

Proceedings of the World Heritage Boreal Zone Workshop

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Disclaimer

The recommendations found in this report represent the output of a technical workshop and do not necessarily represent the official views of States Parties to the World Heritage Convention nor the organizations which provided financial support. The recommendations reflect the opinions expressed by the workshop participants, which are not necessarily those of IUCN or UNESCO. Moreover, the recommendations cannot preclude the outcome of the official IUCN process to evaluate World Heritage nominations.

The designation of geographical entities in this report, and the presentation of material, do not imply the expression of any opinion whatsoever on the part of IUCN or UNESCO concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

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I. Workshop Description

A. Background

The Convention on the Protection of the World Cultural and Natural Heritage was adopted at the General Conference of the United Nations on 16 November 1972, and came into effect on 17 December 1975. Currently 176 States Parties have signed the Convention, making it one of the most representative conventions for environmental protection. In 1976, the World Heritage Committee and Fund were established to enhance the efficiency of the Convention. As a result, the first cultural and natural sites were inscribed in UNESCO's World Heritage List in 1978. Over the past 30 years, sites and ecosystem types from many regions of the world have been nominated. However, not all sites of outstanding universal value have been identified and nominated. Therefore, the World Heritage Committee established the so-called 'Global Strategy' in 1994 to encourage nominations from regions and biomes that are not sufficiently covered under the Convention. Despite some progress in this regard, several gaps still remain in coverage on important areas. By mid-2003, the World Heritage List numbers 754 sites, including 149 natural, 582 cultural, and 23 mixed sites "of outstanding universal value".

One of the biome types with relatively low coverage on the World Heritage List, in relation to the total area of the biome, is boreal forest sites. Of the natural sites included on the List, twelve are located in the boreal ecozone. These sites are located in four countries (Russia, Sweden, Canada and the USA) and cover a little over 35 million hectares (Table 1).

The United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Centre supported the proposal submitted by IUCN to identify boreal forest protected areas which may merit consideration as natural nominations to the World Heritage List. The UNESCO World Heritage Centre has supported similar studies on tropical forests¹, marine sites², mountains and wetlands, as well as geological sites. IUCN prepared a background study on existing and potential World Heritage sites in the boreal ecozone which was released for review in February 2003.³ With further kind support from the World Heritage Centre, the Ministry of

¹ *World Heritage Forests: The World Heritage Convention as a mechanism for conservation of tropical forest biodiversity*. Report of a workshop held in Berastagi, Indonesia, 7-11 December 1998. CIFOR, Government of Indonesia, UNESCO.

² *Proceedings of the World Heritage Marine Biodiversity Workshop*, Hanoi, Viet Nam, February 25 - March 1, 2002, World Heritage Series n°4, April 2003. Available at: http://whc.unesco.org/series/papers_04.pdf

³ *The Boreal Forest Study: Finding exceptional protected area sites in the boreal ecozone that could merit World Heritage Status*. Consultation Draft, February 2003. Available from the IUCN Temperate and Boreal Forest Programme.

the Environment in Finland, and the Department of Foreign Affairs and International Trade of Canada, IUCN convened a workshop in October 2003 in St. Petersburg, Russia to review the background paper, develop a framework for assessing gaps in the network of boreal ecozone World Heritage sites, and recommend sites which may merit consideration for inscription on the World Heritage List.

Table 1. Natural World Heritage Sites in the Boreal Ecozone

Natural World Heritage Sites In the Boreal Ecozone	Country	Year of Inscription	Size in hectares
1. Nahanni National Park Reserve	Canada	1978	476 560
2. Wood Buffalo National Park	Canada	1983	4 480 000
3. Gros Morne National Park	Canada	1987	180 500
4. Kluane/Wrangell-St. Elias/Glacier Bay/Tatshenshini-Alsek	Canada / USA	1979, 1992, 1994	9 839 121
5. Uvs Nuur Basin	Mongolia / Russian Federation	2003	1 068 853
6. The Virgin Komi Forests	Russian Federation	1995	3 280 000
7. Lake Baikal	Russian Federation	1996	8 800 000
8. Volcanoes of Kamchatka	Russian Federation	1996	3 300 000
9. Golden Mountains of Altai	Russian Federation	1998	1 611 457
10. Central Sikhote-Alin	Russian Federation	2001	1 631 923
11. The Laponian Area	Sweden	1996	940 000
12. The High Coast	Sweden	2000	142 000
Total			35 750 414

B. The Values of Boreal Forests in the context of the World Heritage Convention

The boreal ecozone receives far less attention than temperate and especially tropical ecozones in terms of conservation in general and World Heritage values in particular. Nevertheless, the boreal zone contains a vast array of universally significant values worthy of recognition, protection, and World Heritage status. In terms of the geological criteria for World Heritage designation, the boreal ecozone contains some of the oldest rocks and mineral deposits on earth. Indeed, in selected parts, such as Gros Morne National Park in Eastern Canada, the very core of the earth is exposed on the planet's surface. The boreal ecozone thus provides stratigraphic evidence of millions of years of the planet's geological history, as well as the history of life on earth through the existing and still emerging fossil records. The boreal ecozone also contains a full record of the glacial history of the world, which has shaped the evolution and distribution of the modern human species in profound ways. The boreal ecozone also reveals the history of the joining of the Eurasian and American continents and the migration of human populations across the land bridge of Beringia.

In terms of ecological processes, the boreal forests contain the largest remaining intact forest ecosystems in the world. These forest systems are characterized by dynamic natural fire

regimes. Boreal forests, as well as the peatlands and other wetlands ecosystems characteristic of the boreal zone, are among the great carbon sinks of the world and are fundamental to the carbon balance and climate of the planet. The boreal ecozone is also a place of tremendous freshwater resources, containing some of the most extensive lake and freshwater systems in the world, such as Lake Baikal in Russia, as well as Lake Superior and Great Slave Lake in Canada.

The boreal ecozone contains globally significant biodiversity. Indeed, the great caribou migrations of the boreal ecozone, consisting of hundreds of thousands of animals, are analogous to the great migrations of the African plains. The boreal ecozone also contains numerous charismatic mega-fauna such as the Siberian tigers, musk oxen, grizzly bears, wolves, and wolverines, many of which are endangered.

Finally, dozens of indigenous cultures collectively span the circumpolar boreal ecozone. Many of these cultures have survived through the period of the last Ice Age and maintain traditional practices and lifestyles as they have for thousands of years.

C. Workshop Methodology and Outputs

The plan for the workshop was to undertake a gap analysis of the existing World Heritage sites in the boreal ecozone in order to identify gaps that needed to be filled, and then to move on to a discussion of specific sites that might fill those gaps. The workshop began with an examination of the natural and cultural criteria for World Heritage sites. From there, the workshop broke down into country-specific working groups, and each working group developed a framework for identifying the unique values within each of the key boreal countries that corresponded to the criteria. Given the size and potential number of sites in Russia and Canada, these two country working groups were then asked to go a step further and identify the natural heritage values of their existing World Heritage sites against their frameworks. From there, these two country working groups were able to identify gaps and identify potential sites to fill those gaps. The working groups also used the frameworks to examine the proposed sites. These frameworks are presented below as key outputs of the workshop.

