farms and important fish spawning grounds, on which local Russian fishermen are economically dependent; and
- The Far East Marine Biosphere Reserve: the only protected marine area in Russia and home to large populations of marine mammals and seabirds. The Far Eastern Marine Reserve is home to vast amounts of marine biodiversity and provides spawning grounds for species including sea cucumbers and pollock that migrate throughout the Sea of Japan. Oil spilled en route to Perevoznaya could potentially reach the Marine Reserve within a matter of hours.

The Transneft pipeline, if routed to Perevoznaya, would run along or through two protected land areas in southwest Primorsky Krai: Barsovy Wildlife Refuge and Kedrovaya Pad Nature Preserve. Kedrovaya Pad is Russia's oldest preserve and was recently awarded the status of a UNESCO Biosphere Reserve. Southwest Primorsky Krai is one of Russia's richest regions in terms of biodiversity: it is home to thirty percent of Russia's endangered "Red List" species, including the Amur tiger and the Amur leopard, which has been recognized by the World Conservation Union (IUCN) as critically endangered. With a remaining population of around thirty, the Amur leopard is one of the rarest cats on earth. Negative impacts from an oil pipeline connecting to a terminal in southwest Primorsky Krai through the leopard's only habitat may well lead to its extinction.

There are viable alternatives to the current planned route which would mitigate a number of the pipeline's dangers. These alternatives are superior to Perevoznaya both economically and from an environmental perspective.

An alternative site for the pipeline terminal is Nakhodka Bay, an active industrial port with existing oil terminals. Were the terminal to be located in Nakhodka Bay, no protected areas would be threatened, and because Nakhodka Bay is more enclosed than Perevoznaya, there would be significantly less danger of oil spills spreading via ocean currents. Locating the pipeline terminal in the already-developed port of Nakhodka would also be more cost-effective than building a new terminal in Perevoznaya. An important benefit of locating the terminal in Nakhodka is improved safety for oil transportation in the Sea of Japan. Nakhodka's port does not yet meet best international standards for oil transportation safety. The people of Japan suffered from this when the vessel "Nakhodka" spilled oil near western Japan in 1997. A port with best international safety practices would not have allowed such a decrepit ship to load and transport oil. Nakhodka's port is an accident waiting to happen. The Transneft pipeline will create significant investment for the Nakhodka port that would dramatically improve shipping safety throughout the Sea of Japan.

We are also concerned about the current plan to route the pipeline through an extremely seismic area north of Siberia's Lake Baikal. In its proposed route through the Severomuisky Range, the pipeline could be ruptured in earthquakes, landslides, mudflows, and other geological events which would cause both considerable economic losses and irreversible pollution of the Lake Baikal watershed. It is paramount that the Prime Minister only support a pipeline route that does not unnecessarily threaten people's livelihoods and fragile natural areas.

The Japanese government has the ability and responsibility to ensure that the East Siberia-Pacific Ocean pipeline is built according to best international environmental standards, does not cause unnecessary environmental harm, and improves oil transportation safety in the Sea of Japan. Since Japan will be a primary investor in the pipeline, we believe that you should act now to make certain the project is compliant with best practices.

We ask you to advise Russia publicly that Japan will proceed with the pipeline project only with full consideration of all possible environmental and sociological risks, the two greatest environmental risks being the location of the pipeline terminal in Perevoznaya Bay in Southwest Primorsky Krai and the construction of the pipeline through the seismically active area north of Lake Baikal. Improving both the pipeline route and safety standards will translate into greater financial security for the pipeline's financiers, which will include the Japanese government and Japanese banks.

The pipeline's planned path through Severomuisky Range and terminal in Perevoznaya Bay would needlessly threaten fragile ecosystems as well as rare and endangered species, including the nearly extinct Amur leopard. We, the undersigned, call upon you and your cabinet to act immediately to make the Transneft pipeline a safer project for the environment and for Northeast Asia as a whole.

