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Reindeer herders in the Timan-Pechora oil province of Northwest Russia: an assessment of interacting environmental, social, and legal challenges

WINFRIED K. DALLMANN[a]*, VLADISLAV PESKOV[b], OLGA A. MURASHKO[c] and EKATERINA KHMELEVA[d]

[a]*Research Department, Fram Centre, Norwegian Polar Institute, Tromsø 9017 Norway;*
[b]*Association of Nenets People Yasavey, ul. Lenina 35 B, section 5, Naryan-Mar, 166000 Russian Federation;*
[c]*Institute of Anthropology, Moscow State University, ul. Mokhovaya 11, Moscow 125009 Russian Federation;*
[d]*Legal Center Rodnik, bul. Samarkandskiy 134a-2-102, Moscow 109507 Russian Federation*

The IPY-endorsed project MODIL-NAO (Monitoring of Development of Traditional Indigenous Land Use Areas in the Nenets Autonomous Okrug (NAO), NW Russia), concluded in early 2010, was a collaboration between scientists and indigenous peoples' representatives of the NAO in Northwest Russia. It has resulted in a GIS database showing traditional economic activities as well as modern oil development and is aimed at serving as a tool for the indigenous peoples of the area for negotiations about land use issues. The project focused also on assessing the state of socio-economic, juridical, and environmental conditions for the indigenous population of the area. Major data sources were a questionnaire survey amongst reindeer herders, and a satellite image interpretation with the aim to monitor physical degradation of the tundra. Both the database and the assessment are introduced and major challenges for future development are pointed out.

Introduction and background

The Nenets Autonomous Okrug (NAO) in northwestern Russia (Figure 1) is home to approximately 8000 Nenets and 3000 Izhma-Komi indigenous people out of a total population of approximately 42,000. Many of them depend directly or indirectly on reindeer husbandry, fishing, and hunting for their livelihood. In the past, reindeer pastures covered almost all of the territory. Now, however, large tracts of land have been degraded by oil prospecting and production or have become difficult to access across oil pipelines. Lakes and rivers are increasingly polluted.

A similar development occurred earlier in other parts of the Russian North and Siberia. Vakhtin (1992) summarized the environmental impacts of oil development since the 1960s in the Yamalo-Nenets and Khanty-Mansi autonomous okrugs: Pipelines and railway lines cut off reindeer migration routes, loss of 24,000 reindeer, loss of 110,000 km^2 of pasture lands, degradation of 177 km^2 of spawning grounds. Five state farms alone lost 6000 km^2 of pasture lands due to construction of traffic

*Corresponding author. Email: dallmann@npolar.no

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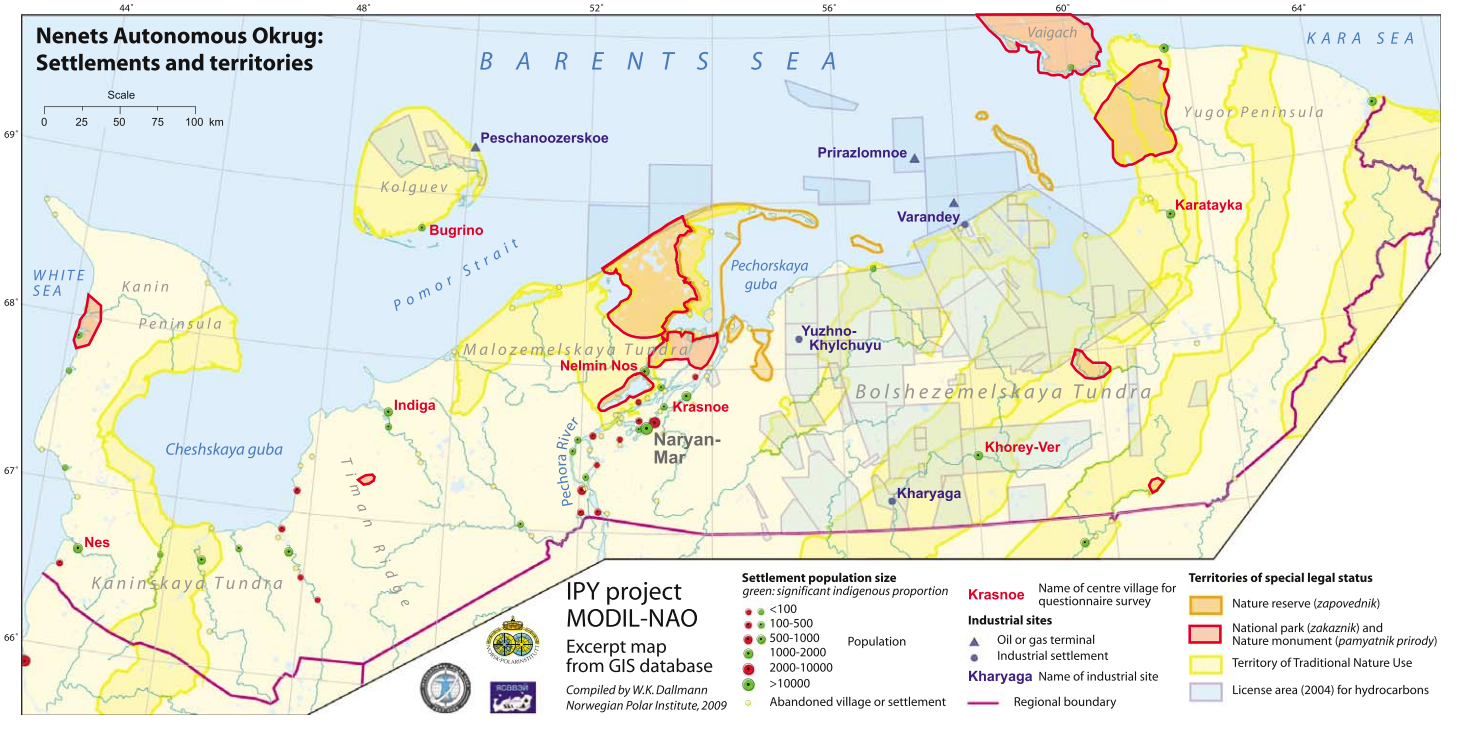

Figure 1. Overview map of Nenets Autonomous Okrug, excerpts from MODIL-NAO database: Settlements and territories. Selected map data comprise settlements (only center village of questionnaire survey are named), protected areas (status 2009), TTNU (Territories of Traditional Nature Use, status 2009), and on-land license areas allocated to oil companies (status 2004).

lines. The positive results of the oil boom did not reach the indigenous peoples. In the southern part of the development area the majority of indigenous people lost their traditional modes of livelihood. Aspects of this development have been dealt with in a number of more recent works (for instance: Forbes *et al.* 2006, 2009; Stammler 2002; Stammler and Peskov 2008; Tuisku 2002a, 2003; Wiget and Balaeva 2011).

Now the Timan-Pechora oil province in the NAO is one of the largest oil development areas of the Russian North. Close to 100 oil and gas fields have been discovered. About 25 different oil companies have licenses to develop the resources. An annual volume of more than 18.7 million tons of crude oil is extracted (Barents Monitoring 2009) – out of the Russian total of 580 million tons (Energy Information Administration 2007).