As a result of the framework exercise, the workshop participants were able to put forward a series of site specific proposals for consideration for nomination by States Parties to the World Heritage Convention. The proposals fell into three categories:

- sites that were recommended for nomination;
- sites that were recommended for nomination as extensions of existing World Heritage sites; and
- sites that may fill important gaps but where further information is required before they could be recommended for nomination.

The Workshop also adopted a series of recommendations aimed at the World Heritage Committee, States Parties to the World Heritage Convention, IUCN, sites managers, and the international community at large. These are presented below as the St. Petersburg Statement.

Lastly, the members of the Russian working group noted that there is still further work to be done in developing the protected areas network in Russia and in identifying potential World Heritage sites in Russia, and they therefore drafted a MOU in this regard which is annexed to the workshop report.

Table 2. Criteria for World Heritage Designation

<p>Natural Criteria:</p> <p>(a) (i) be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of land forms, or significant geomorphic or physiographic features; or (ii) be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, freshwater, coastal and marine ecosystems and communities of plants and animals; or (iii) contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance; or (iv) contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation; and</p> <p>(b) also fulfil the ... conditions of integrity</p> <p>Relevant Cultural Criteria:....</p> <p>(a)</p> <p>(iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared; or</p> <p>(iv) ...</p> <p>(v) be an outstanding example of a traditional human settlement or land-use which is representative of a culture (or cultures), especially when it has become vulnerable under the impact of irreversible change;</p> <p>Cultural landscapes represent the "combined works of nature and of man" designated in Article 1 of the Convention. They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal. They should be selected on the basis both of their outstanding universal value and of their representativity in terms of a clearly defined geo-cultural region and also for their capacity to illustrate the essential and distinct cultural elements of such regions.</p> <p>(ii) b) a continuing landscape is one which retains an active social role in contemporary society closely associated with the traditional way of life, and in which the evolutionary process is still in progress. At the same time it exhibits significant material evidence of its evolution over time.</p> <p>(From the July 2002 edition of the Operational Guidelines of the World Heritage Convention, http://whc.unesco.org/pg.cfm?cid=265)</p>
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II. Workshop Outputs

A. Site Specific Recommendations

The following tables summarize key information related to the site specific recommendations of the workshop. The workshop participants divided their recommendations into three categories: new sites which may merit consideration for World Heritage nomination; sites which may merit consideration for nomination as extensions of existing World Heritage sites; and sites that may contain important values not presently covered in the World Heritage List, but where further information is required. Further details of each specific site are presented in Annex 1.

1. NEW sites which may merit consideration for World Heritage nomination

Country	Name	Description	Potential WH Criteria
Canada	Atikaki/Woodland Caribou / First Nations Accord Area	This site is remarkable because of the existence of diverse and significant boreal forest values including woodland caribou and migratory bird populations in an ecologically intact cultural landscape. Extensive intact boreal land and water ecosystem with system of lakes, rivers and wetlands. It fills an important gap by representing the Canadian boreal shield ecozone. This site is also internationally significant because of the planned integration of traditional and western ecological knowledge for land management and protection. The agreement between the First Nations in whose traditional territory this site is located is precedent setting. Site includes three large existing protected areas, with future designations under review.	Ni, Nii, Niv Ciii, Cv CLiib
Finland	Green Belt of Fennoscandia	Due to the Gulf Current, the boreal forest exists at its northernmost limit in Fennoscandia. The pine forests in the boundary area between Norway, Finland and Russia are the northernmost pine forests in the world. As a result, this cluster includes relict-like climax forests, whereas elsewhere in the world boreal pine forests were established as a pioneer species of forest succession.	
	Saimaa-Pielinen Lakeland	Saimaa-Pielinen lake system is an outstanding example of a glaciated terrain with unique features and exceptional beauty. The current lake system reflects the complex interplay of (1) ancient plate tectonic processes (structures and fracturing of the bedrock); (2) erosion and deposition underneath the ice-sheets ('roches-moutonnees', drumlins etc.); (3) deposition related to the final deglaciation (eskers, end-moraines etc.); and (4) the impact of the post-glacial uplift to the tilting of the basin of the great lake of Saimaa and its isolation from the Baltic Sea.	Ni, Niii
	Aapamire Complexes of Northern Finland	Missing data	

Russia	Basegi Nature Reserve	The site features representative taiga landscapes of Middle Urals not disturbed by human activity.	Ni, Niv
	Magadansky Nature Reserve	The proposed site is representative of the forests of the Far East and features natural ecosystems which are unique for biodiversity conservation. The silver salmon spawning grounds in the Chelomdzha River are probably the most productive in the world. The vast area of the Taujskaya lowlands is the main regional water fowl habitat. The bird nesting grounds of Yamsky islands are the largest in Northern Pacific region.	Ni, Niv
	Malaya Sos'va Reserve	The Reserve conserves typical natural complexes of middle taiga of Western Siberia, the main habitat of threatened native European beaver population and many threatened prey bird species.	Niv, Nii
	Pinezhsky Reserve	This is the first Russian site featuring unique karst formations with an outstanding physical-geography and aesthetic value.	Ni, Niii, Niv
	The Putorana Plateau Natural Complex	This is the first Russian site located completely beyond the polar circle and featuring mountainous north-taiga and tundra natural complexes, the largest Siberian basalt formations and habitat of the endemic species the Putorana bighorn sheep.	Ni, Niii, Niv
	The Western Sayan	The territory of the reserve is of exceptional and universal value in terms of conservation of biodiversity. It presents a large amount of endemic, relict, as well as rare plant and animal species.	Nii, Niii, Niv
	Tsentralno-Sibirsky State Nature Reserve	The site represents undamaged natural complexes of the taiga of central Siberia and central part of the continent.	Niv, Nii Ciii
	The Tungusky phenomenon	The Tungusky Reserve aims at conserving the area of the "Tungusky meteorite" and allows for the study of the ecological consequences of the meteorite impact.	Ni, Nii, Niv
	Valdai – the Great Watershed	The site features perfectly maintained south-taiga complexes which have an outstanding significance as a kind of biodiversity refugium of the Russian plain. This is the first Russian site nominated as the mixed natural and cultural site. The cultural landscape of the Great Watershed is representative of the traditional way of living of the Russian village.	Ni, Niv, Cv
	Kuril Islands	This site represents the natural complexes of the typical oceanic islands with their own unique features. The area provides protection of numerous rare, endangered and endemic species of plants and animals as well as unique ecosystems and natural phenomena.	Ni, Nii, Niii, Niv

2. Sites which may merit consideration for World Heritage nomination as EXTENSIONS of existing World Heritage sites

Country	Name	Description	Potential WH Criteria
Canada	Wood buffalo	The extension of the current World Heritage site with adjacent protection would increase the site's ecological integrity and representativity.	Nii, Niv Ciii, Cv CLiib
	Nahanni	The extension of the current World Heritage site to the boundaries of the watershed and beyond would help ensure the integrity of this globally significant ecosystem and add significant karst topography.	Ni, Nii, Niv Ciii, Cv CLii
Finland	The Northern Kvarken	The Northern Kvarken has outstanding universal value for the understanding of how glaciation and deglaciation processes form a landscape. The Northern Kvarken is the most representative area in the world for studying moraine archipelagos and the land uplift phenomena (isostatic rebound).	Ni
Norway	North Norwegian Fjord Landscape	Together with the adjacent Lapponian World Heritage area in Sweden, the North Norwegian Fjord Landscape will provide a cross-section over the Scandinavia peninsula with unique geological characteristics. The Fjord Landscape also contains a virtually untouched Lule Sami cultural landscape within this large, intact boreal ecosystem.	Ni, Niii, Cv
Russia	The Bikin River valley (for extension of "Central Sikhote-Alin" World Heritage site)	The territory of the Bikin River valley represents a unique natural complex with "Central Sikhote-Alin" World Heritage site and can be proposed as an extension of this site. The largest integral massif of natural cedar broad-leafed forests has been preserved in the valley. The territory of the Bikin valley serves as a reproductive center of the northeast group of the Amur tiger.	Nii, Niv Ciii

3. Sites where FURTHER INFORMATION is required

Country	Name	Description	Potential WH Criteria
Canada	Muskwa-Kechika	Muskwa-Kechika: this site reflects a visionary approach to conservation and integrated resource management of an intact boreal cordillera ecosystem.	
	Hudson Bay	This site is characterized by internationally significant isostatic rebounding and universally significant biodiversity including denning polar bears, exceptional migratory flocks, extensive peatlands and, offshore, listed beluga whales. A recent discovery of internationally significant fossils is worth noting.	
	Lake Superior	(combined with Wabikimi - Nipigon) A potential site including a continuous chain of several hundred kilometers of protected boreal forests, significant boreal lakes and a proposed marine protected area.	
	Wabikimi	(combined with Lake Superior) A potential site including a continuous chain of several hundred kilometers of protected boreal forests, significant boreal lakes and a proposed marine protected area.	

Country	Name	Description	Potential WH Criteria
	Mealy Mountains	Mealy Mountains: This site is most notable for the diversity of landforms ranging from mountain habitat, boreal forest, string bog, and coastal habitats including a significant dune complex.	
	Thelon Wildlife Sanctuary and Queen Maud Migratory Bird Sanctuary	This site has outstanding geological features including extensive esker system and world's largest drumlin field; it has a huge abundance and diversity of migratory waterfowl and shorebirds, the richest area in the Arctic for mammals (musk ox, caribou, wolf), as well as a marine component of the Queen Maud Migratory Bird Sanctuary.	Nii, Niv Ciii, Cv CLiib
	Canada / US transboundary sites: Ivvavik and Vuntut National Parks (Yukon) and Arctic National Wildlife Refuge (Alaska)	Scenic beauty and natural phenomenon with mountains, wetlands, wild rivers and migrating wildlife spectacles; geological processes relating to Pleistocene events and Beringia; diversity and species with wide range of species especially caribou, bear, waterfowl, and marine life.	Ni, Nii, Niv

SWEDEN: The workshop did not make any recommendations concerning potential new sites in Sweden. The workshop participants felt there was not enough information upon which to base any recommendations. The background report prepared by IUCN did not contain information on Sweden since, during the consultations for the background study, the Government of Sweden indicated that it was not considering any potential new nominations in its boreal forests.

UNITED STATES: The workshop was unable to undertake a detailed analysis of boreal zone World Heritage values or potential sites in the US. The workshop participants were able to discuss the sites described in the background paper prepared by IUCN. The workshop participants felt that the sites merited further consideration but that more information was necessary to evaluate the World Heritage values for both site complexes identified in the background study. These consist firstly of the Arctic National Wildlife Refuge, Yukon Flats National Wildlife Refuge, and the Yukon-Charley Rivers National Preserve, and secondly of Koyukuk National Wildlife Refuge, Nowitna National Wildlife Refuge, Innoko National Wildlife Refuge, and Denali National Park. The workshop participants were particularly interested in exploring the potential for a Canadian-US transboundary site along the Alaska-Yukon border consisting of Ivvavik and Vuntut National Parks on the Canadian side and the Arctic National Wildlife Refuge on the US side. Participants noted that the transboundary site would fill important gaps in the World Heritage circumboreal system since no other natural World Heritage sites are found within the Alaskan tundra biogeographic zone; few sites on the World Heritage List have such a spectrum of habitats including mountains, coastal plains, wetlands and boreal forests; no other site in Beringia contains such varied and extensive palaeontological deposits and no other protected area includes all three species of bear.

B. The St. Petersburg Statement

Recommendations of the World Heritage Boreal Zone Workshop St. Petersburg, Russia 12 October 2003

With support from the World Heritage Centre, IUCN convened a workshop from 9 to 13 October 2003 in St. Petersburg, Russia, bringing together 33 governmental, NGO and academic experts from four boreal countries to discuss priorities in boreal forest conservation and to identify gaps within existing networks of protected areas as well as on the World Heritage List.

The workshop recognized that the boreal zone contains several features of outstanding universal value such as unique forest and wetlands ecosystems and species assemblages, habitats for rare and endangered species, the world's largest intact frontier forests, geologically and geomorphologically unique territories, and areas of superlative natural beauty. The workshop also recognized another feature of outstanding value in the unique cultural heritage representing the diverse lifestyles of several indigenous peoples and ethnic sub-groups that have inhabited the boreal forest regions for thousands of years and maintain their traditional lifestyles. The boreal forests and associated wetlands are also globally important freshwater resources and carbon sinks for the world.

This heritage is currently under great threat of disappearing due to extensive industrial activities and climate change. The workshop emphasized the high urgency to take immediate measures to conserve the natural and cultural heritage contained in the boreal zone.

The workshop noted that within the boreal zone there still are large intact areas of frontier forests to be found. These are the last such large intact areas remaining on earth and therefore the countries with those areas, as well as the international community as a whole, have a great responsibility to protect them. The workshop also determined that the designation of additional sites of universal significance is required as a catalyst to foster international understanding of the global importance of the boreal zone.

Bearing the above in mind, the participants of the workshop endorsed the following recommendations.

To the World Heritage Committee, that it:

- Recognize the importance of conserving the outstanding manifestations of the boreal zone through all instruments available to the Committee, e.g. funding preparatory activities, encouraging further studies, supporting boreal zone nominations that fulfill World Heritage criteria, continuing support of the World Heritage Forest Programme.
- Consider exempting natural site nominations from the rule of one nomination per year per country, in the light of the high urgency of protecting the natural and cultural heritage

identified in the boreal zone and due to the fact that most of this heritage is situated only in two vast countries.

- Endorse the framework developed at the workshop for considering the establishment of future World Heritage sites and protected areas in the boreal zone.
- Recognize the complex and unique interactions between indigenous cultures and boreal forests, and ensure support for nominations featuring the history, culture, traditions, and roles of indigenous peoples within the boreal zone.