Respectfully,

- Phoenix Fund
- Friends of the Earth Japan

- Pacific Environment
- World Wildlife Fund Japan
- World Wildlife Fund Russia
- Greenpeace Russia
- American Zoo and Aquarium Association
- AZA Amur Leopard Program
- Zoo New England
- Oregon Zoo
- Green Cross, Far Eastern Branch
- Tigris Foundation
- Resource Center Regional Activists Network (RC RAN)
- The Living Sea Coalition (Russian Far East)
- ISAR – Far East Social Resource Center
- Baikal Environmental Wave
- Buryat Regional Organization on Lake Baikal (BRO)
- Baikal Center for Public Environmental Initiatives (BCOEE)
- Baikal Watch
- Zelyoniy Dom “Green House” Nonprofit Organization
- Environmental Rights Center "Bellona"
- World Wildlife Fund United States, Bering Sea Ecoregion and Russia Projects
- Biodiversity Conservation Center
- NGO "Sakhalin Environment Watch"
- “Dauria” Ecological Center
- Kamchatka League of Independent Experts
- ‘Kaira Club”, Chukotka Public Environmental Association
- Tomsk Regional NGO "Institute of International Environmental Safety" (IIES)
- International Socio-Ecological Union
- Center for Russian Environmental Policy
- Altai Foundation
- Altai Conservancy
- Altai Assistance Project
- The Altai Project of the Center for Safe Energy
- International Rivers Network
- Rainforest Information Centre
- Totem Peoples Preservation Project
- Salinger Group, Inc.
- University of Maine Peace Studies Program
- The Morgan Bay Zendo
- Mongolian Medicine Project

## Appendix VII. Contact Information

In this appendix we provide contact information for parties involved in the Siberia-Pacific Pipeline Project or in the campaign for a change in the pipeline route. The list includes companies, NGOs, potential investors in the project and responsible Russian authorities and decision-makers. We tried to list the most relevant parties involved in the terminal issue. We did not include organizations with an exclusive focus on pipeline issues related to Lake Baikal.

Organization	Contact data	Person(s)	Comments / Involvement
<b>Moscow - based NGOs</b>			
Greenpeace (Russia)	+7-095-2574116 rvazhenk@ru.greenpeace.org	Ivan Blokov Roman Vazhenkov	Focus on Lake Baikal issue and media campaign
WWF (Russia)	+7-095-7270939 ichestin@wwf.ru EShvarts@wwf.ru	Igor Chestin (dir) Evgeni Shvarts	Campaign activities inside Russia, field projects in the Russian Far East
IFAW (Russia)	7-095-9333411 mvorontsova@ifaw.org	Masha Vorontsova (dir)	Sponsor field projects
EcoJuris	+7-095-9387001 ecojuris@online.ru	Viktor Gorokhov	Legal activities / lawsuits
<b>NGOs &amp; scientists active in The Russian Far East</b>			
Phoenix Fund	+7-4232 – 205048 Phoenix@mail.primorye.ru www.phoenix.vl.ru	Sergei Bereznuik (dir)	Field projects, local and international campaign
EcoDal	+7-4212-431751 ecodal@clinic.kht.ru	Irina Bogdan	Lawsuits (resulting in Khabarovsk court ruling that made the official project EIA invalid).
ISAR	+7-4232-269606 isarrfe@vlad.ru		Local campaign. Registered complaint at PrimKrai Prosecutors office which put a halt to the illegal building at Perevoznaya.
WWF (RFE)	+7-4232-406651 ydarman@wwfrfe.ru	YuryDarman (dir)	Field projects and local campaign
BROK	+7-4232-408095 swan1@vladivostok.ru	Anatoly Lebedev (dir)	Local campaign
Green Cross RFE	+7-4232-271051 ipe@vladivostok.ru	Aleksandrovitch Malishev (dir)	Legal activities / lawsuits
WCS (RFE)	+7-4232-432277 dalemiq@vlad.ru	Dale Miquelle	Field Projects. Wildlife Conservation Society was the first western conservation NGO that became active in the Russian Far East
Institute Geography	+7-4232-427660(home) prbz@tig.dvo.ru	Professor Dr. Boris Preobrazhenky	Far Eastern Branch of the Academy of Science. Compared suitability of Perevoznaya with other options
Institute for the Protection of Sea	+74232-515270 moninets@msun.ru	Sergei Moninets (dir)	Compared risks and impact related to oil spills at Perevoznaya site with an alternative site in Nakhodka Bay.