Being exposed to an industrial development of this dimension, environmental impacts on traditional livelihoods are eminent. Furthermore, there is an intricate legal system of land use rights, which, along with a variety of specific social factors, creates a complex socio-economic landscape for the indigenous people. Analyses are often hampered by the fact that even such data such as the spatial distribution of impacted areas are unknown. It is important to realize that environmental map data in Russia are available to the public only to a very limited extent.

The UN Declaration on the Rights of Indigenous Peoples (2007) states: Development must take place with their 'free, prior and informed consent.' To be able to participate in decision-making indigenous people need a well-founded knowledge base: knowledge of their own losses and needs, of the overall development, as well as of the interactions and consequences of what is going on in their territories. Only when founded on solid data, will their voices be heard.

On this background, the project 'Monitoring of Development of Traditional Indigenous Land Use Areas in the Nenets Autonomous Okrug, NW Russia' (MODIL-NAO) was carried out within the framework of the International Polar Year in 2007–2009. The project was a collaboration between the Norwegian Polar Institute (project leader W. Dallmann, project assistant Zoia V. Ravna) and the Association of Nenets People Yasavey (president V. Peskov, vice president A. Belugin, further F. Taybarey, A. Nosov, N. Shubin, and I. Semenov), with participation of scholars from anthropological and juridical disciplines. It was an attempt to collect relevant data and put them into an applicable form for public discussion. The principal objective was to give the indigenous population of the NAO a tool – a GIS map database – to promote their interests. The database (technical realization by B. Kuipers, Norwegian Polar Institute) can be accessed openly on the Internet (MODIL-NAO project website 2010) is interactive and shows traditional and industrial occupations in the NAO in a GoogleEarth compatible format. Maps illustrating the present paper are extracts from this database (Figures 1–4 and 9).

The database is accompanied with a comprehensive project report, which is available in English and Russian for downloading on the MODIL-NAO project website (Dallmann *et al.* 2010).

A major source of data for the project is a questionnaire survey directed toward traditional land users, mainly reindeer herders (led by O. Murashko; interviews carried out by V. Vylko, V. Nyurov, A. Nosov, F. Taybarey, V. Kostamo, and Ya. Evsyugina). Topics include all spheres of their living, their traditional occupations, their socio-economic situation, and the condition of their natural environment.

Satellite images in GoogleEarth (http://earth.google.com, carried out by W. Dallmann) were used to monitor visible, physical damage of the tundra.

A juridical analysis (by E. Khmeleva and T. Grechushkina, Rodnik Legal Center) summarizes federal and regional legislation on land use issues and investigates presently valid license agreements with respect to legal obligations. Together with publicly available information, the situation of the indigenous population was assessed. The present article is an excerpt of the project results. For more complete background information and data sources the reader is referred to the project report (Dallmann *et al*. 2010). Summaries of the project have previously been published in Krupnik *et al*. 2011 (Chapter 3.10 by G. Hovelsrud *et al*., pp. 437–439), and in Orheim and Ulstein 2011 (pp. 144–149).

The situation for traditional modes of livelihood

Reindeer husbandry is the most prominent traditional occupation in the NAO. Most herders move from their settlements close to the winter pastures in the forest tundra belt northward to the summer pastures in the barren tundra. Most of them are settled and semi-nomads working in brigades of cooperatives or as private reindeer herders. Lately a number of clan communities (*rodovye obshchiny*) have been formed, mainly in the village Nelmin Nos. The indigenous people participate both in subsistence and commercial fishing. Fishing provides a subsidiary occupation for reindeer herders, as well as other traditional subsistence activities such as hunting and gathering. Several reindeer herding cooperatives also have fishing and hunting brigades, while a minor number of cooperatives have mainly specialized in fishing (Figure 2).

The unemployment rate (registered people without a monetary income) among indigenous people is high. Individuals with more advanced education often leave the area. Life expectancy is extremely low – 40 to 45 years – because of poor access to medical care and alcohol abuse (Bogoyavlenskiy 2008). These and other factors go hand in hand with a general degradation of indigenous society.

Oil development in the tundra exacerbates the problem (Figures 3 and 4). An uncontrolled situation has developed around oil and gas exploitation in many parts of the NAO, where some oil companies are accused for grave violations of ecological standards and Russian legislation (Peskov 2002). Numerous oil spills and other degradations of the upper soil layers such as driving with tracked vehicles on unfrozen ground, occur in the tundra, inflicting damage on the Arctic natural environment, which is the basis for the livelihood of the indigenous people (Figures 5 and 6; Tuisku 2002a, 2002b, 2003).

Since the Russian socio-economic crisis of the 1990s herds have been rebuilt and stock numbers seem to have flattened out at a level around 150,000–160,000 reindeer. The overall productivity is still rising (Figure 7). As it has resulted from the present study, there is no direct relation between oil development in an area and the economic well-being of the reindeer herding enterprise using the same area. State subsidies and support programes for reindeer husbandry at the regional and federal level have certainly been a major reason for the overall recovery of reindeer husbandry after 2000, along with the improvement of veterinary services and market conditions. Additionally, oil companies also pay compensation for ceded pasture lands, but there are no statistics about this: such compensations are based on a variety of individual, often confidential, agreements. The sum of all

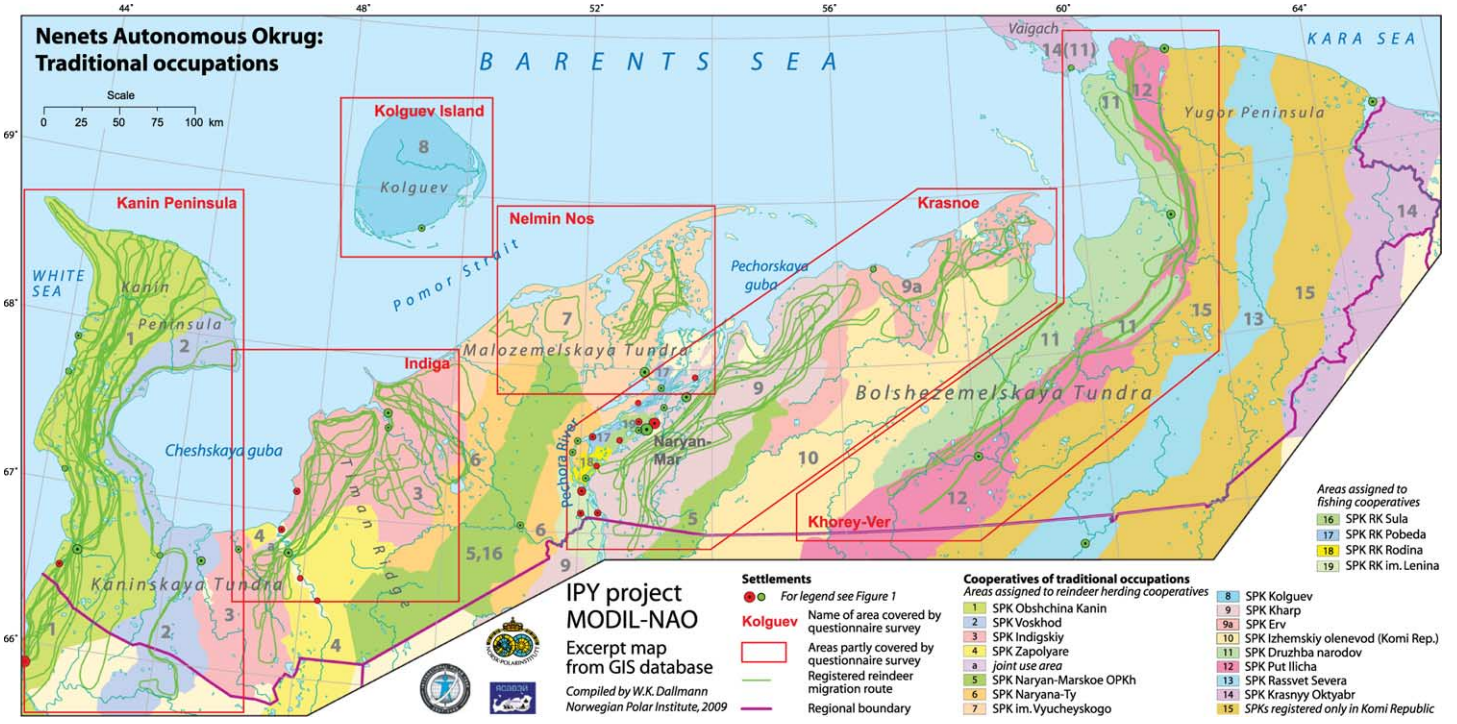

Figure 2. Overview map of Nenets Autonomous Okrug, excerpts from MODIL-NAO database: Traditional occupations. Selected map data comprise areas assigned to traditional cooperatives (SPKs) and areas investigated during the MODIL-NAO questionnaire survey. Registered reindeer migration routes as drawn by individual herders are indicated to roughly show the areas covered by the survey. No such data are shown on Kolguev Island, although the database contains similar data in a different form.

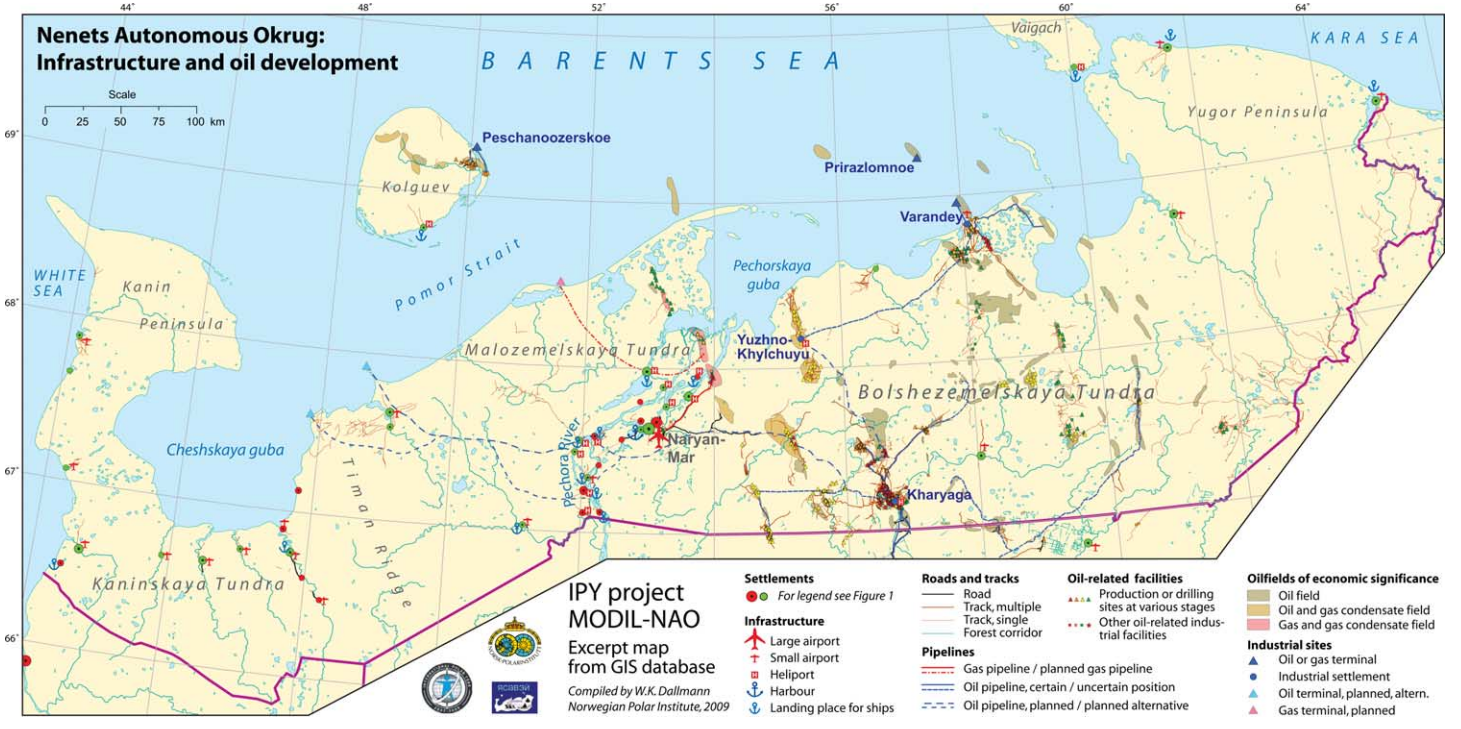

Figure 3. Overview map of Nenets Autonomous Okrug, excerpts from MODIL-NAO database: Infrastructure and oil development. Selected map data comprise settlements, harbours and airports, roads, vehicle tracks, oil fields of economic significance, pipelines, drilling sites and other oil-related facilities. Roads, vehicle tracks, and oil-related facilities are based on satellite image interpretation of images on GoogleEarth. Pipelines are partly added from other sources.

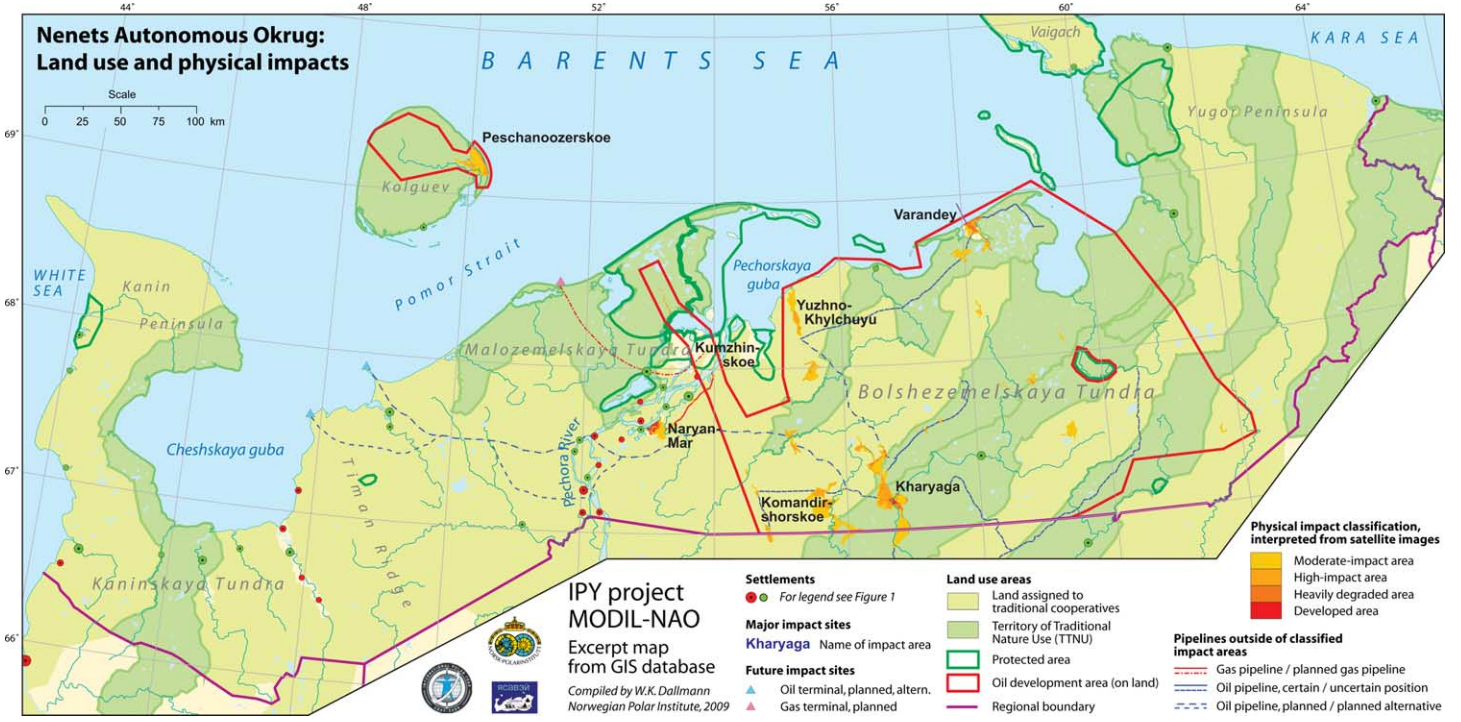

Figure 4. Overview map of Nenets Autonomous Okrug, excerpts from MODIL-NAO database: Land use areas and physical impacts. Selected map data comprise traditional land use and protected areas (see Figure 2) overlapping with oil development areas. Also shown is a classification based on satellite image interpretation of areas especially affected by industry.

Figure 5. Pattern of cross-cutting vehicle tracks from driving on unfrozen ground in the Varandey area. Such activity causes considerable harm to the tundra soil and vegetation and is illegal in Russia. Photo: Yasavey, September 2002.

these factors has so far economically compensated for the negative impacts of environmental degradation when looking at reindeer husbandry as a whole, although this is not necessarily so for all individual cooperatives and communities (Figure 8).

Figure 6. Test well drilling in the Varandey area. Large tundra spots are degraded through such activities. Photo: Yasavey, September 2002.

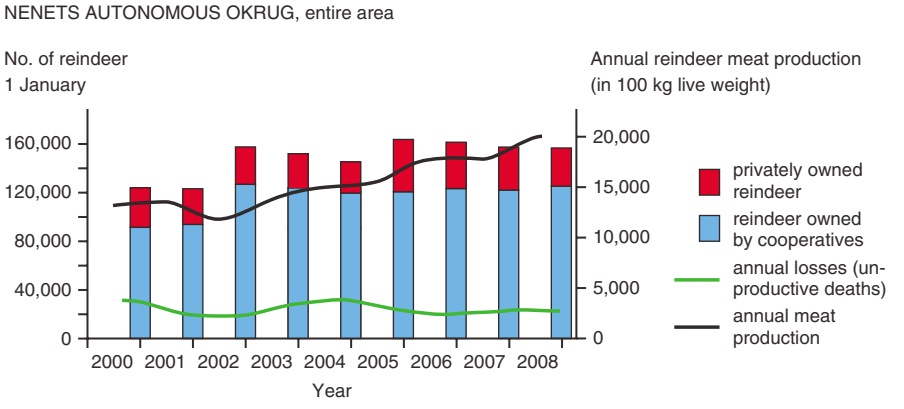

Figure 7. Diagram showing trends in reindeer husbandry development in the Nenets Autonomous Okrug (NAO) through the last decade, using the three main indicators, (1) number of reindeer, (2) meat production, and (3) unproductive deaths (losses). While numbers of reindeer and losses have roughly flattened out after the recovery since the economic crisis of the 1990s, meat production is still rising. Data are from the former Reindeer Husbandry Management of the Agricultural Department of the Nenets Autonomous Okrug.

Juridical situation and traditional land use management

Three federal laws are completely devoted to the rights of indigenous peoples. Laws supporting indigenous peoples' rights have a general declarative character and do not specify the duties of the non-indigenous resource extractors – such as oil or gas companies – to preserve these rights ['On guarantees of the rights of numerically small indigenous peoples of the Russian Federation' (1999), 'On the general

Figure 8. Nenets nomad camp in the Varandey area. Photo: Yasavey, September 2002.

principles of organising communities of numerically small indigenous peoples of the North, Siberia and the Far East of the Russian Federation' (2000) and 'On Territories of Traditional Nature Use of numerically small indigenous people of the North, Siberia and the Far East of the Russian Federation' (2001)]. At the level of the NAO, these issues are regulated by both federal and NAO legislation, for example, the NAO law 'On regulation of land issues on the territory of the Nenets Autonomous Okrug' (2005), the NAO law 'On subsoil resources' (2003), and the NAO law 'On reindeer husbandry in the Nenets Autonomous Okrug' (2002).

According to NAO legislation, persons working in reindeer husbandry and their authorized representatives have the right to request ecological and ethnological impact assessments of activities potentially infringing the interests of reindeer husbandry and other traditional occupations and to participate in carrying out such impact assessments (Part 4 of Clause 17 of the NAO law N 341-OZ, 'About reindeer husbandry in Nenets Autonomous Okrug' [15 March 2002]).

The basic mechanism of environmental protection which was used in Russia until 1 January 2007 was the State Environmental Assessment (SEA). Practically of all kinds of economic activities were subject to SEA. After a legislative modification from 1 January 2007, only the extent to which the documentation of the planned industrial project conforms with environmental requirements must be assessed. However, technical regulations pertaining to environmental protection are absent. There is a certain danger that proper environmental assessments will not be carried out at all.

There are no laws regarding ethnological assessments, although such assessment processes have been carried out in some places of the Russian Federation.

Indigenous peoples' participation in decision-making regarding how hydrocarbon projects are carried out is possible at several stages of a project, for instance, through referenda, coordination meetings, Public Environmental Assessments, and – if carried out – SEAs.

According to the previous version of the Land Code, indigenous peoples engaged in traditional economic activities were entitled to use the land, that is reindeer pastures, for free and unconditionally. As of 2001 (revised version of the Land Code) reindeer pastures can be leased to companies by the state if traditional land users are compensated. Although traditional land users are supposed to play a role in leasing decisions, how 'voluntary' this is in reality is open to question.

It is also noteworthy that reindeer herders only receive compensation for the calculated loss of reindeer pastures and reindeer. There is no compensation for losing fishing, hunting, and gathering resources, which contribute substantially to reindeer herders' subsistence economy.

Federal and NAO legislation open for the formal establishment of Territories for Traditional Nature Use (TTNU; federal law N 49-FZ, 'On Territories of Traditional Nature Use of indigenous numerically small peoples of the North, Siberia and the Far East of the Russian Federation,' 7 May 2001; revised on 26 June 2007). Today, 8 out of 22 agricultural production cooperatives have established TTNUs at a regional level (Figure 2). These lie within lands allocated to reindeer husbandry and other traditional occupations already during Soviet times. Unfortunately, the regulations for such territories lack provisions on how to manage them. However, they include provisions stating that the natural resources within such territories shall be managed and their monitoring carried out by Northern indigenous communities or organizations representing them. This includes monitoring compliance with the

main requirements of environmental and land management legislation applicable to the land use for economic purposes. Allocation or withdrawal of land for purposes other than traditional economic activities shall be agreed on with local self-government bodies or determined through local referendum.

In light of this legislation, it is noteworthy that not all the companies make agreements with reindeer herders. Only three companies have agreements with reindeer herders that cover the entire period of their license agreements. Most agreements with herders are only valid for 1–2 years, whereas the company's license is for a longer period. Many agreements are confidential and cannot be evaluated by public opinion, neither can it be ascertained that the indigenous contract partners fully understand the consequences of the agreement they sign. There is no mechanism for the investigation of reindeer herders' opinions on land allocation issues and oil companies' operations.

One of the challenges in efficient management of traditional nature use lands is the lack of up-to-date land use plans for traditional activities. Other challenges are the lack of proper management of TTNUs and ambiguity regarding which government authority is responsible for this, the lack of compulsory assessment of industrial projects' impact on the traditional lands and lifestyle of the indigenous people and the absence of a common forum in the Okrug where representatives of government authorities, industrial companies, and indigenous peoples could negotiate and make common decisions to achieve a balance of interests of all stakeholders (Stammler and Peskov 2008).

Industrial development in relation to indigenous peoples in the NAO

Prospecting for hydrocarbons in the NAO began in the 1960s. The real oil boom in the area started in the 1990s, in the Bolshezemelskaya Tundra, the Pechora River delta, and, to a minor extent, on Kolguev Island. The main regions of oil production are Kharyaga with large surrounding areas in the southern Bolshezemelskaya Tundra, and Varandey (Figure 9) and Yuzhno-Khylchuyu in the northern Bolshezemelskaya Tundra. Pipelines connect these areas or are planned to be built. Oil is exported by pipeline southward, and by ship from the terminal of Varandey. There is a minor terminal for local export on Kolguev Island. Another large terminal is planned near the village of Indiga (Figure 3).

To meet environmental standards in the rapidly developing hydrocarbon resource area is a challenge. Pollution of the Pechora River started in the 1950s, mainly from the early prospecting in the upper part of the river, in the Komi Republic. Spill water dumped into the river, as well as oil spills, affect fish species. Most of the drinking water of the NAO comes from the Pechora River. The main problematic, persistent pollutants are arsenic and mercury, which are derived from industry in the Komi Republic (Osina 2008). Some licenses have been withdrawn. There is also a high pressure on reindeer pastures. Pastures with sufficient quality of lichen for the reindeer have been reduced by almost 20% from 1984 to 2002 (Romanenko and Kanyukova 2008).

It was not possible to discover whether the issued licenses for hydrocarbon development are based on positive decisions of the SEA Committee or not. Most of the license agreements have been found to comply poorly with legal requirements to consider NAO's indigenous peoples' rights. Only few of them contain the subsoil resource user's responsibility to make agreements with indigenous peoples. In most

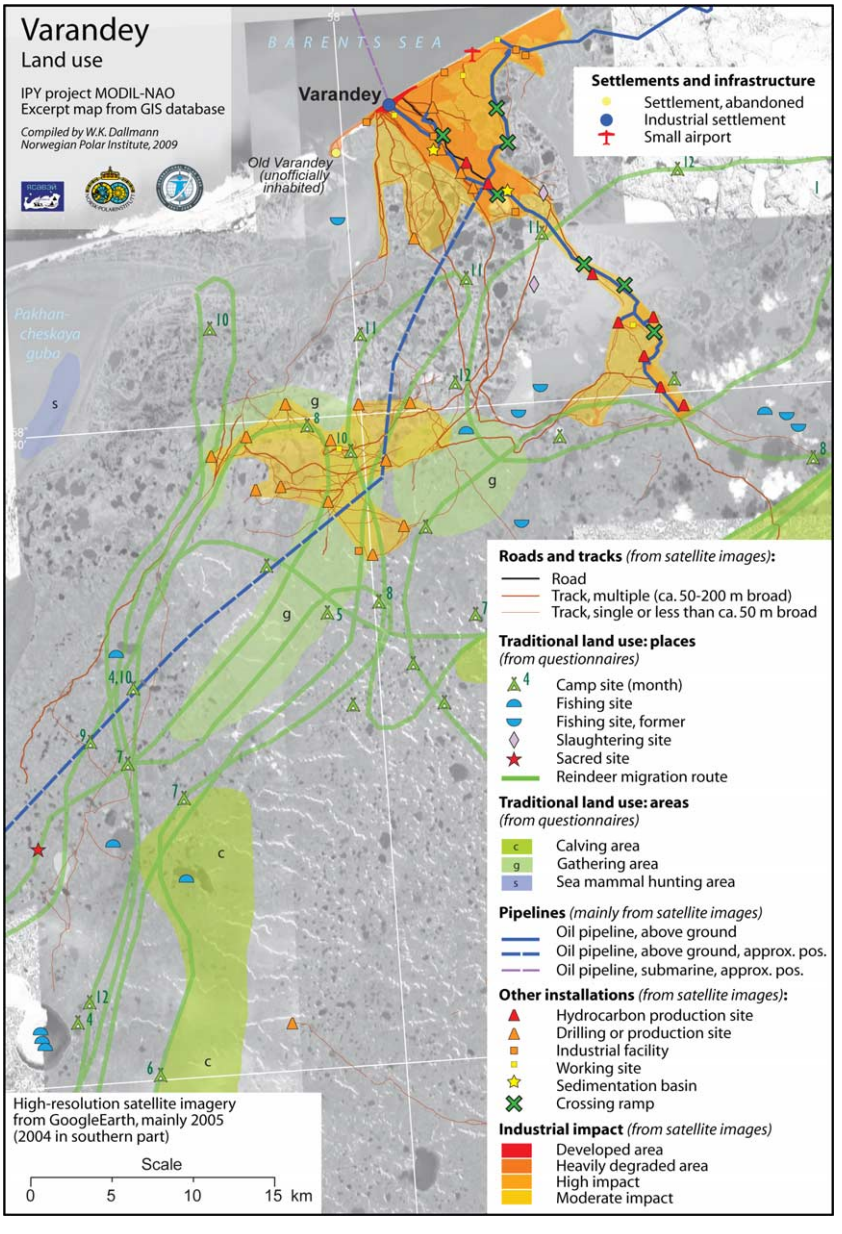

Figure 9. Detailed map of area close to the oil terminal Varandey, excerpts from MODIL-NAO database, overlain on satellite image from GoogleEarth. The map shows an example of detailed map data contained in the project's database available on the web (http://modilnao.s3.amazonaws.com/kml/ModilNaoV1.0p.kmz). Selected map data comprise both oil facilities, classification of physical degradation of tundra (both from satellite image interpretation), and indigenous land use (from questionnaire survey). The area is used by reindeer herders of the SPK koopkhoz Erv based in Krasnoe. Although partly degraded areas are still used by reindeer herders, the high amount of abandoned fishing places close to the oil rigs is eminent. It is interesting that slaughtering sites have developed close to the terminal, where meat can be sold to the companies.

instances it is up to the license holders whether to enter into such agreements or contracts with the representatives of indigenous peoples. Only one out of 38 analyzed agreements stipulates license holder's liability to compensate for losses as a result of resource development operations as demanded by legislation. The analysis of license agreements also revealed a negative trend. Most of the license agreements, which to various extents stipulate subsoil users' liability to observe the rights of indigenous peoples, were concluded in 2001–2003, while those recently made (2008–2009) do not provide for such liability.

License agreements oblige license holders to ensure soil re-cultivation in the areas damaged because of natural resources development, as well as to comply with other environmental protection requirements. At the same time, as reality shows, the environmental protection requirements are not being observed by all license holders. This situation violates the rights of NAO's indigenous peoples to protection of their original environment and traditional way of life.

It is widely understood that unlawful conditions prevail in connection with many oil installations. Some facilities, especially older ones, are built according to low safety standards and frequently experience minor failures. Unfortunately, there is a tendency among many companies to withhold information on environmental damage such as minor leakages and pollution discharges. The relevant government agencies have no practical possibility or sufficient funding to really control pollution, although they know well the real situation (Bezumov *et al.* 2008).

The basic method applied to protect nature is the development of a framework of protected areas. But even if the borders are not touched, polluted waters do not stop at their boundaries. Eighty percent of the land east of the Pechora River is estimated to be degraded if pollution restrictions are not intensified (Lavrinenko 2008).

All land assigned to reindeer husbandry is state land. The extent of reindeer pastures has decreased from 90% to 73% of the NAO (Chibisov 2008). The remaining land has changed its status through negotiations. Negotiations for agreements regarding compensation for lost land are the only way of influencing the development. Despite certain legal guarantees, indigenous people have no opportunity to change major, politically approved decisions. It is also questioned if the establishment of TTNUs has any practical effect, as now many major oil development areas are within TTNUs.

There are numerous examples of good relations at the local level between companies and reindeer herders. Companies often assist with helicopter transportation of people and goods between city, villages, and pastures.

Indigenous people in general have a large capacity to adapt to environmental changes, for instance, through selecting the grazing areas which are most suitable under the actual circumstances at any time. But alternative areas are getting fewer and smaller, while increasing portions of the land become useless for traditional occupations.

The questionnaire survey and its results

The questionnaire survey was carried out from the autumn of 2007 until the autumn of 2008. Reindeer herders and other villagers from six areas within the NAO were interviewed about diverse spheres of their lives, their traditional occupations, their socio-economic situation, and the condition of their natural environment (for questionnaire, developed for the project, see Dallmann *et al.* 2010). A total of 103

respondents contributed to the project. Information about land use was drawn on maps (source: 76 respondents). The respondents were mostly interviewed by co-villagers who were trained for this purpose at seminars in the okrug capital Naryan-Mar. The six study areas (Kanin Peninsula – 29 resp., Kolguev Island – 14 resp., the villages of Indiga – 16 resp., Nelmin Nos – 20 resp., Krasnoe – 15 resp., and Khorey-Ver – 9 resp.; Figures 1 and 2, and 11) cover areas of absent, moderate and strong physical impact from oil-related activities (Figure 4).

The analysis showed that many respondents are engaged in traditional economic activities and such activities have decreased only slightly from the last generation to the present one. For people engaged in traditional economies, related activities account for 65–100% of their total work (Figure 10). For most areas, the traditional food proportions of their diet is estimated to 61–83%. Of the traditional foodstuffs consumed by reindeer herders' (which were the majority of the interviewed people) 40–70% are reindeer products, while fish, wild game, and wild plants make up 10–25%, each.

There is a huge difference in the annual income of active reindeer herders (200,000–600,000 RUR) and people involved in other traditional activities (30,000–50,000 RUR). Respondents usually underestimated the monetary value of the contribution of traditional foodstuffs they consume, which may have an annual average value of 65,000 RUR – not taking into account other traditional products such as skin and fur clothes.

The high consumption of traditional food indicates a high degree of indigenous people's vulnerability in the event of the failure of their traditional sources of subsistence. They are vulnerable to degraded pastures, hunting, and fishing areas, and territories for gathering wild plants due to industrial development on the land.

traditional food is:	Kolguev	Kanin	Indiga	Nelmin N.	Krasnoe	Khorey-V.
main means of subsistence	29 %	82 %	75 %	55%	87 %	100 %
necessary supplement	7 %	12 %	25 %	15 %	7 %	0 %
addition to diet	64 %	6 %	0 %	30 %	4 %	0 %
Specific share of traditional products in diet	**63 %**	**73 %**	**67 %**	**62 %**	**75 %**	**84 %**

Figure 10. The role of traditional products in the diet of the respondent of the questionnaire survey: Percent of respondents that consider their own traditional products as (1) the main means of subsistence, (2) necessary supplements, or (3) an addition to their diet. The last row specifies the share of traditional products in their diet in percent. Note: It is evident that the role of products from traditional activities in the diet of the respondents from Nelmin Nos and Kolguev is underestimated. The data given by the Kolguev respondents about the role of traditional products in their diet also contradicts the high evaluation of such products in the diet of the same respondents when answering other questions. The answers may reflect that only few active reindeer herders are among the respondents. For Nelmin Nos, see special remarks in the text. The 100% role of traditional kinds of activities in Khorey-Ver families' livelihood can be explained by the fact that only professional reindeer herders were interviewed there. The large proportion of products from traditional activities can also be explained by the long distance between the settlement and trading centers, as well as by high supply costs.

Special circumstances occur in the responses from one village, Nelmin Nos, where the contribution of traditional foodstuffs to the diet is very low (Figure 10). At the same time, they have a very low average income and cannot afford to buy much food. Their diet appears to be nutritionally inadequate. There is no oil development in the area today, although test drillings were undertaken earlier. The reason can probably be found in a combination of two factors: One is mismanagement – the reindeer herd has decreased from 12,000 to 4200 head since 1998, mainly during the phase of restructuring of the cooperative before 2001. The cooperative has since dissolved into many clan communities. The other is the proximity to the okrug capital, Naryan-Mar, which has resulted in lawful and unlawful exploitation of the natural resources (including extensive poaching) by outsiders.

Three of the six study areas, Krasnoe, Khorey-Ver, and Kolguev Island, have experienced oil development. All respondents from Krasnoe noted the negative effect of oil production, mainly pointing at the pollution of lakes, rivers, and pastures (Figure 11). At the same time, some of them noted that their living conditions have improved (construction of houses, roads, assistance for transportation). Especially interviews with residents of Krasnoe revealed that reindeer herders – although quite negative toward the impacts of oil industry on environment and traditional livelihood – stated that the overall living conditions have considerably improved since the beginning of the oil boom. Respondents from Krasnoe take advantage of the proximity of their settlement to the main market of traditional products in Naryan-Mar.

Those respondents from Kolguev having their herds on the oil development side of the island noted considerable negative environmental effects such as loss of vital pasture vegetation, polluted fishing grounds, etc.

Most respondents from Khorey-Ver stated that oil development has improved their living conditions and even the conditions for reindeer husbandry. The oil development opened up opportunities for new foodstuffs, for the use of helicopters for transportation, and hopes for compensation. They are successful reindeer

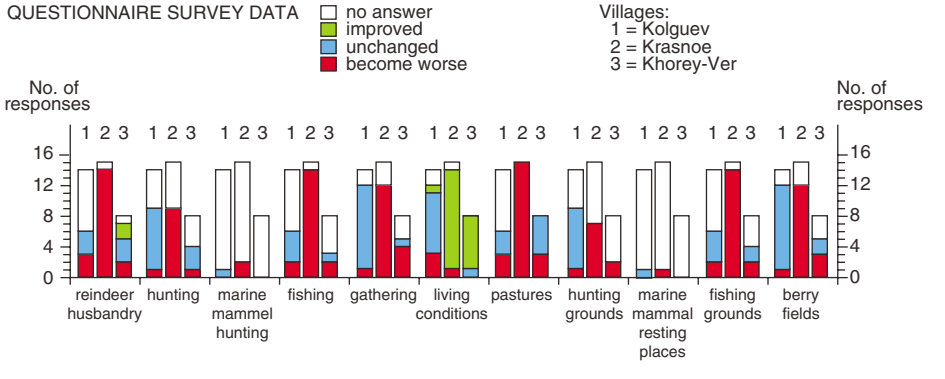

Figure 11. Data from the questionnaire survey in the three areas affected by oil development (Kolguev – SPK Kolguevskiy, Krasnoe – SPK Kharp and Erv, and Khorey-Ver – SPK Put-Ilicha). The columns show how many respondents consider oil development to be for the good (green colour) or bad (red colour), or without considerable influence (blue colour) for various traditional activities and for various ecosystems. Although most respondents – especially in Krasnoe – have observed overwhelmingly bad influences, they feel that living conditions have generally improved (central column set).

herders with high incomes and were not interested in discussing the state of the environment.

Khorey-Ver was considered important for the project because the major facilities of the Kharyaga oilfield and adjacent fields, including a major pipeline system, divide the winter pastures of the reindeer herding cooperative into two (compare Figures 2 and 3). Nevertheless, respondents noted that there were almost no constructions on their routes. Although it was not revealed from the interviews, it seems that reindeer herders have ceased using their pastures on the southwestern side of the Kharyaga pipeline, and herds are concentrated to the east of it in winter.

Respondents from Indiga and the Kanin Peninsula, who today live far from oil-related activities, are generally afraid of any future industrial development in their area, which they think would degrade the environment and negatively interfere with their livelihood. An oil terminal with a connecting pipeline is planned at Indiga.

A common theme among respondents concerning the issue of who determines the future of their family or community is that they have to rely on themselves. They obviously avoided blaming others. Still, when asking about threats toward their livelihood, they named ecological threats connected with oil production such as the degradation of pastures, water quality and berry fields, and the reduction of wild animal stocks, In addition, they referred to threats like poaching and the many homeless dogs that are left by newcomers. Main threats in places unaffected by oil industry are considered to be unemployment, alcoholism, and distant educational facilities.

Almost all respondents said that they do not see their individual participation in a future arrangement. They did not show a determination to change of their subsistence pattern or look for alternative ways of supporting themselves. At the same time, their responses to the questionnaire made clear their high level of dependency on traditional subsistence activities. This indicates that if these subsistence activities are negatively affected it will have serious consequences on their welfare.

Concerning the attitude of oil companies toward indigenous peoples, the interviews revealed that companies formally comply with the requirements of public discussions and agreements with indigenous communities, although there is no fixed procedure for these discussions. A significant lack of such discussions was only reported from Kolguev Island. Such procedures should aim at minimizing negative impacts and at facilitating the cooperative monitoring of industrial projects to ensure they comply with agreements and environmental regulations.

Conclusions

One of the major results of the project is the interactive database, showing traditional and industrial occupations in the NAO, accessed through the MODIL-NAO project website (2010). It has been transformed to kml format and is thus applicable for the average Internet user using GoogleEarth. The database is open and can be extended; rights to maintain and extend the database are held by the Association of Nenets People Yasavey. It is intended to reveal background data for discussions of land use issues between indigenous peoples' representatives, companies, and administration. Opposed to other comparable data in Russia, the present database can be accessed and controlled by the public.

Besides the mere collection of data, the project resulted in a number of general findings, of which the following are considered the most important ones:

(1) Difficulties that affect reindeer herding units, apart from deterioration and reduction of the pasture areas, include such social factors such as poor management, the loss of prestige in reindeer husbandry as a livelihood, loss of traditional knowledge, a significant change of values in the Nenets society, social apathy, unemployment, and, in connection with the latter, the abuse of alcohol.
(2) There are frequent complaints by local populations regarding oil companies and their responsibility toward pollution of pastures, illegal waste disposal, pollution of water resources, decrease of fish stocks, poaching by oil workers, and others, and attacks by stray dogs on domestic reindeer.
(3) In areas where future oil development is expected, people are afraid of its negative influence on traditional land use. In areas where oil development has been a reality for some time, people noticed this negative influence but simultaneously saw an improvement of the economic situation due to investments by oil companies into the system of social security.
(4) Traditional land users have little to no influence over the most of the development of oil and gas installations, apart from providing minor technical recommendations.
(5) The high consumption of traditional food among traditional land users indicates a high degree of indigenous people's vulnerability in the event of reduced or eliminated traditional sources of subsistence. The permanent replacement of traditional food by market food will seriously affect the health and the general wellbeing of the indigenous population.
(6) Environmental regulations are not satisfactory, as there are no effective mechanisms of control. A severe deficiency is the lack of control over the use and misuse of the environment; companies unlawfully use tracked vehicles on summer pastures, pollute lakes, rivers, etc.
(7) Only a few companies fulfill their legal obligations toward indigenous peoples; in recent years' the trend shows that such liabilities are no longer included in the license agreements.

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References

Barents Monitoring, 2009, The Social-Economic development of the Nenets Autonomous Okrug in 2009. Available online at: http://img3.custompublish.com/getfile.php/1182734.623.stxwbxfcue/BarentsMonitoring.NenetsAO.2009.Q4.pdf?return=www.barentsobserver.com (Accessed October 2010).

Bezumov, V. *et al.* (NAO Department of ROSPRIRODNADZOR), 2008: Problemy zakonodatel'stvo po otnosheniyu k zashchite okruzhayushchey sredy (Problems of environmental protection legislation towards NAO.) *EcoPechora Conference, Naryan-Mar*, May 13–14, oral presentation.

Chibisov, S. (NAO Department of Natural Resources and Environment), 2008, Perspektivy ekonomicheskogo razvitiya NAO, ekologicheskie riski i sposoby ikh ustraneniya [Economic development prospects of the NAO, environmental hazards and ways to address them]. *EcoPechora Conference, Naryan-Mar*, May 13–14, oral presentation.

Dallmann, W.K., Peskov, V.V., and Murashko, O.A. 2010, *Monitoring of Development of Traditional Land Use Areas in the Nenets Autonomous Okrug, Northwestern Russia*, 176 pp (Russian version: 192 pp). Tromsø, Norway: Norwegian Polar Institute, Internet publication. Available online at: http://npolar.no/ipy-nenets/pdf%20files/MODIL-NAO%20EN%20final%202010-03-05.pdf

Energy Information Administration, 2007, Country Analysis Briefs Header Russia. Available online at: http://www.eia.doe.gov/emeu/cabs/Russia/Full.html (Accessed October 2010).

Forbes, B.C., Bolter, M., Muller-Wille, L., Hukkinen, J., and Muller, F. (Eds.), 2006, *Reindeer Management in Northernmost Europe: Linking Practical and Scientific Knowledge in Social-Ecological Systems*. *Ecological Studies 184*, 380 pp (Berlin: Springer-Verlag).

Forbes, B.C., Stammler, F., Kumpula, T., Meschtyb, N., Pajunen, A., and Kaarlejärvi, E. 2009, High resilience in the Yamal-Nenets social-ecological system, West Siberian Arctic, Russia. *Proceedings of the National Academy of Sciences of the United States of America*, 106(52), pp. 22041–22048. Available online at: http://www.pnas.org/content/106/52/22041 (Accessed October 2010).

К вопросу о районировании территории Ненецкого автономного округа под задачу освоения нефтяных месторождений *Экологические проблемы Севера: межвузовский сборник научных трудов*

Krupnik, I, Allison, I., Bell, R., Cutler, P., Hik, D., López-Martinez, J., Rachold, V., Sarukahnian, E., and Summerhayes, C. (Eds.), 2011, *Understanding Earth's polar challenges: International Polar Year 2007–2008*. University of the Arctic, Rovaniemi, Finland/CCI Press (Printed Version), Edmonton, Alberta, Canada and ICSU/WMO Joint Committee for International Polar Year 2007–2008.

Lavrinenko, I. (NAO Director of Protected Areas), 2008, Osobo okhranyaemye prirodnye territorii – osnova raboty v ramkakh zashchity okruzhayushchey sredy [Protected Areas – the foundation of the environmental protection framework of the NAO]. *EcoPechora Conference, Naryan-Mar*, May 13–14, oral presentation.

MODIL-NAO PROJECT WEBSITE, 2010, Monitoring of Development of Traditional Indigenous and Use Areas in the Nenets Autonomous Okrug, Northwest Russia. Available online at: http://npolar.no/ipy-nenets (Accessed October 2010).

ORHEIM, O. and ULSTEIN, K. (Eds.), 2011, *International Polar Year 2007–2008. The Norwegian Contribution*, 192 pp. (Oslo: Research Council of Norway).

OSINA, A. (Dvina-Pechora Basin Water Department), 2008, Status po ispol'zovaniya vody reki Pechora v NAO (Water use status of the Pechora River in NAO). *EcoPechora Conference, Naryan-Mar*, May 13–14, oral presentation.

PESKOV, V.V., 2002, Prezidentu Rossiyskoy Federazii Putinu V.V. [To the President of the Russian Federation V.V. Putin] Letter to the President of 14 October 2002. English translation published in: *ANSIPRA Bulletin No. 8, December 2002*. Available online at: http://www.npolar.no/ansipra/english/bulletin/Bulletin08E.pdf (Accessed October 2010).

ROMANENKO, T. and KANYUKOVA, M. (Naryan-Mar Station of Russian Acadamic of Agric.), 2008, Pitanie i ekologiya oleniya v NAO [Dietary habits and ecology of reindeer in the NAO]. *EcoPechora Conference, Naryan-Mar,* May 13–14, oral presentation.

STAMMLER, F., 2002, Success at the edge of the land: Present and past challenges for reindeer herders of the West-Siberian Yamal-Nenets Autonomous Okrug. *Nomadic Peoples NS*, **6**, pp. 51–71.

STAMMLER, F., and PESKOV, V., 2008, Building a 'Culture of dialogue' among stakeholders in north-west Russian oil extraction. *Europe-Asia Studies*, **60**(5), pp. 831–849.

TUISKU, T., 2002a, Nenets reindeer herding and industrial exploitation in northwest Russia. *Human Organisations*, **61**(2), pp. 147–153.

TUISKU, T., 2002b, Transition period in the Nenets Autonomous Okrug: Changing and unchanging life of the Nenets people. In *People and the Land. Pathways to Reform in Post-soviet Siberi*, E. Kasten (Ed.), pp. 189–205 (Berlin: Dietrich Reimer Verlag).

TUISKU, T., 2003, Surviving in the oil age: co-existence of the reindeer herding and petroleum development. In *Social and Environmental Impacts in the North. Methods in Evaluation of Socio-Economic and Environmental Consequences of Mining and Energy Production in the Arctic and Sub-Arctic*, R.O. Rasmussen and N. Koroleva (Eds.), pp. 449–461 (Dordrecht: Kluwer Academic Publications).

UN DECLARATION ON THE RIGHTS OF INDIGENOUS PEOPLES, 2007, Available online at: http://www.un.org/esa/socdev/unpfii/en/drip.html (Accessed October 2010).

VAKHTIN, N., 1992, Native peoples of the Russian far North. *Minority Rights Group, International Report 92/5*, London, pp. 1–36.

WIGET, A. and BALAEVA, O. 2011, *Khanty, People of the Taiga. Surviving the 20th Century*, 398 pp (Fairbanks, Alaska: University of Alaska Press).