To the States Parties with boreal forests, that they:

- As a matter of high urgency use all available means, including the World Heritage Convention, protect the intact frontier boreal forests and other areas of the boreal zone that are of high conservation value. Special attention is to be paid to preserving forest clusters in the zones of highest threat of fragmentation and disappearance, e.g. in Eurasia where remaining large clusters are found in Karelia and Arkhangelsk regions, and in Canada within the northern part of the commercial boreal forest region.
- Complete assessments of potential World Heritage sites, update their tentative lists accordingly, and consequently prepare and submit those nominations to the World Heritage Centre.
- Ensure involvement of indigenous and local communities in further efforts to identify and prioritize values to be represented on the World Heritage List.
- Facilitate national and international networks in support of sustainable management of existing and proposed World Heritage sites within the boreal zone, considering that there is a wealth of experience at the existing sites where lessons learnt from existing sites may be of use for preparing new nominations.
- Prioritize increasing the integrity of candidate World Heritage sites where these conditions are not currently met.
- Recognize that although some of the areas that were identified in the workshop may not meet the World Heritage criteria, they still are of high conservation value and ought to be protected by using other national and international instruments such as Man and Biosphere or Ramsar designations.

To site managers, that they:

- Encourage information exchange between existing sites and sites preparing nominations, e.g. through twinning arrangements both nationally and internationally.

To IUCN, that it:

- Support the refinement of the framework established in the workshop and take necessary steps to finalize it. This should include assessment of potential boreal zone elements within the Icelandic, Scottish, Japanese, Mongolian, Chinese, and Kazakhstan territories. Continue to provide expertise for boreal forest conservation through its networks.
- Continue to use best available expertise to evaluate new nominations of boreal forests.

To the international community, that it:

- Facilitate the process of international and national networking for information and experience sharing by supporting it financially and by all other available means, in order to achieve common approaches in identification, establishment and management of the existing and proposed World Heritage sites. Great care ought to be taken to include all relevant stakeholders in the networks.
- Give high priority for financial support for the conservation of still intact boreal forests in general, and the areas identified at the workshop and within the framework in particular.

C. Frameworks Developed at the Workshop

1. Canada Framework of existing World Heritage sites and Values

Type	Geology Natural criterion (i)	Process Natural criterion (ii)	Aesthetic Natural criterion (iii)	Biodiversity Natural criterion (iv)	Culture	Other factors (integrity, threats, protection)
Existing	Gros Morne (fjords, serpentine rocks, represents centre of the earth) (1)	Examples of “non-fire” disturbance regimes in the boreal forest (4)	Gros Morne (coastal mountains, fjord landscape) (2)	Endemic (3) species, (serpentine and limestone barrens, remnant Arctic species)		
	Nahanni (unglaciated deep canyon, geothermal) (3)	Nahanni (river) (2)	Nahanni (waterfall, canyon) (1)		Nahanni (traditional and existing land uses) (3)	
		Wood Buffalo (floods, fire) (2)		Wood Buffalo (wood bison, plains bison, crane) (1)	Wood Buffalo (traditional and existing land uses) (3)	
	Kluane (glaciation) (1)		Kluane (mountains, glaciers) (2)		Kluane (traditional and existing land uses) (3)	
Addition	Nahanni extension (karst, watershed features, geothermal) (2)				Nahanni (traditional and existing land uses) (1)	Adds integrity, some mining proposals, National Park Reserve
	Wood Buffalo Satellites (landscapes and features not well represented within Wood Buffalo, more information required)			Wood Buffalo Satellites (landscapes and features not well represented within Wood Buffalo, more information required)	Wood Buffalo Satellites (traditional and existing land uses)	Adds to integrity of sites through serial additions, encroaching logging and oil and gas, provincial parks

New	Muskwa-Kechika (geothermal, sedimentary cordillera with both western and eastern slope representation)	Muskwa-Kechika (large intact predator-prey system, fire dominated system, alpine glaciation)	Muskwa-Kechika (largest wilderness system south of 60° in North America with 50 undeveloped watersheds some of considerable size, abundant diversity of large mammals)	Muskwa-Kechika (large intact predator-prey system, grizzly bears, wolves, stone sheep, mountain goats, woodland caribou, moose, wapiti, mule and whitetail deer, disease free plains bison, bald eagles, wolverines and endangered bird species: Connecticut warbler, sharp-tailed sparrow, upland sandpiper)	Muskwa-Kechika - (traditional and existing land uses, treaty eight First Nations, Kaska Dene Council, and Carrier Sekani Tribal Council who use it for hunting, gathering, and fishing)	High integrity, new system of management with promised, legislated extractive industries managed for conservation, some (25%) of area under provincial parks designation, remainder in special management. political concerns, under land claim process, unique legislative protection in Muskwa-Kechika Management Area Act, otherwise support
	Québec/Labrador complex (eskers and drumlins ridges, string bogs and ribbed fens)			Québec/Labrador complex (woodland caribou)	Québec/Labrador complex (traditional and existing land uses)	
	Atikaki/Woodland Caribou / First Nations Accord Area (shield country, rich glaciation evidence, faulting)	Atikaki/Woodland Caribou / First Nations Accord Area (strongly influenced by wildfire, large unroaded wilderness area housing an extensive network of rivers, lakes and wetlands)	Atikaki/Woodland Caribou / First Nations Accord Area (an extensive network of rivers, lakes and wetlands with high aesthetic value)	Atikaki/Woodland Caribou / First Nations Accord Area (woodland caribou, wolf - winter and summer habitats - bald eagles, other migratory birds, wolverine, chestnut lamprey, jack pine dominate with black spruce, trembling aspen and white birch)	Atikaki/Woodland Caribou / First Nations Accord Area (archaeological sites and pictograms (traditional and existing land uses, - signed accord by four First Nations)	Joint provincial management areas providing for large contiguous area with high integrity (three large provincial protected areas (parks) already within an aboriginal accord; forest lands protection and management, threats include forestry, roads, possible hydro power corridors)
	Natashquan (rock cliff of 250 m located near the Mahkunipiu River)	Natashquan (boreal shield, unique example of North America's great rivers of the North and the Lower North shores)			Natashquan (Montagnais community (Innus); traditional and existing land uses)	

Other	Wapusk (isostatic rebound, fossils)			Wapusk (polar bear denning, extensive peatlands)		High integrity, tourism, national and provincial park
		Yukon (Vuntut, Ivvavik – Beringia) (sea level, human history, prehistoric mega fauna, barren ground caribou, more information required)				
	Mealy Mountains			Mealy Mountains (woodland caribou herd, wolverine, short-eared owl, ivory gull, harlequin duck, eskimo curlew, peregrine falcon, and eastern population of barrow's goldeneye; area noted for Atlantic salmon stocks, which are declining globally)	Mealy Mountains (traditional and existing land uses; three aboriginal groups)	High integrity, road construction, commercial sport fishing, not protected (as yet)
	Lake Superior/Nipigon Marine			Lake Superior Marine	Lake Superior Marine	
	Thelon Barrens (geomorphological glacial processes, permafrost features)	Thelon Barrens (northern river with many waterfalls)		Thelon Barrens – intact predator prey system of barren ground caribou, wolves)		

2. Canada Framework for World Heritage Values and Potential New Sites to Fill Gaps

	<i>Muskwa- Kechika</i>	<i>Québec Labrador</i>	<i>Atikaki- Woodland Caribou / East Side</i>	<i>Natashquan River Valley</i>	<i>Churchill Caribou</i>	<i>Wood Buffalo Satellites</i>	<i>Nahanni Extension</i>	<i>Wabikimi – Nipigon</i>	<i>Mealy Mountain</i>	<i>Thelon Barrens</i>	<i>Yukon Alaska trans- boundary site</i>
Criterion 1											
Taiga cordillera	X						X				
Taiga plains						X					
Taiga shield									X	X	
Boreal cordillera	X										
Boreal plains											
Boreal shield			X	X		X		X	X		
Hudson plains					X						
Palaeontology					X						
Isostatic rebound					X						
Glaciation / glacial features		X	X	X	X	X		X	X	X	
Glacial refugium							X				
Geological diversity			X								
Geological features			X	X		X					
Permafrost		X			X					X	
Geothermal processes and features	X						X				
Vast, undeveloped lake								X			
Karst topography							X				
Landform diversity									X		
Criterion 2											
Post-glaciation succession											
Intact ecological processes (ex. Fire)	X		X	X							
Predator/prey relationships	X		X		X				X	X	
Intact landscapes (absence or roads, development)	X		X	X	X		X		X	X	
Watershed integrity (absence of roads or development)	X		X	X	X	X	X		X	X	
Significant phenomena				X (non-fire boreal)					X (mix of fire and non-fire driven)		
Criterion 3											
Rivers and lakes			X	X				X			
Cliff				X				X			
Mountains	X								X		
Waterfall(s)				X							
Coastal area									X		
Beaches									X		
Criterion 4											
Woodland caribou		X	X					X	X		
Barren ground caribou										X	

	<i>Muskwa- Kechika</i>	<i>Québec Labrador</i>	<i>Atikaki- Woodland Caribou / East Side</i>	<i>Natashquan River Valley</i>	<i>Churchill Caribou</i>	<i>Wood Buffalo Satellites</i>	<i>Nahanni Extension</i>	<i>Wabikimi – Nipigon</i>	<i>Mealy Mountain</i>	<i>Thelon Barrens</i>	<i>Yukon Alaska trans- boundary site</i>
Grizzly bear	X										
Marten			X					X	X		
Wood bison	X										
Raptors (bald eagle, golden eagle, etc.)	X		X						X		
Migratory / nesting birds (insufficient information)	X				X				X		
Aquatic/sea birds									X		
Polar bear (?)					X						
Wolverine	X		X						X		
Wolf	X									X	
Musk Ox											
Migratory pathways					X						
Endemism			X							X	
Listed species	X		X		X				X		
Old growth				X							
Fish species				X (salmon)				X	X (salmon)		
Marine					X (polar)						
Habitat / vegetation diversity					X (river valleys)	X (unclear)			X (string bogs)		
Peatlands									X		
Sites of high biodiversity (hotspots)	X	X									
Cultural											
Criterion iii											
Existence/application traditional knowledge	X		X						X		
Cultural artifacts			X								
Criterion v											
Existence / continuation traditional land uses	X	X	X					X	X		

3. Russia Framework for World Heritage Values and Potential New Sites to Fill Gaps

	<i>Basegi Nature Reserve</i>	<i>The Bikin River valley (for extension of "Central Sikhote-Alin" WH site)</i>	<i>Kuril Islands</i>	<i>Magadansky Nature Reserve</i>	<i>Malaya Sos'va Reserve</i>	<i>Pinezhsky Reserve</i>	<i>The Putorana Plateau Natural Complex</i>	<i>The Western Sayan</i>	<i>Tsentralno-Sibirsky State Nature Reserve</i>	<i>The Tungusky Phenomenon</i>	<i>Valdai – The Great Watershed</i>	<i>Comments</i>
Criterion 1												
Oceanic island chains			X									
Zones of tectonic activity												
Large freshwater bodies; lake and river systems												Missing, apart from Baikal
Karst landscapes						X						
Basalt trapps							X					
Waterfalls							X					
Ancient bedrocks												
Complex representation of glacier landscapes												
Palaeontological sites												e.g. areas with frozen mammoths in Yakutia missing
Tungusky phenomenon									X			
Criterion 2												
Large virgin European taiga clusters; sustainable natural succession processes												Green Belt of Fennoscandia to some extent, however main areas (Vodlozero, Onega peninsula, Dvina-Pechora area) are missing
Larch forests in extra-continental Siberia (central Yakutia); most clearly reflecting global climatic changes												Missing
Dark coniferous (Chernevyj) taiga forests								X				
Large wetlands with unique floristic and faunistic complexes and essential for migrations of wildlife					X							
Criterion 3												
Mountain complexes							X					
Large lakes, rivers, waterfall systems (including associated mosaic landscapes)							X					
Criterion 4												
Large virgin taiga clusters; highest natural biodiversity levels in boreal zone including typical as well as rare and endangered species (e.g. large mammals, predators, etc.)												Mainly missing (apart from virgin forests of Komi)
Forest ecosystems as habitats for species of special concern: e.g. Siberian tiger, snow leopard, Putorana bighorn sheep												

	<i>Basegi Nature Reserve</i>	<i>The Bikin River valley (for extension of "Central Sikhote- Alin" WH site)</i>	<i>Kuril Islands</i>	<i>Magadansky Nature Reserve</i>	<i>Malaya Sos'va Reserve</i>	<i>Pinezhsky Reserve</i>	<i>The Putorana Plateau Natural Complex</i>	<i>The Western Sayan</i>	<i>Tsentralno-Sibirsky State Nature Reserve</i>	<i>The Tungussky Phenomenon</i>	<i>Valdai – The Great Watershed</i>	<i>Comments</i>
Cultural												
Areas with cultural-historical mosaic											X	
Areas inhabited by indigenous people that maintain traditional lifestyle dependent on boreal forests (Saami, Hanty, Mansi, Udygy, Evenky, etc.)												
Areas traditionally inhabited by local ethnical sub-groups (e.g. Pomors, Vodlozers, etc.)												
Unique historical monuments naturally linked to surrounding landscapes												

After reviewing the previous table, the Russian working group made several observations about gaps that still need to be filled, although time did not permit them to consider specific sites that might fill those gaps. Further work should be done to identify sites in:

- The virgin forests of the north of the European part of Russia. Important clusters of virgin forests remain in Karelia and Archangelsk regions, including Vodlozersky National Park, Pinezhsky Reserve, Kozhozero Nature Park, Onega Peninsula, Belomor-Kuloj Plateau, Mezen' Pizhma, and Jula River valley.
- The "Great Lakes of Europe," namely Ladoga, Saimaa, and Onega Lakes.
- Larch forests of continental Siberia.
- Siberian bog systems. In addition to the Malaya Sos'va Reserve, the Vasjugansky bog system should also be considered.

Annex 1: Details on Sites for Potential Nomination

Canada

Name	Atikaki/Woodland Caribou/First Nations Accord Area
Brief Description	This site is very important because of the existence of diverse and significant boreal forest values including woodland caribou and migratory bird populations in an ecologically intact cultural landscape. Extensive, intact watershed with system of lakes, rivers, and wetlands. It fills an important gap in representing the Canadian boreal shield ecozone. This site is also internationally significant because of the planned integration of traditional and western ecological knowledge for land management and protection. The agreement between the First Nations, in whose traditional territory this site is located, is precedent setting. Site includes three large existing protected areas, with future designations under review.
Recommendations of workshop	Potential new site Recommend for nomination as a World Heritage site.
Features that may meet 'Outstanding Universal Value'	The combination of listed species, endemic species, intact landscapes and watersheds, intact fire process, geological features, cultural and archaeological artifacts and the continuation of traditional land uses and cultural landscape makes this site internationally significant. Fills boreal shield gap. First Nations Accord for lands protection and management also feature, as is Manitoba's protocol and MOU for First Nations participation in establishment of protected areas.
Potential WH Criteria Protection	Ni, Nii, Niv, Ciii, Cv, CLiib Provincial park status for portions of site (Atikaki and Woodland Caribou Provincial Parks - protected); interim protected status for portion of site (traditional territory of Poplar River First Nation); traditional protection for First Nation traditional territories; ecosystem-based land use planning taking place in traditional territories; Bloodvein River is Canadian heritage river (not protected from development); minimal linear disturbance, large roadless areas; no major industrial development; most areas currently off-limits to logging.
Integrity	High
Threats	Proposed roads; hydro corridors; forestry; mining.
Support	
Government	Yes
Professional	Yes
NGO	Yes
Local indigenous	High likelihood of positive support

Name	Wood Buffalo
Brief Description	The extension of the current World Heritage site with adjacent protection would increase the site's ecological integrity and representativity.
Recommendations of workshop	Recommend that addition should occur only if it does not require a new nomination. Otherwise the new sites do not warrant World Heritage site designation on their own. Priority should be on adding adjacent site (Caribou Mountains Wildland Provincial Park) to increase integrity. Addition of this adjacent area would increase the size of the current World Heritage site by 13%.
Features that may meet 'Outstanding Universal Value'	The satellite sites do not themselves contain universal values. The addition of adjacent sites would increase the integrity of the Wood Buffalo site.
Potential WH Criteria Protection	Nii, Niv, Ciii, Cv, CL Existing national park and World Heritage site as well as several provincial protected areas.
Integrity	Adjacent satellites add to integrity of Wood Buffalo. Integrity of serial system not guaranteed given intervening management.
Threats	None – only includes provincial parks at adjoining areas facing logging, oil and gas development.

Support	
Government	Not demonstrated
Professional	Yes
NGO	Probably
Local indigenous	Not demonstrated

Name	Nahanni
Brief Description	Nahanni: The extension of the current World Heritage site to the boundaries of the watershed and beyond would help ensure the integrity of this globally significant ecosystem and add significant karst topography.
Recommendations of workshop	Extension of site. Recommend as an addition but may require a new nomination because it is a significant extension.
Features that may meet 'Outstanding Universal Value'	Karst might be of universal significance. Continuation of existing and continued traditional lifestyle (cultural landscape). Other than this, it offers greater integrity to the existing World Heritage site (the national park).
Potential WH Criteria	Ni, Nii, Niv, Ciii, Cv, CL
Protection	Core is protected through national park. Interim protection in the rest of the watershed.
Integrity	Extensions add integrity.
Threats	Few threats. Mining proposals.
Support	
Government	Yes
Professional	Yes
NGO	Yes
Local indigenous	High likelihood of positive support

Name	Muskwa-Kechika
Brief Description	Muskwa-Kechika: This site reflects a visionary approach to conservation and integrated resource management of an intact boreal cordillera ecosystem with a globally significant diversity of large mammals.
Recommendations of workshop	Site for further consideration. This site should be considered for future designation given demonstrated political support and success of the legislated management approach in protecting heritage values.
Features that may meet 'Outstanding Universal Value'	Potential cultural landscape if over time the conservation planning approach in a large intact landscape manages to influence the actions on the ground to meet the objective of maintaining wilderness values. Would fill boreal cordillera gap.
Potential WH Criteria	
Protection	25% of provincial protected areas; innovative integrated management in the remaining special management, matrix areas; road rehabilitation required.
Integrity	The integrity of the site depends on the success of the integrated management approach which is mandated in the Muskwa-Kechika Management Area Act.
Threats	High oil and gas values, new management system proposed.
Support	
Government	Unclear
Professional	Yes
NGO	Yes
Local indigenous	High likelihood of positive support

Name	Hudson Bay
Brief Description	This site is uniquely located on the coast of Hudson Bay and is characterized by internationally significant isostatic rebounding and universally significant biodiversity including denning polar bears, exceptional migratory flocks, extensive peatlands and, offshore, listed beluga whales. A recent discovery of international significant fossils is worth noting.

Recommendations of workshop	Site for further consideration. Develop a potential World Heritage site with additional linking protection between parks and including marine protection. Fills significant gap for polar bear, beluga, Hudson Bay lowlands, boreal migratory areas.
Features that may meet 'Outstanding Universal Value'	Yes. Isostatic rebound; palaeontological; polar bears; marine component. Only boreal site with snow geese, polar bears and beluga whales. Fills gap in Hudson Bay lowlands.
Potential WH Criteria	
Protection	Several provincial parks; unknown what other protection could be had.
Integrity	No proposal.
Threats	Tourism impact on polar bears?
Support	
Government	Unknown
Professional	Yes
Ngo	Yes
Local indigenous	Unknown

Name	Lake Superior
Brief Description	(combined with Wabikimi – Nipigon) A potential site including a continuous chain of several hundred kilometers of protected boreal forests, significant boreal lakes and a proposed marine protected area.
Recommendations of workshop	Site for further consideration. Develop marine World Heritage nomination. Could be combined with Wabikimi - Nipigon proposal?
Features that may meet 'Outstanding Universal Value'	
Potential WH Criteria	
Protection	Lake Superior Marine Conservation Area.
Integrity	
Threats	Unknown
Support	
Government	Not demonstrated
Professional	Yes
NGO	Probably
Local indigenous	Not demonstrated

Name	Wabikimi
Brief Description	(combined with Lake Superior) A potential site including a continuous chain of several hundred kilometers of protected boreal forests, significant boreal lakes and a proposed marine protected area.
Recommendations of workshop	Site for further consideration. Do not include on tentative list. Consider developing a combined proposal with the Lake Superior marine conservation area.
Features that may meet 'Outstanding Universal Value'	Lake Nipigon may be universally significant because it is a vast, undeveloped boreal lake.
Potential WH Criteria	
Protection	Wabikimi Provincial Park; Lake Nipigon conservation reserves; provincial waterway parks; enhanced management areas meant to retain remoteness during logging.
Integrity	Linear connections between protected areas. Watersheds not fully protected.
Threats	Yes, logging in watersheds of conservation reserves and waterway parks.
Support	No discussion

Name	Mealy Mountains
Brief Description	This site is most notable for the diversity of landforms ranging from mountain habitat, boreal forest, string bog, and coastal habitats including a significant dune complex.
Recommendations of workshop	Site for further consideration Consider developing a proposal for World Heritage nomination once protection realized.
Features that may meet 'Outstanding Universal Value'	Yes. Captures gradient from mountain to boreal to coastal ecosystems. Porcupine strand (hundreds of miles of beaches) unique and significant feature. Fills taiga shield gap. Also includes boreal shield.
Potential WH Criteria Protection	Proposed national park. If not national park, may be provincial wilderness area. Size and extent uncertain.
Integrity	Proposal has integrity. If it can be extended to the coast, it will capture a more complete range of values.
Threats	Yes. Plan in place for highway along the coast that could bisect the area.
Support	
Government	Not demonstrated
Professional	Unknown
NGO	Probably
Local indigenous	Unknown

Name	Thelon Wildlife Sanctuary and Queen Maud Migratory Bird Sanctuary
Brief Description	The Thelon Wildlife Sanctuary, an expanse of 52 000 km ² , straddles the border between Nunavut and the Northwest Territories. One of the richest wildlife areas in the Arctic, it includes the key parts of the range and calving grounds of the 270 000 strong Beverly Caribou Herd and over 1 000 resident musk oxen. The ungulate herds support substantial populations of predators such as wolf, grizzly bears and wolverine. Over 100 bird species are found, including abundant population of raptors and a molting ground for Canada geese. Vegetation is primarily tundra with spruce outliers along the rivers. The world's largest drumlin field and huge eskers are also found here. Separated by a gap of 100 km from the Thelon Wildlife Sanctuary is the Queen Maud Gulf Migratory Bird Sanctuary with an expanse of 56 000 km ² . As a Ramsar site, the sanctuary provides habitat for globally significant populations of white fronted geese, snow geese, Ross's geese and hundreds of thousands of shorebirds. Here too are found the calving grounds of the 200 000 strong Queen Maud Gulf caribou herd and 4 000 musk oxen. The 300 km of Arctic coastline add an important marine component. Numerous archaeological sites are also present. No other World Heritage site exists in the Canadian tundra biogeographical province. The barren lands of Arctic Canada are one of the last undisturbed areas of wilderness on the planet and both the Thelon and Queen Maud Sanctuaries protect a substantial portion of the region which would be equivalent in size to the "St. Elias complex" (Kluane/Wrangell-St. Elias/Glacier Bay/Tatshenshini-Atsek World Heritage site. The density and diversity of geese populations exceed any other Arctic locality. Other sites in the Arctic contain large wildlife populations, but none have the diversity and abundance of those found in the Thelon and Queen Maud areas of the Barren lands.
Recommendations of workshop	Site for further consideration. This area should be the basis of a proposal for World Heritage nomination.
Features that may meet 'Outstanding Universal Value'	Outstanding geological features include extensive esker system and world's largest drumlin field; Huge abundance and diversity of migratory waterfowl and shorebirds, richest area in Arctic for mammals (musk ox, caribou, wolf) as well as marine component of Queen Maud Migratory Bird Sanctuary.
Potential WH Criteria Protection	Nii, Niv, Ciii, Cv, CLiib Federal Wildlife sanctuary.
Integrity	Very high: Both protected areas are managed by the two territorial governments in

	cooperation with the Canadian Wildlife Service of Environment Canada and resident populations.
Threats	Limited
Support	
Government	Do not know
Professional	Yes
NGO	Yes
Local indigenous	Do not know

Name **Canada – US Transboundary Site: Ivvavik and Vuntut National Parks with Arctic National Wildlife Refuge**

Brief Description Together, these two Canadian national parks comprise 14 500 km² of wilderness on the Yukon coastal plain, Richardson Mountains, and a portion of the Old Crow Flats wetlands. These physically diverse habitats occur in an area that was not glaciated and form part of the Beringia corridor as evidenced in its rich assemblage of archaeological and palaeontological deposits. The Old Crow Flats is a vast plain of over 2 000 lakes and is listed as a Wetland of International Importance under the Ramsar Convention especially for breeding and migratory waterfowl. Four major rivers flow through the coastal plain cutting spectacular canyons on their way to the Beaufort Sea. Three species of bear are found along with a host of other wildlife including Dall sheep and moose. The area supports 10% of the world's caribou population with the porcupine herd numbering close to 200 000 animals. The calving grounds for the herd are found in the Arctic National Wildlife Refuge in Alaska (76 000 km²) which is contiguous with Ivvavik and Vuntut. This is the land of the Inuvialuit and Vuntut Gwitchin who have hunted, fished and traded in the region for thousands of years.

No other natural World Heritage sites are found within the Alaskan Tundra biogeographic province. Few sites on the World Heritage List have such a spectrum of habitats including mountains, coastal plains wetlands and boreal forests. No other site in Beringia contains such varied and extensive palaeontological deposits. No other protected area includes all three species of bear. Other sites in the Arctic support equivalent or greater populations of caribou and migratory waterfowl (e.g. the Bathurst, Beverly and Bluenose caribou herds and total bird populations in Queen Maud Gulf).

Herschel Island Territorial Park (Canada) may also be incorporated.
Recommendations of workshop Site for further consideration.
 Yukon, Canadian, Alaskan and United States governments need to work on a transboundary proposal.

Features that may meet 'Outstanding Universal Value' Scenic beauty and natural phenomenon with mountains, wetlands, wild rivers and migrating wildlife spectacles; geological processes relating to Pleistocene events and Beringia; diversity and species with wide range of species especially caribou, bear, waterfowl and marine life.

Potential WH Criteria Ni, Nii, Niv
Protection Both national parks are IUCN Category II protected areas.
Integrity Both national parks are managed by Parks Canada in cooperation with local residents. A bilateral agreement between Canada and the USA on the Conservation of the porcupine caribou herd fosters international cooperation.

Threats
Support
Government No
Professional
NGO
Local indigenous

Finland

Name	Green Belt of Fennoscandia
Brief Description	Due to the Gulf Current, the boreal forest exists at its northernmost limit in Fennoscandia. The pine forests in the boundary area between Norway, Finland and Russia are the northernmost pine forests in the world. As a result, this cluster includes relict-like climax forests in north, whereas elsewhere in the world boreal pine forests were established as a pioneer species of forest succession.
Recommendations of workshop	Potential new site
Components of cluster	The nature reserves on both sides along the Finnish – Russian border from Finnish Bay to Polar Sea.
Area of cluster	
Region and countries	Fennoscandia, Russia, Finland, Norway.
Proposed by	Finland, Russia and Norway.
Features that may meet ‘Outstanding Universal Value’	Due to Gulf Current, the boreal zone exists in Fennoscandia at its northernmost levels in the world. The pine forests in the boundary area between Norway, Finland, and Russia are the northernmost pine forests in the world. The Green Belt is the chain of <i>Pinus sylvestris</i> boreal forests from 60° to 70° of latitudes in the North. The age of the forests is over 9 000 years, developing soon after the retreat of the ice age. As a result, there is a case of relict-like climax forests in the north, where elsewhere in the boreal zone pine is considered as a pioneer species of forest succession.
	Processes
	Natural dynamics of old growth boreal forest species and species assemblages including potential movement of species due to climatic change.
	Physical features (geology, geomorphology)
	Green Belt is an outstanding example to illustrate Ice Age
	– Baltic shield, ancient bedrock, low hills, fells (no mountains)
	– High diversity of glaci-fluvial formations
	– Small and shallow lakes and ponds
	Vegetation
	The area lies in the western margin of Eurasian taiga with all boreal sub-zones included. The proposed Green Belt of Fennoscandia forms a unique ecological corridor of old, highly productive, climax lowland scots pine (<i>Pinus silvestris</i>) and spruce (<i>Picea abies</i> and <i>Picea obovata</i>) forests through the boreal zone. Also the northernmost highly productive scots pine forests are included in the Green Belt of Fennoscandia.
	Fauna
	The insect and aphylloporaceous fungi populations of the area are well studied and a high number of threatened species has been found. The area includes endemic <i>Rangifer tarandus tarandus</i> and <i>R. t. Fennicus</i> . Large carnivores <i>Canis lupus</i> , <i>Ursus arctos</i> , <i>Gulo gulo</i> are common and also an endemic landlocked salmon belongs to the fauna.
	Cultural heritage
	Karelian hill villages are a unique feature of the southern part of the area, while the areas where the Finnish national epic Kalevala has been collected are the backbone of Karelian culture on both sides of the Finnish – Russian border. There still exist local cultures of Sami and Karelian people and a long hunting and fishing history of people living in and of the forests.
Management status	Management of individual sites
	– Existing national parks, strict nature reserves and other reserves including Biosphere Reserves do have their management plans and administration.
	– Proposed national parks, other nature reserves and Natura 2000 sites: a few key areas lack a legal status and the legal/administrative process needs to be completed.
	Management opportunities

Landscape ecological planning and other instruments are needed in the areas between the individual reserves to ensure better integrity over the Green Belt.

- Green Belt needs to be defined as an international transboundary unit between partner countries.
- Management structure has to be created; Biosphere Reserve management guidelines are an option to handle extensive areas and create the connection between people and nature reserves.

Threats

Local human populations Population density is low, and concentrated mainly outside of the proposed Green Belt protected areas.

Tourism potential Tourism potential is fairly high. Lots of infrastructure exist and World Heritage nomination would collect new entrepreneurs for ecological tourism.

Scientific research potential The border area between Russia and Finland is a remarkable natural laboratory through boreal forest zone. The surrounding areas represent two different land use regimes and there already is a lot of research being done. Several biological field stations are situated in the area.

Gaps filled in the Eurasian boreal system The proposed area is an outstanding example of the boreal system within Fennoscandia and forming of ancient bedrock, ice age formations and boreal coniferous ecosystems.

Current status of development The concept is under preparation in Russia, Finland and Norway.

Name The Northern Kvarken

Brief Description The Northern Kvarken has outstanding universal value for the understanding of how glacial and deglaciation processes form a landscape. The Northern Kvarken is the most representative area in the world for studying moraine archipelagos and the land uplift phenomena.

Recommendations of workshop Extension of site

Components of cluster The Northern Kvarken is a narrow strait between Sweden and Finland across the Gulf of Bothnia. It is only the Finnish part of the Northern Kvarken that is going to be proposed for the World Heritage List.

The Northern Kvarken is proposed as a serial nomination and extension of the High Coast World Heritage Site.

Nature conservation programmes accepted by the State Council and nature reserves within the area:

Name	Land (ha)	Water (ha)	Total (ha)
1. Mickelsörarna	1 950	20 159	22 109
2. Kvarkens skärgård	2 819	14 796	17 615
3. Norra Vallgrund-Sjudarsgrundet		89	89
4. Finnvekan-Rudskärsfjärden	271	243	514
5. Torgrunds skärgård	720	116	9 836
6. Halsön-Rönnskär-Norrskär	2 578	68 752	71 330
7. Valsörarna-Björkögrunden	650	14 350	15 000

Area of cluster 3 263 km²

Region and countries Fennoscandia, Finland

Proposed by Finland

Potential WH Criteria Ni

Features that may meet Processes

‘Outstanding Universal Value’ The High Coast World Heritage Site is situated only approximately 150 km south of the Northern Kvarken. These two areas represent complementary examples of post-glacial uplifting landscapes.

- The High Coast gives the paramount picture, exposing a long-term history of landscape evolution (almost 10 000 years) along steep sloping shorelines over a short geographical distance (2 to 3 km). The Northern Kvarken contrasts rather

than compares with the High Coast. They are complementary geological and biophysical extremes in the pattern and process of post-glacial rebound of land in the greater Baltic region.

- The Precambrian bedrock and peneplanation and the long lasting erosion form a peculiar platform for the dynamic on-going geological processes. Due to the low terrain, the Northern Kvarken area covers the last 2 000 to 3 000 years of land uplift history over a 30 to 70 km distance.
- The area is situated in the centre of the Fennoscandian land uplift area, with an overall net uplift rate of 8 to 8,5 mm per year. At a maintained uplift rate Finland and Sweden will become connected with a land bridge across the Kvarken strait in 2 500 years. The Bothnia Bay will then become the largest freshwater lake in Europe.
- The most visible evidence of the on-going processes of land uplift is the morphological and topographic consequences of the advancing shoreline: the landscape change constantly and provide evident examples of ecosystem change. The main trend is successions from wetter to drier ecosystems.
- The area provides excellent examples of sequences of sea bays isolating and transforming into freshwater lakes.
- On-going processes of primary peat formation, basin filling, and paludification, are well represented.

Physical features (geology, geomorphology)

The unique landscape and landforms of the Northern Kvarken archipelago are mostly built up by the glacial events and formations of the last Ice Age. The Northern Kvarken is characterized by extensive moraine archipelagos, a shallow brackish sea (low salinity 0,4-0,5%). The area includes 6 550 islands and a total shoreline of 2 840 km.

The major geomorphologic feature, which makes the Northern Kvarken area extraordinary, is the spectacular De Geer moraine fields.

- The De Geer moraines are exceptionally well formed, representative, and frequently appear in large fields within the area. Also, Hummocky moraines and other types of moraine ridges occur.
- At larger depth in the Northern Kvarken Strait, where the sea bottoms have not yet been exposed to disturbances, the moraines have the same form as when they were created by the inland-ice. Owing to the on-going land uplift process, these will eventually rise above the sea surface, as further invaluable geological records.

Management status	The islands and surrounding sea within the proposed area are under the protection of environmental legislation in Finland, which regulates and ensures the integrity of the geological and ecological features. The most valuable areas are included in the nature conservation programmes accepted by the State Council and/or established nature reserves. Detailed management planning for the nature reserves and Natura 2000 areas in the Northern Kvarken has been started. A pilot study for a management plan to the whole Kvarken area has been done by Finnish and Swedish environmental authorities.
Potential threats	Within the proposed area, no mineral resources are found. Due to the land uplift phenomena, dredging projects for harbors and boat channels occur frequently. