

CASESTUDY06

FSC in Russia

WORKING TOGETHER TO IMPROVE FSC

#06

FSC AT RISK

**FSC IN RUSSIA:
CERTIFYING THE DESTRUCTION
OF INTACT FOREST LANDSCAPES**

August 2014

GREENPEACE

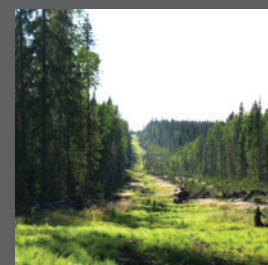
The Forest Stewardship Council (FSC) was founded 20 years ago to promote environmentally sound, socially beneficial and economically viable management of the world's forests, without compromising their health for future generations. Unfortunately, this balance has not been achieved in all FSC-certified forests, particularly in large Intact Forest Landscapes (IFLs).

IFLs are the world's remaining large unfragmented forest areas undisturbed by roads and industrial development.¹ They have extremely important conservation value as they store a disproportionately high amount of global forest carbon, are large enough to sustain their biological diversity, and are critical for the livelihoods of forest-dependent peoples living within and adjacent to them. They are large enough to host both far-ranging top predators as well as other wildlife, and enable many plant and animal species to adapt to climate change. They also provide crucial ecosystem services such as regulating water and nutrient cycles.

The values and ecosystem services that IFLs provide are being exposed to severe and often irreversible damage when fragmented and/or destroyed through continued expansion of industrial logging and its infrastructure. Furthermore, nearly all deforestation begins with logging, roadbuilding and fragmentation. As the science on the extent of the vulnerabilities of IFL values to fragmentation is still limited, a precautionary forest management approach must assume the risk of severe or even irreversible damage in every fragmentation situation.

The FSC currently certifies logging that fragments and degrades IFLs, although its Principle 9 requires that management activities in High Conservation Value (HCV) forests maintain or enhance the attributes that define such forests. Unfortunately, the FSC still has no clear guidelines, steps and restrictions for forest management to ensure the maintenance of IFL values.

The FSC urgently needs to adopt clear thresholds for IFL protection to prevent FSC certification of forest management operations that are leading to IFL fragmentation and, ultimately, their loss. At the same time, the FSC should broaden its services to include certification of forest conservation and restoration, protected areas and ecosystem services (e.g. water sources/quality, soil stability, carbon storage), as well as economic opportunities for forest-dependent communities who rely on IFLs. This will help bolster FSC credibility as well as increase FSC's relevance in many regions.



Intact forest landscape values considered HCV2 by FSC are not being maintained or enhanced due to its values being damaged by fragmentation or destroyed by clearcuts. Arkhangelsk region, Russia, August 2011. © Greenpeace

OTHER CERTIFICATION SYSTEMS

Greenpeace considers other schemes such as PEFC (The Programme for the Endorsement of Forest Certification), SFI (Sustainable Forestry Initiative) and MTCS (Malaysian Timber Certification Scheme) as fake forest certification labels and systems. These schemes are controlled by and for the forestry industry and their loose rules do not provide any assurance in the ability of these schemes to halt natural forest conversion, biodiversity loss and the violation of indigenous peoples' rights.

EXECUTIVE SUMMARY



The spruce species are suppressed by abundant regeneration of pioneer deciduous (birch and aspen) trees in this forest stand near Dvinsky Forest (IFL). Arkhangelsk region, Russia, June 2012. © Greenpeace/Yaroshenko

The FSC is failing to distinguish good forest management practices from the typical model of unsustainable forest exploitation widely employed in intact boreal, or taiga, forests. It is therefore failing in its mission to be a tool for forest protection. When FSC certification first came to Russia's taiga, conservation groups hoped it would help to eliminate poor forest practices and to aid greater forest protection, particularly of High Conservation Value (HCV) forests, including the most valuable intact forest landscapes (IFLs). Unfortunately, FSC is endorsing the prevalent destructive forest practices in Russia instead of trying to eliminate them. The FSC logo is consequently being misused to provide green cover for the destruction of HCV forests.

Although the world's other large boreal forest regions are also threatened by unsustainable logging, the long-term impacts are especially evident in Russia due to the long history of mismanagement of the taiga forest. The logging model used for the ongoing development of the wild taiga has been described by some northern European and Russian environmental NGOs as "wood mining", to emphasise that forests are used as non-renewable resources, similar to mining minerals like coal.² "Wood mining" practices have typically occurred to feed large local mills that use softwood, and involve no successful post-harvest management. This has resulted in the depletion of the most productive and accessible coniferous forests in the taiga and has created a large deficit of the coniferous forest resources needed to support the forestry industry. Furthermore, it has created a situation where, even though economically unviable, logging companies are forced to move further away from productive forest areas and their industrial infrastructure to exploit the last remaining, and more remote, Intact Forest Landscapes (IFLs) in the fragile slow-growing environments of the north. Inevitably, this is leading to the destruction of IFLs as well as to the failure of Russia's forestry industry.

Ensuring sustainable yield, where the volume of wood removed from a forest each year must at least be equalled by the rate at which a forest is able to regenerate itself and the growth of trees in un-harvested areas, is a fundamental criterion for FSC. However, the FSC system has not halted "wood mining" practices even though they contravene its own principles and criteria for well managed forests, demonstrating that it is clearly prioritising quantity over quality. As a result, FSC has become a serious threat to Russia's boreal IFLs. Whilst this case study focuses on the scandal of "wood mining"

in frontier areas in northwest Russia with high concentrations of FSC certificates, the extent – particularly of destructive logging of IFLs being allowed under the FSC logo – is widespread throughout Russia's taiga.³

For this case study Greenpeace conducted a comprehensive satellite imagery-based analysis (2002-2013) of industrial forest practices in an area with a high concentration of companies that were either currently or formerly FSC-certified, or had applied for FSC certification (Table 1). The area is located in an interfluvium – an elevated area between the valleys of adjacent watercourses – between the Northern Dvina and Pinega rivers in the Arkhangelsk region of northwest Russia (Fig.1). The case study area is known for the valuable intact forest landscape at its centre, the Dvinsky Forest (IFL). The companies operating in this area all employ the destructive “wood mining” model. The area covered by this case study is facing its final wave of “wood mining” (Fig. 1), which is advancing rapidly towards the central interfluvium and into the Dvinsky Forest (IFL). Dvinsky Forest (IFL) is considered HCV2⁴ by the FSC, and therefore should be protected.

Greenpeace's analysis estimates that, at best, there is only enough coniferous forest outside the Dvinsky Forest (IFL) to supply the areas' forest industry for another 8-13 years if cut rates remain the same. But even these forests are represented by rather fragmented pieces of coniferous forest patches scattered in an extensive matrix of secondary early successional post logging deciduous forests, and are unlikely to be of much interest to the industry. This case study shows that the industry clearly bases the current and future wood supply on resources concentrated in intact forest landscapes. Up to 90% of logging within the concession areas included in the analysis has taken place within Dvinsky Forest (IFL). Neither the existing HCV forests – including intact forest landscape – within the concession areas, nor its most valuable parts, slated for legal protection, are excluded from currently applied cut rates to prevent them being logged. Instead of increasing the protection of HCV forests, FSC is certifying these completely unsustainable “wood mining” practices.

In summary, FSC is not only failing to require good forest management practices, it is not even capable of filtering out the worst forest management practices, with the exception of two recent suspensions of forest management certificates in the case study area. It is crucial to FSC's integrity that FSC acts now to stop further logging in IFLs, supports increased IFL protection – including legal protection, and only certifies companies that are truly practicing good forest management according to its Principles and Criteria. If FSC takes no action to address the violation of its Principles and Criteria, it will seriously undermine stakeholder and consumer trust, as well as the integrity of its logo.

Wood mining is a particular problem in the frontier development of remote intact forests landscapes, where valuable coniferous forests (in the case of taiga) are being logged at non-sustainable rates, which in the absence of efficient forestry practices far exceeds the natural regeneration rates of coniferous forest.

RUSSIA'S LEGACY OF TAIGA FOREST MISMANAGEMENT



Narrow-gauge railway for timber transport. The FSC continues to certify the destruction of IFLs such as Dvinsky Forest instead of supporting increased IFL protection and only certifying companies that truly practice good forest management. Arkhangelsk region, August 2007. © Greenpeace/ Khakimulina

Russia's taiga forests have historically been viewed as free deposits of wood resources by the forest industry, and were always logged extensively without the application of any forest management. Intensive extractive logging had exhausted all native forest around the established forest settlements of its most commercially valuable species. This forced logging companies to move into less and less productive primary forests located in the more remote, more fragile environments, often buffering or encroaching into IFLs.

The conservationists working on boreal forests in northern Europe and Russia coined the term "wood mining" to describe such exploitation of the wild taiga. The term is designed to emphasise the use of forests as non-renewable resources, similar to mining minerals, as it is just as exhaustive and destructive.

There is evidence that the latest wave of "wood mining", which can also be seen in other regions of Russia,⁵ is speeding up the fragmentation of intact forest due to roadbuilding and clearcutting, and resulting in greater indirect forest losses (Fig. 1).

The annually permitted volume of timber harvesting – Annual Allowable Cut (AAC) – applied in the Russian boreal forests predetermined "wood mining" as the AAC calculations are not based on a level at which harvest rates can be permanently sustained. The areas that have been legally and voluntarily protected were never excluded from the base for AAC calculations (see *Results*). The AAC also does not exclude the wood yield from economically non-accessible forests: remote and with very low volumes of commercial wood that are unlikely to ever be extracted. Finally, the AAC calculation does not factor in the other causes of forest loss like fire, insect infestations or wind damage, which can easily be several times greater than annually extracted timber volumes. Timber resources are also lost due to so called "edge effects" and the breakdown of post logging stands, whereby after large-scale clearcuts the adjacent forest experiences water shortages and other stresses, making it more vulnerable to disturbance. As all these forest losses and protected areas are not factored in to the AAC, the wood supply is overestimated.⁶

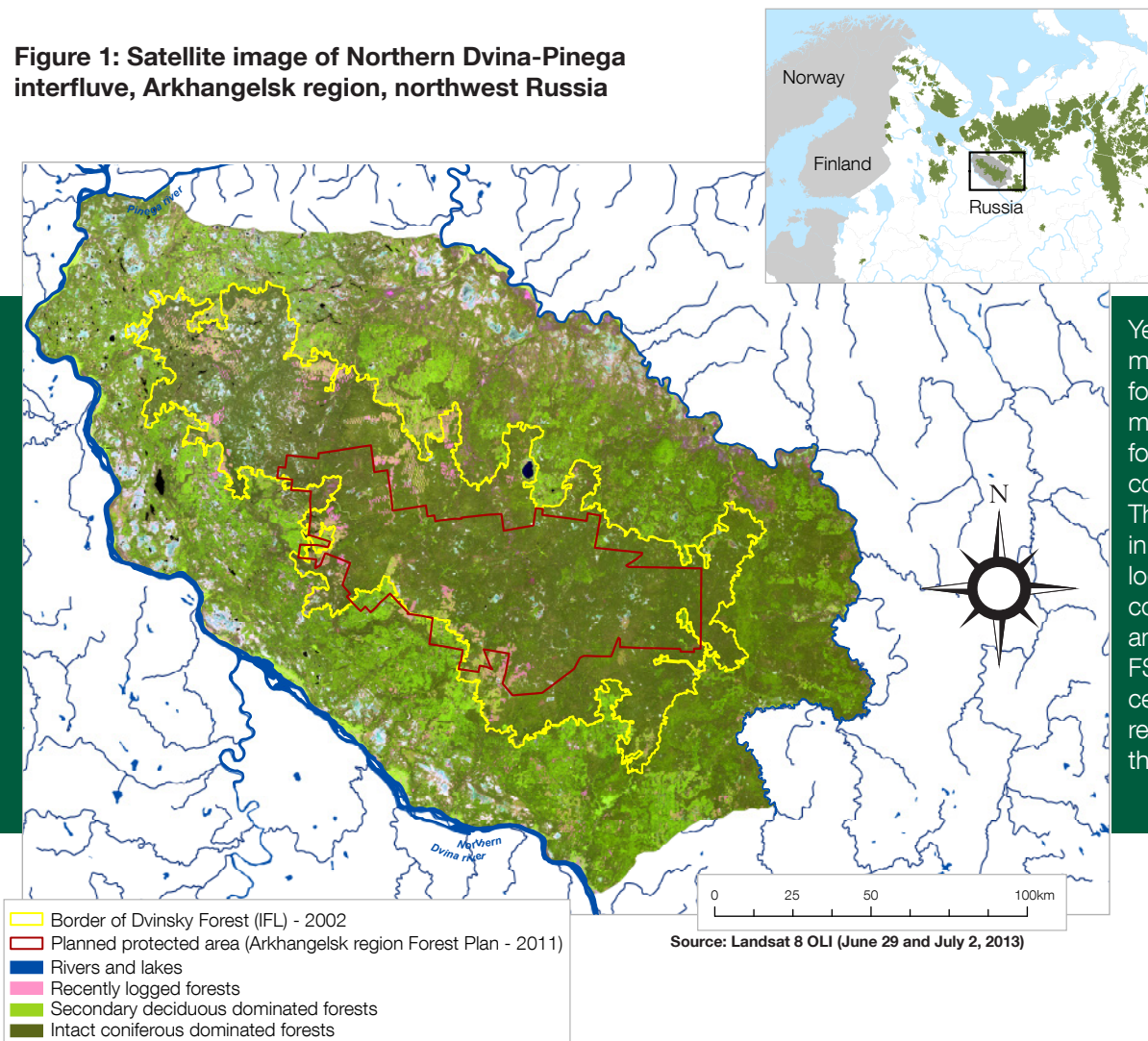
The degree to which the most economically accessible and productive coniferous taiga forests become exhausted varies by region, but in any region it became an obvious and serious obstacle for providing sustainable forest management. In recent decades the wild taiga has been developed using large-scale checkerboard clearcutting, which

has led to the fast fragmentation and degradation of remaining intact forests. Such clearcutting methods predetermined another influential process on the future of forestry – the replacement of the most productive and most accessible coniferous forests with early successional forests, dominated by deciduous trees. Typically, the clearcuts are abandoned and regenerate with fast growing hardwood tree species like birch and aspen, which are of little commercial value to Russia’s forest industry. Although the natural coniferous dominated forests will return through natural succession in approximately 120-150 years, this period is several times longer than the estimated time it would take the forest industry to consume all remaining coniferous forest resources.

Many forest companies that have been operating adjacent to or within IFLs in Russia’s northwest have already gone out of business,⁷ as they were forced to move further from their industrial infrastructure for their wood supply where the lower volumes and poorer quality wood cannot even cover the high transportation costs.

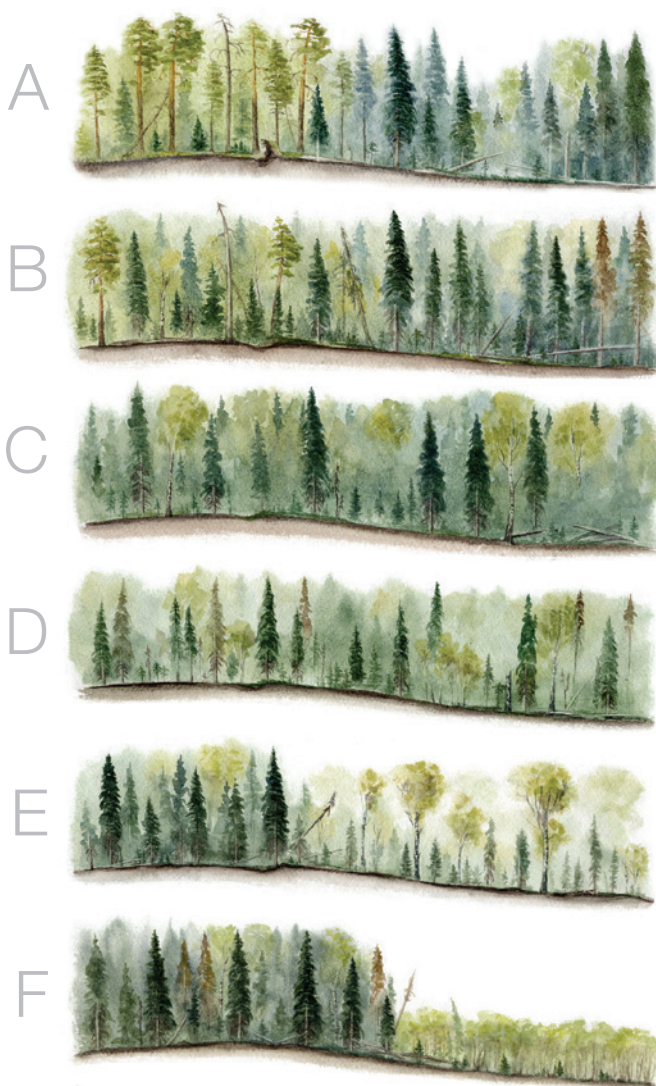
The environmental and economic crisis now facing Russia’s taiga forests has been self-inflicted by the forest industry’s use of unsustainable and destructive “wood mining” forest practices.

Figure 1: Satellite image of Northern Dvina-Pinega interfluve, Arkhangelsk region, northwest Russia



Years of “wood mining” in Russia’s forests have left the majority of remaining forest resources concentrated in IFLs. This has resulted in most industrial logging also being concentrated in IFLs and, in many cases, FSC certified. FSC certification should require protection of these IFLs.

Figure 2: 300 years of “wood mining” in the Northern Dvina-Pinega interfluve



Before the first wave of development began around 300 years ago, the wild boreal (taiga) forests of the Northern Dvina-Pinega interfluve were a great deposit of large fine-grained softwood trees, predominantly pine and spruce, as well as some larch and fir, accumulated over the long period of the forest's natural development (A).

The forestry industry was not initially interested in the predominant spruce as they were mainly logging the largest, best quality pine for shipbuilding. Once pine became nearly exhausted (B) spruce became the main resource, first being harvested through selective logging of the best trees, and later through logging of trees larger than a certain diameter.

This second approach created several other waves of boreal forest exploitation (C, D) as the diameter threshold was lowered due to the inevitable depletion of the largest trees. Eventually resources of spruce were also exhausted.

Another new wave of forest exploitation was triggered by the forestry industry's construction of the region's first pulp mills at the end of the 1930s. As the industry could now process pulpwood, demand for spruce waned and selective logging of the best trees was replaced by clearcutting only leaving unwanted tree species and very poor quality trees standing (E).

The last wave of forest exploitation started in the 1960s with the clearance of forests that had re-generated after previous logging, resulting in a complete transformation of forest landscapes, now dominated by birch and aspen (F).

Nearly every wave of historical forest development was followed by an increase in the forest disturbance rate. Massive fires and insect infestations were triggered by each stage of forest destruction and exhaustion. The most pronounced and destructive insect infestations were recorded at the end of the 19th and 20th centuries and beginning of the 21st century.

Illustration © Greenpeace/Khakimulina

DVINSKY FOREST (IFL) — A COMPREHENSIVE EXAMPLE OF “WOOD MINING” IMPACTS



The edge of adjacent 50-hectare clearcuts in the Ust-Pokshengsky LPH concession within Dvinsky Forest (IFL). The foreground was cleared in 2011 and the background in 2007. Arkhangelsk region, Russia, August 2011. © Greenpeace

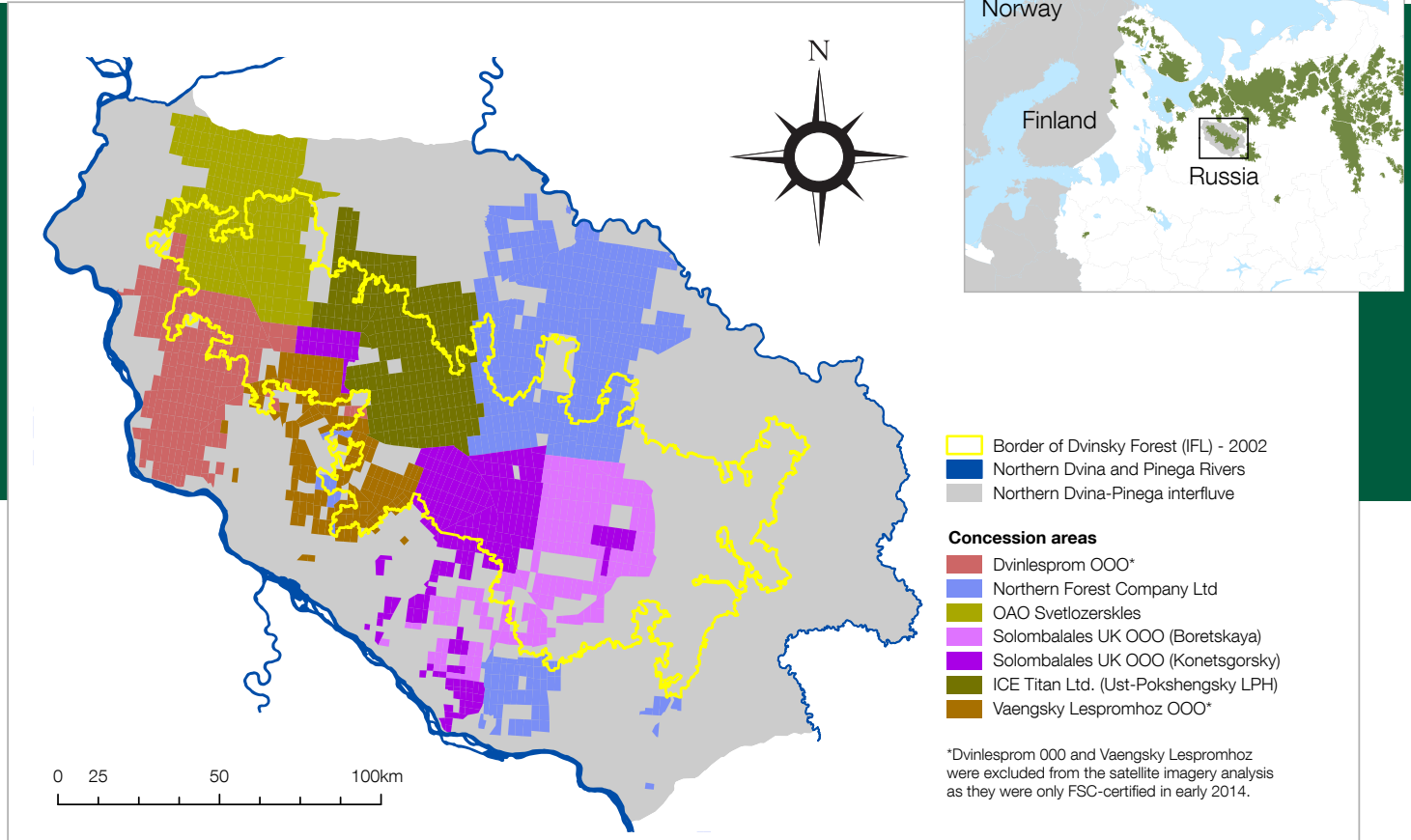
This study focuses on an area with a high concentration of companies that are currently or were formerly FSC-certified (Fig. 3) located in the Arkhangelsk region of northwest Russia – the interfluvium of the Northern Dvina and Pinega rivers (Fig. 1).

The central part of the interfluvium – Dvinsky Forest (IFL) (Fig. 1) is one of the largest non-fragmented natural/primary forests in European Russia⁸ and is well known for its high conservation values.⁹ Covering an area of just under one million hectares, the Dvinsky Forest (IFL) is also the largest IFL below the limits of the Northern Taiga vegetation sub-zone.^{10,11,12}

The Dvinsky Forest (IFL) has maintained its relative intactness due to its remoteness and inaccessibility. This forest should not be of much value to the forest industry as it mostly contains low volumes of poor quality timber, and in the last decade has also suffered significant losses from a European spruce bark beetle (*Ips typographus*) infestation (Fig. 3).¹³ Exploiting Dvinsky Forest (IFL) makes limited economic sense for the forest industry.¹⁴ However, given that forests in other more accessible and productive areas of Arkhangelsk region, particularly in the Northern Dvina-Pinega interfluvium, are being rapidly exhausted, logging companies are moving logging operations into this IFL.

The interfluvium area has a long history of forest over-exploitation¹⁵ and exemplifies the typical problems found in the transition zone between IFLs and former logged forest areas. This region, like many others, is now facing the final wave of “wood mining”. The clearcut frontier rapidly advancing towards the IFLs at the centre of the interfluvium is clearly visible from satellite images (Fig. 1). As a result of previous exploitation the most accessible and productive coniferous forests closer to rivers were replaced by early successional deciduous forests, which now occupy about 75% of the interfluvium's peripheral area (see Fig. 1).

Figure 3: An overview of former or current FSC-certified companies operating in Dvinsky Forest (IFL)



FSC ROLE IN THE NORTHERN DVINA-PINEGA INTERFLUVE FORESTS



Large decaying logs inside Dvinsky Forest (IFL) are essential habitat for many indicator and specialist species such as fungus, moss and lichen.

Arkhangelsk region, Russia, July 2009.

© Greenpeace

As a consequence of wood mining in the Northern Dvina-Pinega interfluve area (Fig. 1), the remaining Dvinsky Forest IFL has become a battleground between conservationists and the forest industry, compounded by complex social issues. The area has a history stretching back to the 1990s of many serious disputes between logging companies and environmental NGOs over which forests should be protected or developed.

FSC was introduced to this area in early 2000 as a dispute resolution platform for environmental NGOs, the forest industry and communities, and also as an attempt to improve forest management. The first FSC forest management certificate in the Northern Dvina-Pinega interfluve was granted to the Dvinskoy logging enterprise in 2000.¹⁶ Since then, the area of FSC certified forest in the interfluve has grown steadily to the point where most of the largest logging operators either already hold or used to hold FSC certificates, or are in the process of preparing for FSC certification. The main wood supply source for all of the FSC certificate holders located in the Northern Dvina-Pinega interfluve has been the Dvinsky Forest (IFL), despite the recognition by FSC of IFLs as High Conservation Value 2 and its requirement to maintain or enhance HCVs under its Principle 9.¹⁷ When FSC certification first came to the Dvinsky Forest (IFL) area, local environmental NGOs hoped that it would help to develop responsible forest management practices and thereby protect the most valuable HCVs, including IFLs. However, after an FSC presence of 14 years in the interfluve, large areas of forest within the IFL has already been destroyed (Fig. 1, Figs. 4-8)¹⁸ and, despite FSC processes initially helping stakeholders agree to legally protect the most valuable IFL areas, they still have no legal protection and are now at risk of being logged by FSC certified companies.

Two approaches have been used to achieve protection of valuable IFLs in the Northern Dvina-Pinega interfluve:

- (1) Voluntary protection - establishing moratorium agreements between logging companies and environmental NGOs and protecting valuable forests as required by FSC: and
- (2) Legal protection - initiating the process of formal legal protection for the most valuable and vulnerable areas, which is more secure, but more complicated and time consuming.

Both approaches rely on compromise between the logging companies and environmental NGOs, and in the case of the Dvinsky Forest (IFL), there has been a significant overlap of the two approaches, e.g. how the moratoria areas are moved from temporary to permanent legal protection.



A logging road in the Ust-Pokshengsky LPH concession is an example of initial fragmentation in the Dvinsky Forest (IFL), which then leads to further degradation of IFL high conservation values. Arkhangelsk region, Russia, July 2009. © Greenpeace

FSC did play a positive role in the beginning by helping to start the process for legal protection for the most valuable IFLs in the region on top of what protection is required under FSC certified managed areas. Long negotiations finally resulted in stakeholders agreeing the borders of candidate legal protected areas. This was officially recognised in December 2011, in the main regional forest planning document – the Forest Plan of the Arkhangelsk region – produced by the Ministry of Natural Resources and approved by decree of the Governor of Arkhangelsk.¹⁹ According to this document, the protected area is planned to cover the eastern part of the Dvinsky Forest (IFL), in the region farthest from the saw and pulp mills. The planned protected area covers an area of around 496,000 hectares (ha), approximately 12% of the whole interfluvium and about 50% of the Dvinsky Forest (IFL). All planning documents and official expert assessments for obtaining official legal protection have been completed. The final decision rests with the Arkhangelsk regional administration, but this could take a long time due to the complicated and slow moving bureaucracy.

Disappointingly, FSC certified companies have disregarded the 2011 Forest Plan by logging in the proposed legal protected area (Figs. 4-8). The voluntary moratorium agreements have also become ineffective, as applied cut rates and AAC are not lowered to ensure responsible and sustained forest use outside of these moratorium areas (Table 2). Companies are following state-set unsustainable AAC rates; however, this results in the certified companies violating FSC's Principle 5, which requires harvest rates to be at or below a level that can be permanently sustained. As a result, FSC certified companies are or have been breaking moratorium agreements through extracting more and more wood from IFLs slated for legal protection and/or that are voluntarily protected.

An overview of former or current FSC-certified companies operating in Dvinsky Forest (IFL)

Greenpeace conducted a comprehensive analysis, using satellite imagery,²⁰ of logging trends from 2002 to 2013 in five separately operated FSC forest management (FM) certified areas (Table 1) in the interfluvium area between the Northern Dvina and Pinega Rivers in Arkhangelsk Region, northwest Russia, including the Dvinsky Forest (IFL). Over this period, all five companies held FSC certificates, although only one company, Northern Forest Company Ltd, currently holds a valid FSC FM certificate.²¹ The FM certificate of ICE Titan Ltd (inc. Ust-Pokshengskiy LPH OAO) expired in 2012 after

five years of validity, but the company manages FSC controlled wood (CW) under its Chain-of-Custody (CoC) certificate²² and is preparing to reapply for FM certification. Solombalales UK OOO (Boretskaya) and Solombalales UK OOO (Konetsgorsky) had their certificates suspended in July 2012,²³ and the FM certificate for OAO Svetlozerskles was also terminated in July 2012.²⁴ As there is no report detailing why OAO Svetlozerskles' FSC certificate was terminated, in Greenpeace's opinion it could have been due to the key issues cited in this report, as well as to the closure of the OJSC Solombala Pulp-and-Paper Mill at the beginning of 2013.

FSC's accredited certifying body, NEPCo (a partner of Rainforest Alliance), has finally taken a step in the right direction by suspending Solombalales UK OOO (Konetsgorsky) and terminating Solombalales UK OOO (Boretskaya) for many issues identified in this report including: not managing sustainable yields, applying an inaccurate AAC calculation and poor protected areas and species at risk management, as well as not having long term planning objectives.²⁵ However, given these violations and that these companies are threatening IFLs, it is questionable how these operations were able to obtain FSC certification in the first place.

Furthermore, despite ample evidence that forest resources in the Northern Dvinsky-Pinega interfluvium have nearly been exhausted, and that the "wood mining" model will lead to the industry's collapse (Table 2), FSC has continued to grant certificates. In early 2014, two new FSC FM certificates were issued to Dvinlesprom OOO and Vaengsky Lespromhoz OOO,²⁵ and they also source most of their wood supply from the Dvinsky Forest (IFL) (Fig.3). As these two certificates were only granted recently, they were not included in the Greenpeace analysis. This means there are currently three Forest Management (FM) and one Controlled Wood (CW) FSC-certified operations that are destructively logging in the Dvinsky Forest (IFL).

Table 1: Former or current FSC-certified companies operating in Dvinsky Forest (IFL) 2002-2013

	ICE Titan Ltd (incl.Ust- Pokshengsky LPH)	OAO Svetlozerskles	Solombalales UK OOO (Konetsgorsky)	Solombalales UK OOO (Boretskaya)	Northern Forest Company Ltd
FSC certificates #:	RA-COC-001718; SW-CW-001718	GFA-FM/COC- 001114	RA-FM/COC- 006014	RA-FM/COC- 006011	SW-FM/COC- 004967
FSC licence codes:	FSC-C016977	FSC-C018630	FSC-C107206	FSC-C107205	FSC-C095126
Certification Status:	CW – valid FM - expired	Terminated	Suspended	Suspended	Valid
Certifying body:	Rainforest Alliance	GFA Consulting Group	Rainforest Alliance	Rainforest Alliance	Rainforest Alliance
FSC area covered by this case study:	Managing controlled wood	167258 ha	185570 ha	187981 ha	649051 ha
FSC products:	Saw logs; Pulpwood; Veneer logs, Fuel wood	Rough wood	Saw logs, pulpwood	Saw logs, pulpwood	Saw logs; pulpwood; veneer logs, Fuel wood

OBJECTIVES OF THE ANALYSIS

The objectives of the case study's analysis were 1) to illustrate the current condition of the Dvinsky Forest (IFL) and, 2) to estimate how many years the existing forest exploitation model could continue, based on the current allocation of forest resources, current logging methods and if logging-related forest loss continues at the same rate as 2002-2013.

The analysis was based on the satellite imagery interpretation and detection of the remaining coniferous dominated forests - the main harvesting target within the Northern Dvina-Pinega interfluve - and forest loss due to clearcutting and detectable clearcut edge effects (see Annex 1). The rate of coniferous dominated forest loss within all formerly or currently FSC certified concession areas was calculated based on forest area. The analysis could not take in to account the variations in standing timber volumes, thus it was assumed that standing volumes were more or less even across the remaining coniferous forests. As the forest industry in the interfluve is mainly consuming coniferous forest resources, the rate of coniferous forest loss was used as the main indicator of the unsustainability of forest management in the region.

RESULTS

According to our calculations the major logging activity in the interfluve area is happening within the Dvinsky Forest (IFL). More than 80% of the softwood harvested annually within the Northern Dvina-Pinega river interfluve is sourced from Dvinsky Forest (IFL), (Fig. 1, Figs. 4-8).

Table 2, Row 1 indicates that the majority (up to 91%) of coniferous forest resources within concession areas are concentrated within IFLs, and consequently the majority of clearcuts (up to 87% - see Row 5) are also concentrated within IFLs. The Row 2 scenario projects the number of years a company is expected to be operational if all forest resources are exhausted (the whole pie - coniferous forests (green), plus fragmented, scattered, low commercial value forests (grey) and slated protected areas). The Row 3 scenario projects length of operability if coniferous and fragmented, scattered, low commercial value forests are logged, but the officially planned protected areas are respected and not logged. The Row 4 scenario projects how long the companies would be viable if they harvested the coniferous forest resources according to FSC's Principles and Criteria, including not logging the IFL at all. Note: projected years are, in reality, likely to be lower due to some methodological limitations (see Annex 1).

In summary, Table 2 shows that there is only enough coniferous forest outside the IFLs to supply four out of the five companies operating in the Northern Dvina-Pinega interfluve for, at best, another 8-13 years, and probably even less as this does not factor in the economic costs for companies to gain access to this remote area. The estimate of 46 years for Northern Forest Company Ltd does not factor in the wood supply needed to support the company's main factory, which is currently under construction.

Table 2: Results based on satellite imagery interpretation of the level of coniferous forest resources and clearcuts in the Dvinsky Forest (IFL) of former or current FSC certificate holders, and estimated operational longevity based on 3 different forest exploitation/management scenarios if cut rates remain the same as 2002-2013.

Companies formerly/ currently FSC certified operating in Dvinsky Forest (IFL)	ICE Titan Ltd. (incl. Ust-Pokshengsky LPH)	OAO Svetlozerskles	Solombalales UK OOO (Konetsgorsky)	Solombalales UK OOO (Boretskaya)	Northern Forest Company Ltd
<p>1 Distribution of remaining coniferous forests within leased area as of 2013:</p> <ul style="list-style-type: none"> - green - within Dvinsky Forest (IFL) - grey - outside Dvinsky Forest (IFL) 					
<p>2 Duration (no. of years) of forest exploitation where all coniferous forests within the leased area (without exceptions) will be logged.</p>	64	76	84	85	81
<p>3 Duration (no. of years) of forest exploitation where forests within the leased area will be partially logged with no logging in the planned protected area.</p>	45	76	22	15	71
<p>4 Duration (no. of years) of forest exploitation where forests within the leased area will be partially logged with no logging of Intact Forest Landscapes in compliance with FSC's P&C.</p>	9	13	9	8	46
<p>5 Share of clearcuts within the leased area 2002 – 2013:</p> <ul style="list-style-type: none"> - red - within Dvinsky Forest (IFL) - grey - outside Dvinsky Forest (IFL) 					

KEY FINDINGS OF THE SATELLITE ANALYSIS & WOOD MINING IMPACTS

The key findings drawn from this study (Fig. 2, Figs. 4-8, and Table 2), and the impacts of the wood mining model employed, reveal that five (former or current) FSC-certified companies that are included in this study and operating in the Dvinsky Forest (IFL) have caused/are causing:

1) Destruction and fragmentation of IFLs by:

- a. Using IFLs as the main source of wood supply. The proportion of logging within IFLs was found to be very high for all studied areas: from 70% to nearly 90%.
- b. The borders of planned legal protected areas, as well as voluntary forest protection agreements are not being respected. The companies are currently clearcutting inside these areas.
- c. Outside agreed legal and/or voluntary IFL protected areas IFL values are not being maintained or enhanced due to being clearcut or its values being damaged by fragmentation.

2) The loss of productive coniferous forests by:

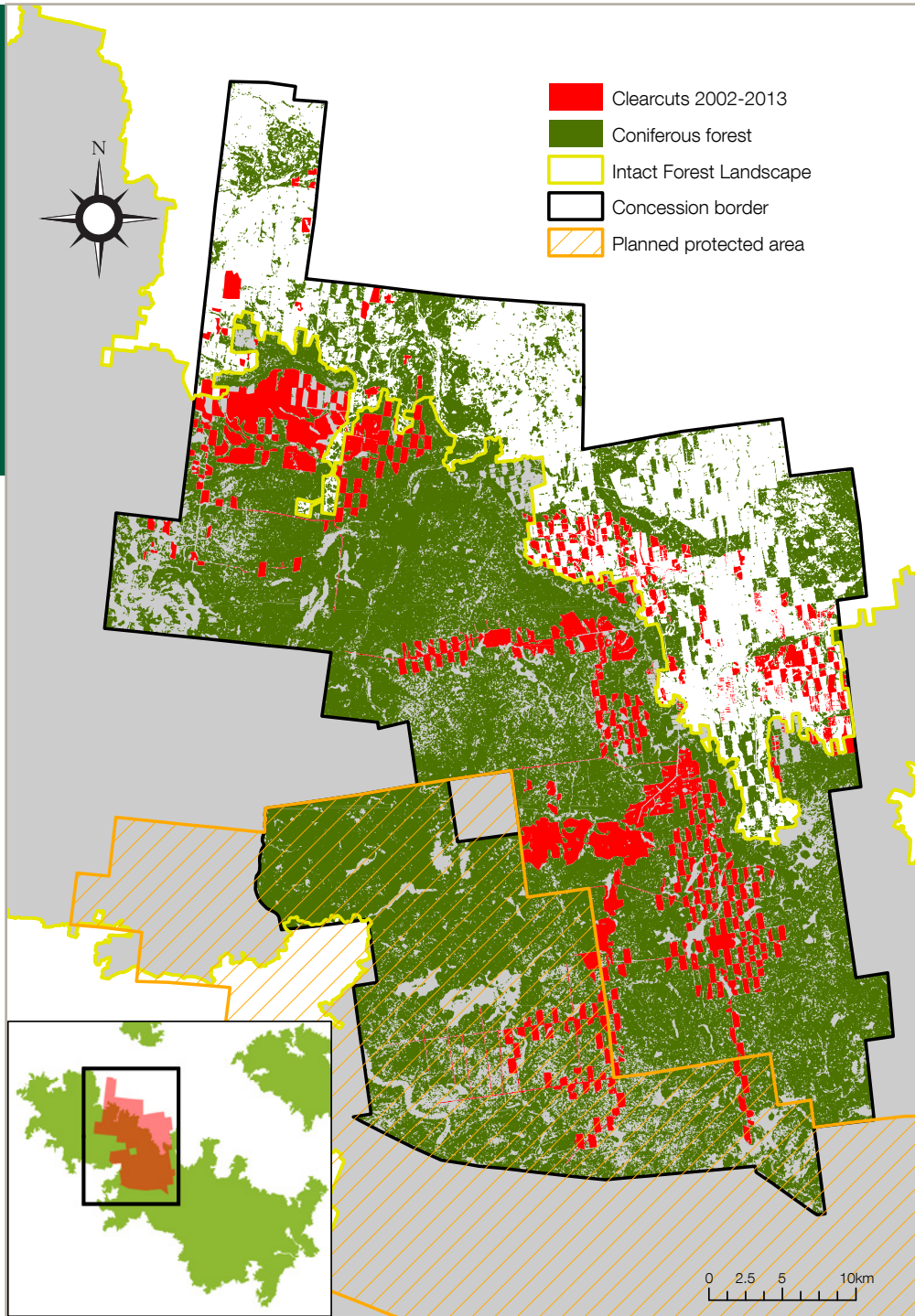
- a. Employing annual cut-rates that overestimate wood supply by not factoring in forest losses or protected areas. Using predominantly large-scale checkerboard clearcuts which do not align with the natural landscape contours.
- b. Employing no post-harvest silvicultural management that is resulting in forest stands dominated by commercially invaluable, deciduous tree species.

3) A Future wood supply collapse by:

Harvestable volumes not being based on the actual harvestable area and significantly exceeding a level that can be permanently sustained. The annual harvesting rate based on the AAC calculation does not exclude wood yield, which is inaccessible, from existing or planned protected areas, or lost due to fire, insects, wind-throw, or other reasons like the “edge effect”.

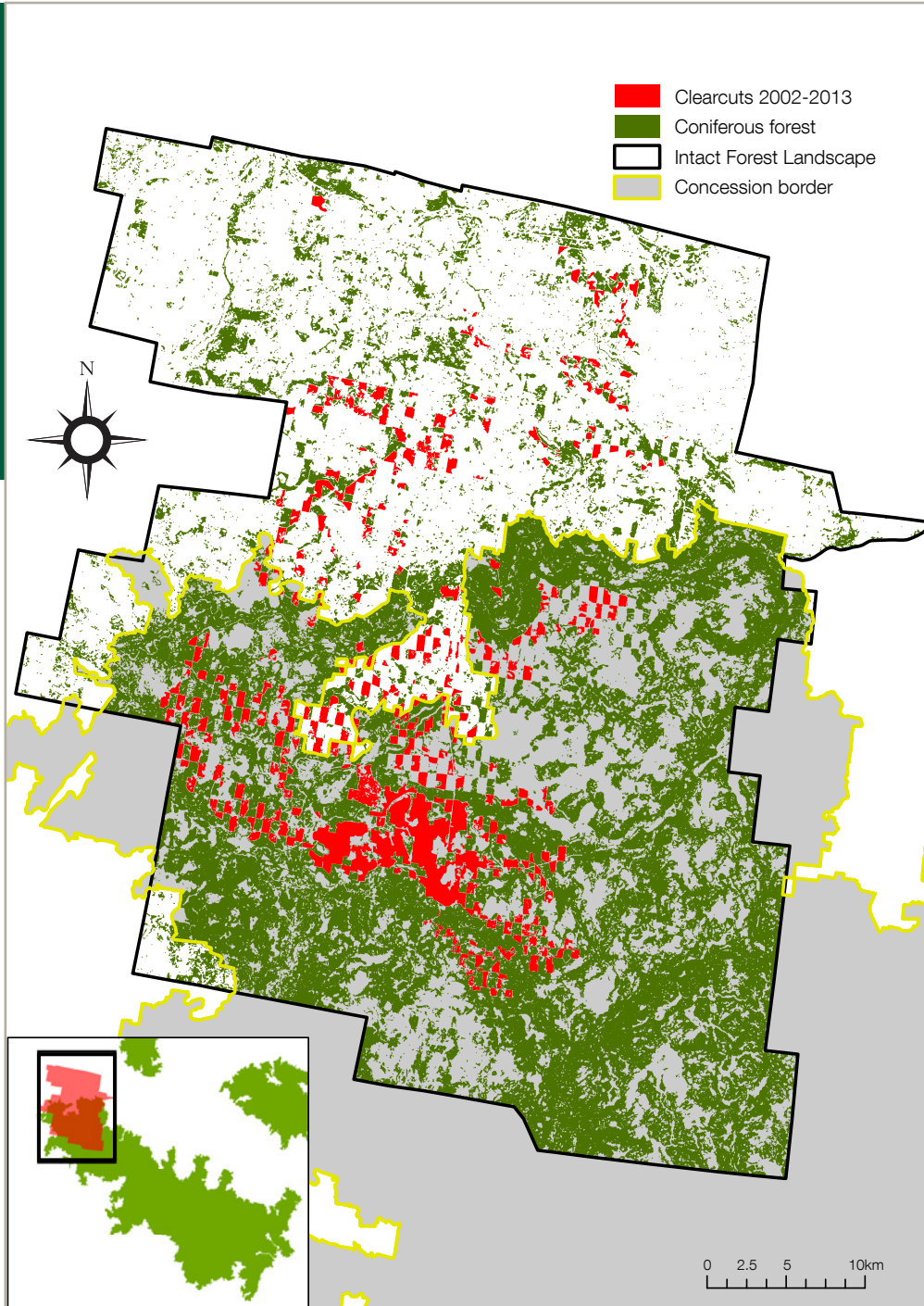
These findings demonstrate non-compliance with several of the FSC principles, and criteria and indicators of the Russia’s Forest Management standard (namely under Principle 5, 6, 7 and 9, see Annex 2) linked to requirements for managing sustainable yields, post-harvest silviculture management, protection and/or maintenance of HCV forests.

Figure 4: Logging by ICE Titan Limited (incl. Ust-Pokshengsky LPH), 2002-2013



FSC certificates #:
RA-COC-001718,
SW-CW-001718

Figure 5: Logging by OAO Svetlozerskles, 2002-2013



FSC certificate #:
GFA-FM/COC-001114

Figure 6: Logging by Solombalales UK OOO (Konetsgorsky), 2002-2013

FSC certificate #:
RA-FM/COC-006014

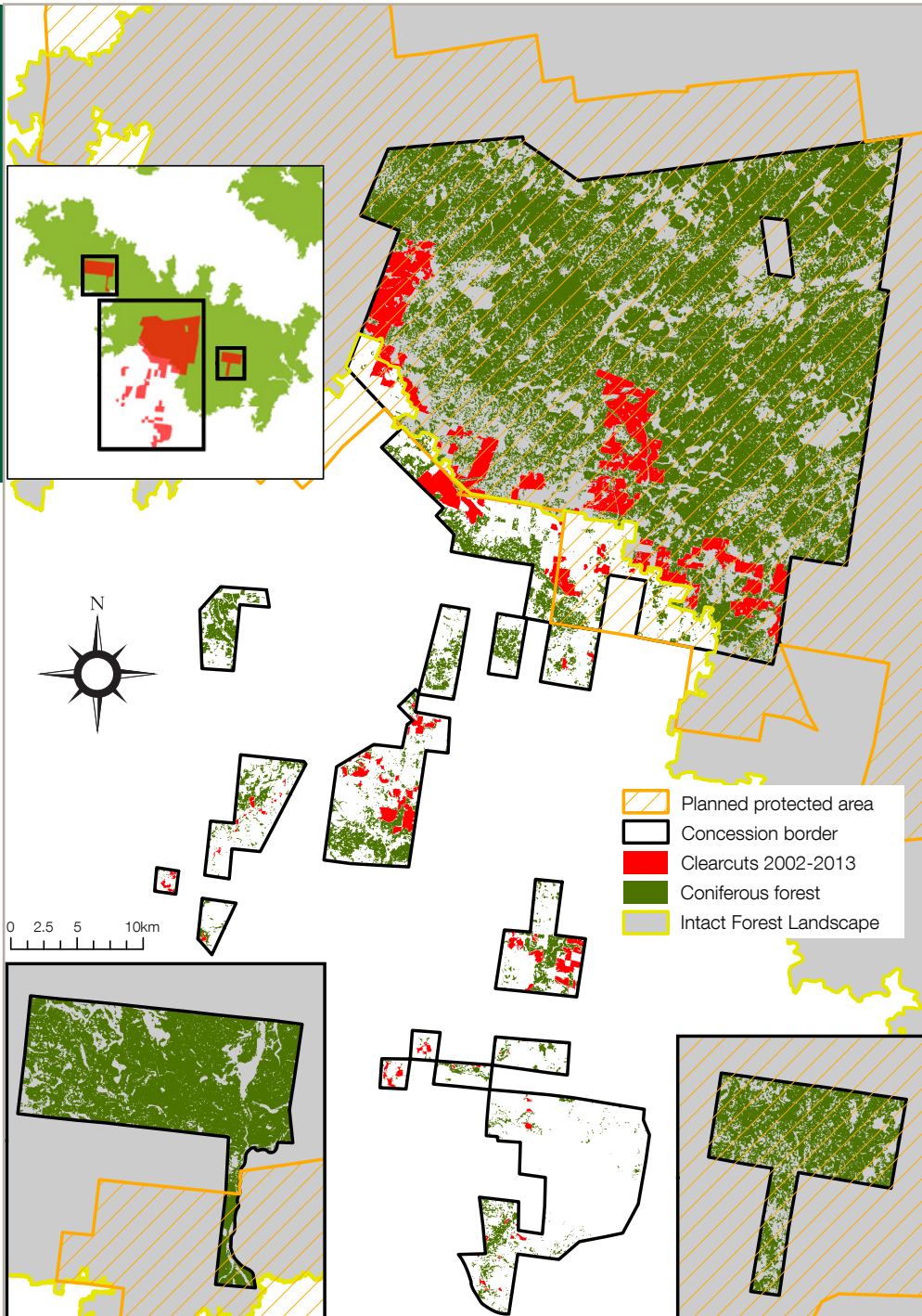
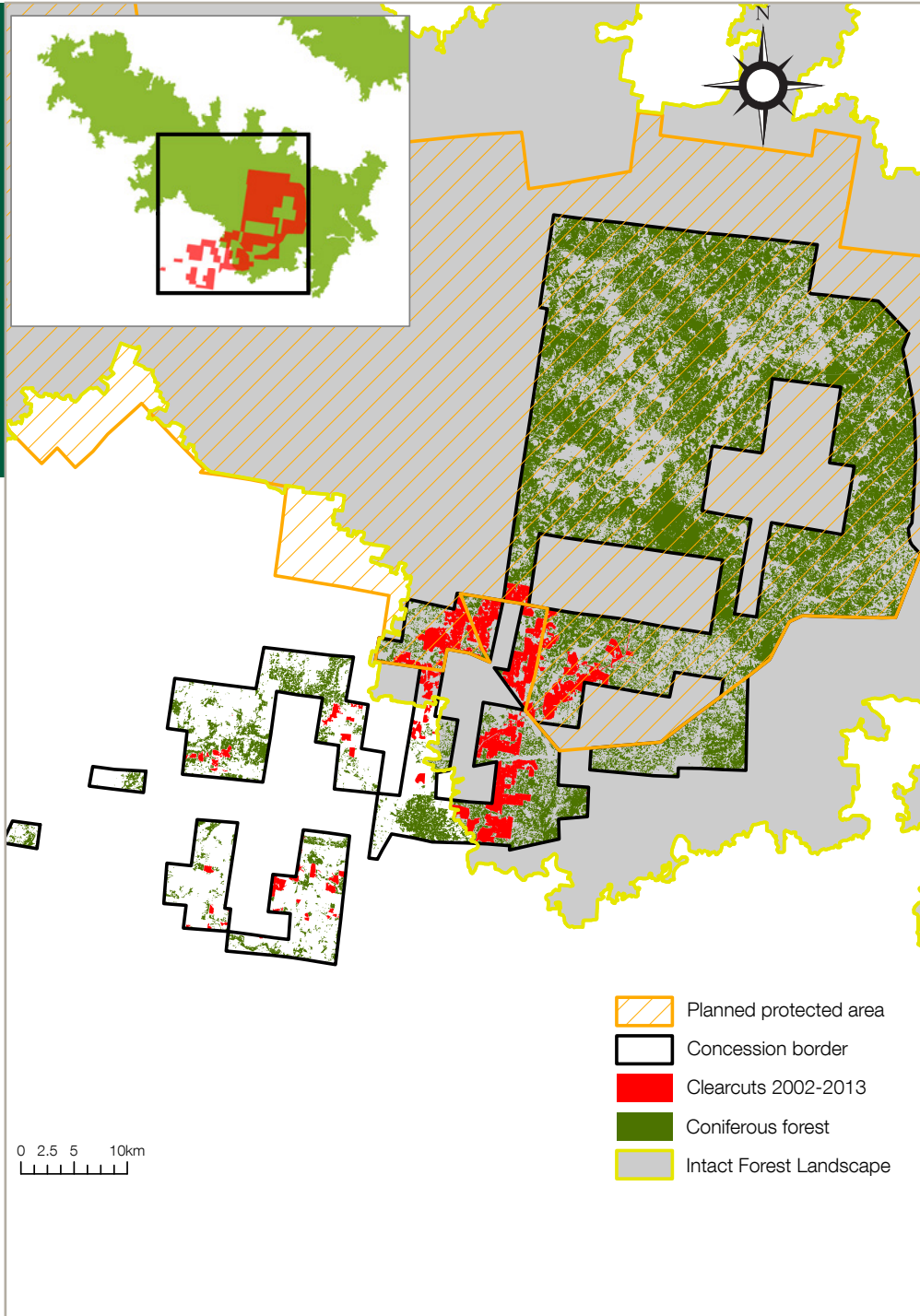
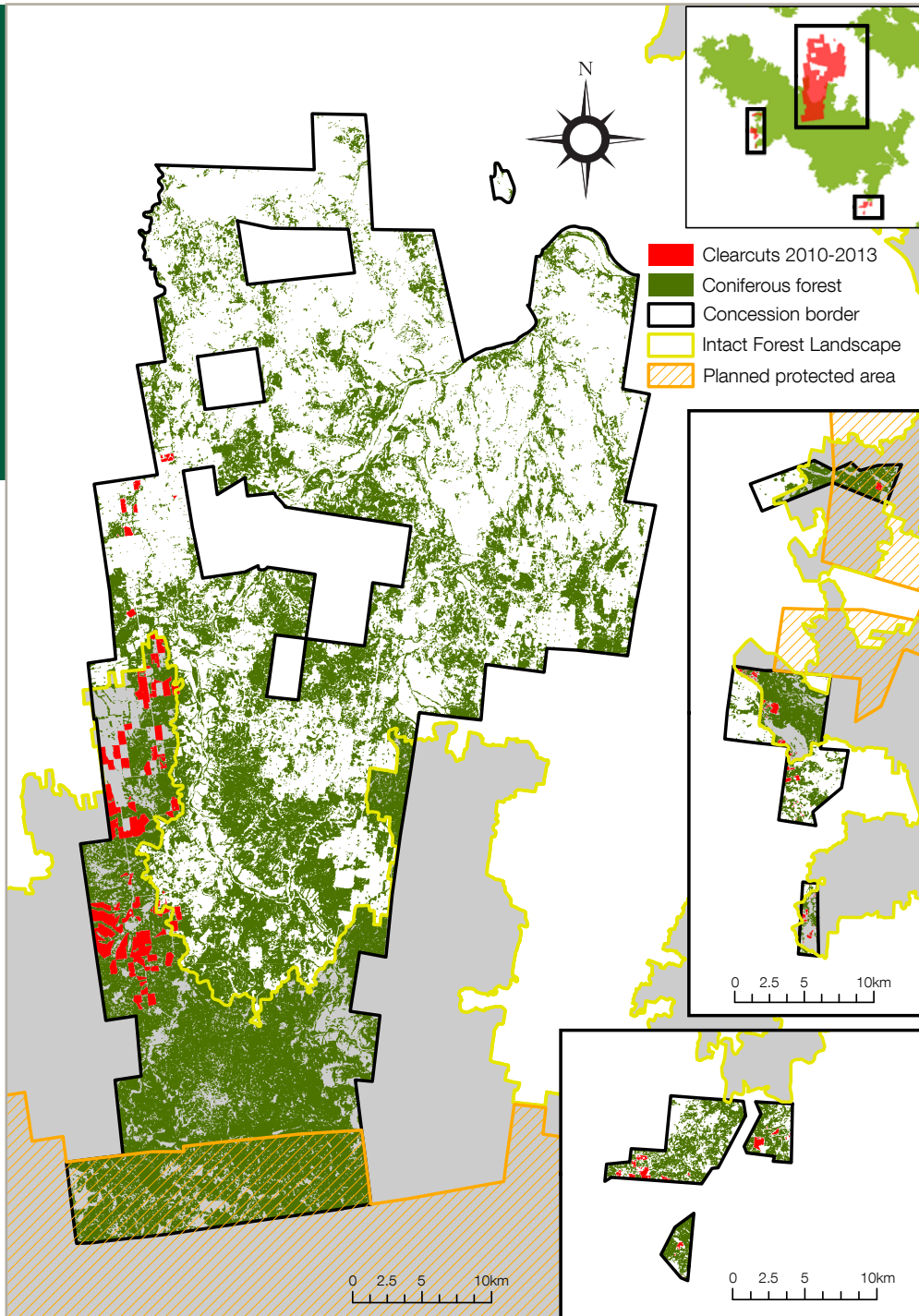


Figure 7: Logging by Solombalales UK OOO (Boretskaya), 2002-2013



FSC certificate #:
RA-FM/COC-006011

Figure 8: Logging by Northern Forest Company Ltd, 2010-2013



FSC certificate #:
SW-FM/COC-004967

FSC QUALITY CONTROL, MONITORING AND ENFORCEMENT



Transformed landscape near Dvinsky Forest (IFL) in the Northern Forest Company Ltd. concession area. Arkhangelsk region, Russia, August 2011. © Greenpeace

These poor performing FSC-certified operations in the Northern Dvina-Pinega interfluve call into question the quality control practices of the FSC system and the oversight and enforcement by FSC accredited Certification Bodies (CBs). NEPCon, a certification partner of Rainforest Alliance,²⁶ has taken a step in the right direction by suspending both Solombalales UK OOO (Konetsgorsky) and Solombalales UK OOO (Boretskaya) for many issues identified in this report including: not managing sustainable yields, applying an inaccurate AAC calculation, using excessively large clearcuts that are not aligned with the landscape topography and poor protected areas, and poor HCV data collection as well as not having long term planning objectives.²⁷ However, given the severity of these violations and that the fact that these practices threatened IFLs from the beginning, it is questionable how these operations were able to obtain FSC certification in the first place. Additionally, since 2009 but prior to receiving forest management (FM) certification both companies sourced controlled wood from the Northern Dvina-Pinega interfluve with the approval of the certifier - GFA Consulting Group.²⁸ Additionally, NEPCon/Rainforest Alliance also issued certificates to Northern Forest Company Ltd in 2010 and Dvinlesprom and Vaengsky in 2014 despite facing the same issues highlighted in the report.

ICE Titan has also been managing and sourcing controlled wood from the Northern Dvina-Pinega interfluve since 2005.²⁹ ICE Titan's FSC risk assessment, approved by NEPCon/Rainforest Alliance, for its "controlled" sourcing identifies "unspecified risk" for illegal logging, wood harvested in violation of civil or traditional rights and wood threatening HCVs.³⁰ NEPCon/Rainforest Alliance states that ICE Titan is only sourcing controlled wood from outside of the agreed moratorium areas. This does not exclude the fact, however, that "wood mining" practices are being widely used elsewhere in ICE Titan concessions, further destroying valuable forests including Dvinsky Forest (IFL). Finally, as there is no report detailing why OAO Svetlozerskles FSC's certificate was terminated, in Greenpeace's opinion, it could have been due to the key issues cited in this report, as well as to the closure of the OJSC Solombala Pulp-and-Paper Mill at the beginning of 2013.

FSC and ASI must act immediately to ensure its accredited certification bodies' performance is robust and credibly verifying that FSC's Principles and Criteria, and particularly requirements linked to managing sustainable yields and maintenance of HCVS, are truly being managed by FSC-certified forest operations.

CONCLUSION – THE FSC PARADOX



A temporary railway constructed for the transport of cut logs in the Solombabales (Konetsgorsky) concession encroaching into Dvinsky Forest (IFL), Arkhangelsk region, Russia, August 2007.
© Greenpeace

FSC claims that it only certifies well managed forest practices while, on the other hand, companies that have for many years enjoyed the market privileges of FSC certification have also been found to have been destroying IFLs and in breach of FSC Principles and Criteria. Our research, as outlined in this report, also shows that it is inevitable that wood mining mismanagement will bankrupt those companies who are dependent on coniferous softwood resources.

FSC's ability to transform and deliver well managed forests in this region of Russia has so far failed. As Russia is second only to Canada in having the largest area of FSC certified forest in the world (almost 38.5 m ha), FSC appears to have been prioritising quantity (of certificates) over quality of forest management by tolerating breaches of its own standards.³¹ Logging companies routinely engage in "wood mining" even though FSC's Russian Forest Management Standard has requirements for managing sustainable harvest levels and developing plans to ensure the forests are well managed over the long-term. Moreover, the FSC certified companies are degrading IFL HCV2 forests and logging protected areas that are either slated for legal protection or supposed to be protected as a part of FSC requirements. Finally, FSC is allowing companies to clearcut and destroy irreplaceable IFLs, despite the fact that FSC requires IFL values to be maintained. If FSC does not set clear thresholds for IFL protection to ensure that companies comply with its standards, then its logo and its credibility will become diluted and serve as worthless "greenwash", indistinguishable from the other weak certification schemes like PEFC. This is a clear example of the FSC system's failure to protect forests in Russia. FSC must act and turn this situation around immediately.

KEEPING THE FSC CREDIBLE

Along with other FSC members across its chambers, Greenpeace is working to achieve the following key improvements in FSC operations and procedures so that the environmental and social values of forests are maintained under the FSC seal of approval.

FSC members, certification bodies, stakeholders and consumers should hold the FSC accountable to ensure its standards and policies are strengthened, consistently applied and met to ensure that the ecological and social values of forests managed under the FSC seal of approval are maintained.

Until adequate global protection of IFLs is achieved:

- 1) The FSC should only certify logging operations in HCV2/IFL areas in a forest region after:
 - a) A comprehensive and representative protected area network has been established;
 - b) Priority has been given to small-scale and low-impact community forest use wherever appropriate; and
 - c) The core area of the IFL is protected and in the buffer around the core roadbuilding and other fragmentation impacts are avoided or minimised so that IFL values (see introduction) are not being harmed.
- 2) FSC must broaden its services to include more forest conservation, protected areas and ecosystem services (e.g., water, soil stability, carbon storage) certification and promote restoration of degraded IFLs. Options to support HCV2 and IFL protection such as reduced certification fees and/or a fund that supports HCV2 protection should also be considered.

We urge FSC members, stakeholders and consumers to call on the FSC to increase its role in IFL protection. By doing so the FSC will broaden its reach and influence, enable the FSC to embrace a full range of forest conservation management measures, continue to be the leader in global forest certification, and be a label consumers can trust.

To review Greenpeace's complete set of recommendations for strengthening the FSC system and the FSC's progress, please visit: www.greenpeace.org/international/FSC-at-risk

ENDNOTES

- 1** Approximately 25% of the current global forest cover is made up of Intact Forests Landscapes (IFLs). The technical definition of an IFL is defined as a territory within today's global extent of forest cover which contains forest and non-forest ecosystems minimally influenced by human economic activity, with an area of at least 500km² (50,000 ha) and a minimal width of 10km (measured as the diameter of a circle that is entirely inscribed within the boundaries of the territory). <http://intactforests.org/>
- 2** Joint NGO statement on IKEA in Karelia - Protect the Forest - Sweden, Karelia Regional Nature Conservancy (SPOK), Greenpeace Russia and Friends of the Earth Sweden:
http://spok-karelia.ru/wp-content/uploads/2012/12/joint-statement-final-signed_eng.pdf
- 3** Hansen MC, Potapov PV, Moore R, Hancher M, Turubanova SA, Tyukavina A, Thau D, Stehman SV, Goetz SJ, Loveland TR, Kommareddy A, Egorov A, Chini L, Justice CO & Townshend JRG (2013). High-resolution global maps 21st-century forest cover change. *Science*, Nov. 15, 2013, Vol 342, 6160.
Map Links: <http://google-latlong.blogspot.co.uk/2013/11/mapping-worlds-deforestation-over-time.html>; <http://earthenginepartners.appspot.com/science-2013-global-forest>
http://www.fsc.ru/upload/FSC_Russia_all_IFL_300.pdf. Translation of document title and legend: 'Intact forest landscapes within the borders of FSC certified and forest areas in the process of FSC certification in Russia as of 1st October 1, 2013'. Legend Title: Legend, legend box classification: grey - provincial borders, 1st legend subtitle: IFLs within FSC certified forests and forests in the process of FSC certification, light purple box: in process of FSC certification; dark purple box: valid FSC certificates; red box: FSC suspended certificates; 2nd subtitle: Other FSC certified forests and forest in the process of certification (not in IFLs); light blue: in process of FSC certification; green box: valid FSC certificates; dark blue box: FSC suspended certificates.
- 4** HCV 2: Globally, regionally or nationally significant large landscape level forest areas. According to the Russian National FSC Standard, the HCV 2 category (second part of article a) is a forest area that "is part of a large forest landscape minimally disturbed by human agency (or contains such a landscape)". Currently the HCV 2 category at the international and national levels corresponds to the concept of intact forest landscapes (IFL) – the term proposed by Global Forest Watch Russia. The detailed maps of IFLs can be found in the Atlas of Russia's Intact Forest Landscapes (Aksenov *et al.*, 2002; 2003; <http://www.forest.ru/rus/publications/intact/>). Page 122. FSC Forest Stewardship Council Standard for the Russian Federation. FSC code: FSC-STD-RUS-V6-1-2012 Russia Natural and Plantations EN Version 6-01. Pre-approved by the Coordination Council of the Russian National FSC Initiative December 25, 2007 with amendments approved June 6, 2010 with amendments approved February 28, 2012. Accredited by FSC International November 11, 2008 with amendments approved October, 2012.
- 5** Bartalev SA, Ershov DV, Isaev AS, Potapov PV, Turubanova SA & Yaroshenko A Yu (2004). *Russia's Forests Dominating Forest Types and Their Canopy Density*, Scale 1 : 14 000 000, Moscow, 2004.
<http://www.forestforum.ru/info/pictures/engmap.pdf>
- 6** Ministry of Natural Resources of the Russian Federation, Order June 8, 2007 No. 148 .On approving the procedure for calculation of the felling area. In accordance with Article 29 of the Forest Code of the Russian Federation (Collection of Laws of the Russian Federation, 2006, N 50, art. 5278) order: Approve the procedure for the calculation of annual allowable cut. Minister Yuriy Trutnev. Registered with the Ministry of Justice on July 2, 2007 No. 9750. <http://www.forestforum.ru/upload/upload/AAC.doc> (Only in Russian);
- 7** <http://www.dvinainform.ru/society/2012/10/19/10442.html>; <http://www.pomorie.ru/news/konecgorskiy-lespromhoz-sobirayutsya-zakrivat>
- 8** Yaroshenko A, Potapov P and Turubanova S (2001). *The Last Intact Forest Landscapes of Northern European Russia*. Greenpeace Russia, Global Forest Watch.
'Landscape and Biological Diversity on the Watershed between the Northern Dvina and Pinega Rivers'. Glushkovskaya NB, Zagidullina AT, Korepanov VI, Kotkova VM, Kushnevskaia EV, Mirin DM, Stolpovsky AP & Filippov BJ (2013). St. Petersburg., 2013. - 116. Scientific editors: AT Zagidullina. VM Kotkova. WWF-Russia (www.wwf.ru) and Barents Protected Area Network (BPAN) - www.bpan.fi
http://www.wwf.ru/data/forests/dpm_site.pdf (In Russian with English summary)
- 9** Ibid.
- 10** The taiga is found throughout the high northern latitudes, between the tundra, and the temperate forest, from about 50°N to 70°N, but with considerable regional variation.
- 11** Precise boundaries of Dvinsky forest were defined in 2002 as part of the project on mapping the Intact Forest Landscapes of Russia. Considering the ecological value of the area, the boundary of Dvinsky forest was mapped with the highest accuracy possible (using satellite imagery classification and field investigations). The result of this mapping project (Atlas of Russia's Intact Forest Landscapes (IFL), published in 2002) is referred to in the Russian National FSC standard (FSC-STD-RUS-V6-1-2012), according to which all Intact Forest Landscapes (including Dvinsky Forest) are equated to the 2nd type of High Conservation Value Forest (HCVF-2).
- 12** <http://intactforests.org/>
- 13** Aakala T & Kuuluvainen T (2010). 'Summer droughts depress radial growth of *Picea abies* in pristine taiga of the Arkhangelsk province', northwestern Russia – *Dendrochronologia*.
- 14** Yaroshenko A *et al.* (2001) op cit.

- 15** Kuznetsov NA (1912). Dvina spruce forests. - Forest Journal 10, 1165-1204.
- 16** Tysiachniouk MS (2012). Transnational governance through private authority. The case of the Forest Stewardship Council in Russia. Wageningen Academic Publishers, The Netherlands, 2012.
- 17** FSC Principles and Criteria for Forest Stewardship: FSC-STD-01-001 (version 4-0) EN. Approved 1993. Amended 1996, 1999, 2002. <https://ic.fsc.org/principles-and-criteria.34.htm>.
- 18** 'Intact Forest Landscapes (IFLs) - Current State and Changes since 2000': Greenpeace Russia, University of Maryland, Transparent World, World Resource Institute - 2014. (Unpublished).
- 19** Forest plan of Arkhangelsk region. Approved by the decree of the Governor of Arkhangelsk region on December 20, 2011 # 175: <http://dvinaland.ru/files/laws/175u.zip>
- 20** Satellite imagery and analysis used is detailed in Annex 1 of this report.
- 21** Rainforest Alliance Forest Management 2013 Annual audit Report for: Northern Forest Company Limited In Arkhangelsk, Russia. Report finalised Jun 15, 2013. Audit dates: March 4-7, 11-12 2013. Audit managed by NEPCon, NEPCon OOO 163002 Office 312, Uritskogo st.1, Arkhangelsk, Russia.
- 22** ICE Titan Ltd Chain-of-Custody Risk Assessment Public Summary Report. Rainforest Alliance SmartWood Program. Districts, including countries covered with this risk assessment*: Russia: North-West Federal District, Central Federal District, Volga Federal District. Date of risk assessment: December 2, 2011. ICE Titan CoC risk assess pubsum Dec 11. pdf: <http://fsc.force.com/servlet/servlet.FileDownload?file=00P400000094lxNEAQ> as last seen June 17, 2014.
- 23** Rainforest Alliance Forest Management 2013 Annual audit Report for: Solombalales UK (Konetsgorskaya) LLC In Arkhangelsk region, Russia. Report finalised February 21, 2014. Audit dates: January 24, 27-28 2014. Audit managed by NEPCon. <http://info.fsc.org/details.php?id=a0240000007Sv2AAC&type=certificate&return=certificate.php> Information from 2014/06/17 - 12:28 UTC
Rainforest Alliance Forest Management 2013 Annual audit Report for: Solombalales UK (Boretskaya) LLC In Arkhangelsk region, Russia. Report finalised February 21, 2014. Audit dates: January 20-24, 27-28, 2014. Audit managed by NEPCon.
- 24** <http://info.fsc.org/details.php?id=a0240000007SvuTAAS&type=certificate&return=certificate.php> Information from 2014/06/17 - 12:29 UTC.
<http://info.fsc.org/details.php?id=a0240000005sV75AAE&type=certificate&return=certificate.php>: Certification status listed as terminated. Information from 2014/06/17 - 12:23 UTC
- 25** Rainforest Alliance Forest Management Certification Assessment Report for: OOO "Dvinlesprom" In Arkhangelsk region, Russia.
Rainforest Alliance Forest Management 2013 Annual audit Report for: Solombalales UK (Boretskaya) LLC In Arkhangelsk region, Russia.
- 26** Rainforest Alliance Forest Management Certification Assessment Report for: Vaengskiy Lespromhoz LLC In Arkhangelsk region, Russia. Report finalised February 10, 2014. Audit managed by NEPCon OOO. <http://info.fsc.org/details.php?id=a0240000008QuQJAA0&type=certificate&return=certificate.php> Information from 2014/06/17 - 12:32 UTC
Rainforest Alliance Forest Management Certification Assessment Report for: OOO "Dvinlesprom" In Arkhangelsk region, Russia. Report finalized January 25, 2014. Audit managed by NEPCon OOO.
<http://info.fsc.org/details.php?id=a0240000008TmSwAAK&type=certificate&return=certificate.php> Information from 2014/06/17 - 12:33 UTC.
- 27** http://www.nepcon.net/394/English/Certification/Certification_services/ISO_certification/Partners_in_certification/
- 28** Rainforest Alliance Forest Management 2013 Annual audit Report for: Solombalales UK (Konetsgorskaya) LLC In Arkhangelsk region, Russia.
Rainforest Alliance Forest Management 2013 Annual audit Report for: Solombalales UK (Boretskaya) LLC In Arkhangelsk region, Russia.
- 29** A pdf copy of the GFA accreditation for Solombala's FSC chain of custody and controlled wood certificate. GFA-COC-001665 and GFA-CW-001665, issued June 1, 2009. http://www.solombala.com/system/system/archives/soles/_Sertifikat_GFA-COC-001665_CW-001665.pdf
- 30** <http://info.fsc.org/details.php?id=a0240000005sUgQAAU&type=certificate&return=certificate.php>. Information from 2014/07/01 - 12:53 UTC. Certificate Code RA-COC-001718; Former Certificate Code SW-COC-001718; License Code FSC-C016977; Controlled Wood Code RA-CW-001718. First Issue Date December 12, 2005.
- 31** ICE Titan Ltd Chain-of-Custody Risk Assessment Public Summary Report. Rainforest Alliance SmartWood Program. Districts, including countries covered with this risk assessment*: Russia: North-West Federal District, Central Federal District, Volga Federal District. Date of risk assessment: December 2, 2011. ICE Titan CoC risk assess pubsum Dec 11. pdf: <http://fsc.force.com/servlet/servlet.FileDownload?file=00P400000094lxNEAQ> as last seen June 17, 2014.
- 32** Global FSC certificates: type and distribution. June 2014. Forest Stewardship Council. Published March 2014. <https://ic.fsc.org/preview.facts-and-figures-june-2014.a-3311.pdf>

ANNEX 1: METHODOLOGY

Greenpeace analysed 11 years of Landsat remote sensing data (2002 to 2013) to identify the extent of remaining coniferous dominated forests in the Northern Dvina-Pinega interfluvium, including the leased areas of former or current FSC certified companies (Table 1), then estimated the speed of forest loss. The extent of the analysis was equivalent to 3 scenes (scene = one satellite image covering 180 × 180 km²) of Landsat images, completely covering the area (interfluvium) between the Northern Dvina and Pinega Rivers. It is common in such frontier development areas for the extent of coniferous forests to be used to define the upper limit of how many more years a company can continue to log. Based on this, and estimates of direct (logging) or indirect (edge effects) forest loss over the last 11 years, Greenpeace evaluated the sustainability of the logging activities identified.

The current extent of coniferous dominated forests was classified using images from Landsat 8 OLI (June 29 and July 2, 2013). The Landsat images have the resolution of 28.5 metres to one pixel and a wide range of channels, allowing the identification of major forest types, as well as easy detection of most forest disturbances like clearcuts, roads etc. Images from Landsat 7 ETM+ from July 2002 were then compared to the 2013 images to detect changes in forest cover for the 11-year period. We identified 2002 - 2013 forest loss from clearcutting and adjacent edge effects for four out of the five companies in Table 1, with the exception of Northern Forest Company Ltd. as it only began logging in 2010. Consequently, forest loss in the Northern Forest Company Ltd. concession area was calculated over the last 4 years. Our analysis used 2002 as the base year for the comparison as this was when the Atlas of Russia's Intact Forest Landscapes was first published, and the Russian National Forest Standard also refers to this. Dvinsky Forest (IFL) was described as an HCV2 forest in the Atlas.

As it is not possible to estimate standing volumes using the Landsat remote sensing data, it was only possible to estimate the area (ha) of remaining coniferous forest and forest loss. Any variations in standing volumes were therefore not taken into account in this study.

The duration (no of years) of coniferous forest exploitation by former or current FSC-certified companies operating near or in Dvinsky Forest (IFL) was estimated using the following formula:

$$A \times \frac{F - H}{L}$$

A = the period used for calculation of forest loss (years);

F = coniferous dominated forest within the area leased by the company (ha);

H = the areas of coniferous forests within the areas, which according to different forest protection scenarios are to be excluded from logging in the analysis, (e.g. H = 0 for no protection, areas of coniferous forests within planned protected area within leased areas, and areas of coniferous forests within IFLs in leased areas).

L = detected over period A the loss of forest within leased area.

Over the last seven years, Greenpeace experts also conducted field documentation to ground-truth the results of the satellite imagery analysis in all but one of the company concession areas in Table 1. The exception was OAO Svetlozerskles. As remote sensing data was our main source of information, the methodology was necessarily simplified and some features were generalised. The simplification of the methodology resulted in the following limitations:

- 1) The calculation of the period of coniferous forest consumption does not take into account possible forest loss due to insect infestations, forest fires, severe storms and large-scale wind damage. These other forest losses can potentially shorten the calculated time over which the coniferous forests within leased forest areas could support the forest industry.
- 2) The detected forest loss calculation only takes into account the clearcuts among all logging, plus the most visible edge effects. The share of selective logging was not included as it was negligible. Forest loss due to roadbuilding was also excluded from the analysis, as it would have been difficult to achieve the required accuracy without laborious manual delineation.
- 3) The uneven distribution of standing volumes across detected coniferous dominated forests was neglected. It is likely that standing volumes in the most remote (central) parts of the interfluvium are lower than in the areas where forests are currently being logged.
- 4) Detection of coniferous forests implied some generalisation. The species composition in coniferous stands identified through satellite image classification often includes stands with a certain share of deciduous trees. Therefore, the coniferous forests in the study area were rather dominated by coniferous trees (mainly spruce) and included a slightly different share of deciduous trees.
- 5) The Cladina pine forests were not taken into consideration for the calculation. These types of forests represent a very insignificant part of the interfluvium.

Northern Forest Company Ltd. has a larger amount of Cladina Pine forests on the terrace of the Yula River. These Cladina forests were not taken into account due to methodological limitations.

ANNEX 2: VIOLATIONS

Specific FSC Russian Forest Management Standard violations – extracted from FSC Forest Stewardship Council Standard for the Russian Federation. FSC code: FSC-STD-RUS-V6-1-2012 Russia Natural and Plantations EN Version 6-01. Pre-approved by the Coordination Council of the Russian National FSC Initiative December 25, 2007 with amendments approved June 6, 2010 with amendments approved February 28, 2012. Accredited by FSC International November 11, 2008, with amendments approved October, 2012

Area of non-compliance	Specific FSC Russian Forest Management Standard violations
The loss of productive coniferous forests	<p>PRINCIPLE 6: ENVIRONMENTAL VALUES AND IMPACTS</p> <p>Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes and, by so doing, maintain the ecological functions and the integrity of the forest</p> <p>6.3.7. The organisation shall have a program to switch over from large-scale clearcuts to <i>narrow clear-strip clearcuts</i> and/or <i>small-size clearcuts</i> (up to several hectares), <i>shelterwood (multistage) cuts</i> and/or <i>selection cuts</i> in forest types where it is feasible.</p>
Weak IFL protection	<p>PRINCIPLE 9: MAINTENANCE OF HIGH CONSERVATION VALUE FORESTS</p> <p>Management activities in high conservation value forests shall maintain or enhance the attributes that define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach</p> <p>Indicator 9.3.3. Large forest landscapes minimally disturbed by human agency shall be conserved.</p> <p>9.3.6. Within the buffer zones (see 9.3.5), best available forestry technologies and practices with regard to conservation of biodiversity and forest ecosystem shall be implemented.</p> <p>9.3.5. Strict conservation zones (see 9.3.4) shall be surrounded with buffer zones</p> <p>9.3.4. In cases when a large forest landscape minimally disturbed by human agency cannot be completely conserved due to specific local social conditions, strict conservation zones completely excluded from road and forestry development activities shall be established at part of its area.</p>
A future wood supply collapse	<p>PRINCIPLE 5: BENEFITS FROM THE FOREST</p> <p>5.6.2. The total planned annual harvest level shall be reduced if the applicable AAC <i>for the leased area includes timber</i>:</p> <p>5.6.2.a: harvesting of which is prohibited or restricted by the regime of <i>protected sites</i>* ;</p> <p>5.6.2.b: harvesting of which is permitted but would not be possible due to economic inaccessibility or insufficient growing stock (<i>economically inaccessible forests</i>)</p> <p>* <i>protected sites</i> are understood as existing protected areas and candidate areas, <i>protective forests, relatively large OZU</i>, including candidate areas of ecological network and any areas voluntarily set aside for conservation by the organization.</p> <p><i>Criterion 5.6. The rates of harvest of forest products shall not exceed levels which can be permanently sustained</i></p> <p>5.6.3. The <i>annual harvest</i> level shall ensure the sustainable use in the long-term.</p> <p>PRINCIPLE 7: MANAGEMENT PLAN</p> <p>7.1.1. The forest management plan shall formulate long-term objectives of forest management that cover environmental protection, silvicultural, social and economic considerations for a rotation period and describes their implementation methods for the next 40 years or at least the duration of lease regarding the following aspects: forest production; silvicultural system, including timber harvesting and forest regeneration techniques; biodiversity conservation; conservation of forest ecosystem (water and soil resources); socio-economic benefits for population, including the use of forest for recreation, collection of berries and mushrooms, hunting and fishing; protection of sites of special cultural and religious significance; and public participation in forest management.</p>



Road adjacent to large clearcut inside Dvinsky Forest (IFL) in the Solombabales (Boretskaya) concession area. Roadbuilding and clearcuts are drivers of IFL fragmentation and degradation. Arkhangelsk region, Russia, June 2012.

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