<b>Moscow - based Authorities and Decision-makers</b>			
Transneft	+7-095-9508178 +7-095-9508135 +7-095-9514889 (PR off) transneft@transneft.ru	Semyon Vainshtok (President)	Oil Pipeline Monopolist and Siberia-Pacific Pipeline project operator
Ministry Natural Resources	+7-095- 2545455 o_mitvol@mpr.gov.ru	Oleg Mitvol (dep. Head RosPrirodNadzor)	Mitvol traveled with Greenpeace to Lake Baikal to inspect illegal pipeline building activities and he organized a joint press conference with Greenpeace.
President Russian Federation	www.kremlin.ru/eng/article s/send_letter_Eng1.shtml	Vladimir Putin	Postal address available at website e-mails can be sent from website
Rostekhnadzor	+7-095-9123911 gosatomnadzor@gan.ru	Andrey Malyshev (head)	Responsible for 1st stage of the official project EIA
<b>Vladivostok - based Authorities and Decision-makers</b>			
Local Branch Ministry Natural Resources (GUPR)	+7-4232-437793 gupr@narod.ru	Boris Tsoy Prirodnadzor	GUPR has always openly stated that it opposes a terminal at Perevoznaya.
Primorsky Krai administration	+7-4232-209210/ 209269	Governor Sergei Darkin  Vice Governor Gorchakov	The Krai administration has been strongly promoting Perevoznaya, but recently Darkin stated he had no preference for a particular terminal site. However, the propaganda for Perevoznaya in local media controlled by the administration continues at full force.
<b>International Organizations</b>			
UNESCO MAB (Rus)	+7-095-1246000 mab.ru@relcom.ru	Mr. Valery Neronov (deputy chair)	Two UNESCO Biosphere reserves will be impacted if a terminal is built at Perevoznaya. UNESCO opposes a terminal at Perevoznaya.
UNESCO MAB (Int)	j.robertson@unesco.org +33-1-45684052	Jane Robertson	
IUCN	41/22/999-0155 jane.smart@iucn.org urs.breitenmoser@ivv.unib e.ch http://iucn.org	Jane Smart-head Species Program  UrsBreitenmoser, Cat Specialist Group	IUCN sent a letter to president Putin to express concern about plans to build at Perevoznaya.
EAZA	+31-20- 5200750 koen.brouwer@nvdzoos.nl	Koen Brouwer	The European zoo association sent a letter to president Putin requesting not to build at Perevoznaya. No answer was received.
AZA	Solson@aza.org pfefferkornc@metro.dst.or. us	Steve Olson (Director of Government Affairs) Chris Pfefferkorn (N. American Amur leopard breeding coord)	The American Zoo Association and 24 individual AZA zoos sent letters to president Putin requesting not to build the terminal at Perevoznaya.

<b>International NGOs</b>			
Pacific Environment	+1-415-399-8850x301 dkgordon@pacificenvironment.org www.pacificenvironment.org	David Gordon (dir)	International campaign / projects in Russia
Zool. Soc. London	+44-20-7449 6455 Sarah.Christie@zsl.org www.amur-leopard.org www.zsl.org	Sarah Christie (Carnivore&People Programme)	Int. Campaign / sponsor field projects / Zoo breeding program Amur leopard and tiger
Tigris Foundation	Via 7-4232-205048 mhotte@inter.nl.net www.tigrisfoundation.nl	Michiel Hötte (dir)	International Campaign / field projects
AMUR	+44-1225851251 sj.miller@ukonline.co.uk www.amur.org.uk	Sharon Miller	Sponsor field projects
David Shepherd Wildlife Foundation (DSWF)	44-1-483-272323 mel@davidsshepherd.org www.davidsshepherd.org	Melanie Shepherd	Int. Campaign / sponsor field projects
<b>Potential investors &amp; pipeline project partners</b>			
BP - TNK	+7-095-7777707 +7-095-7458958 company@tnk-bp.ru www.tnk-bp.com	Peter Henshaw (spokesman)	50% owned by British Petroleum. BP-TNK expressed an interest in building the terminal.
Japan Public Bank JBIC  (Japan Bank for International Cooperation)	+81-3-5218-3101 +81-3-52183100 (PR off) +81-3-5218-3946 (Fax) www.rotobo.or.jp  Examiner Environmental Guidelines sinsayaku@jbic.go.jp	Mr. Kyosuke Shinozawa (Governor)  Mr. Negishi (PR)	Public Japanese funds for the project would be provided by JBIC. Transneft has not requested funding. JBIC discusses the project with businessmen and Russian officials, but refuses a dialogue with Russian NGOs and scientists.
ROTOBO (Japan Association for Trade with Russia and Central-Eastern Europe)	+81-3-3551-6215 hochi@rotobo.or.jp	Mr. Tasuku Takagaki, Chairman	ROTOBO leads business delegations to Prim.Krai. of firms interested in investing in terminal. Refuses dialogue with Russian NGOs and scientists.
MIZUHO Corporate Bank	+81-3-5224-1111  +81-3-5222-5019 Osamu.odawara@mizuho-cb.co.jp	Mr. Osamu Odawara (equator Principles)	Japan's largest bank. Involved in Sakhalin oil and gas projects. Interested in oil projects in Prim.Krai. Willing to have dialogue with Russian NGOs and scientists. Only Japanese bank that signed Equator Principles.
Barclays Capital	+44-20-7623 2323 cyrus.ardalan@barcap.com	Cyrus Ardalan (Vice President)	Barclays led a bank consortium that provided a 250 mln \$US loan for Transneft's Baltic Pipeline project. Barclays has expressed an interest in the Siberia-Pacific Pipeline project.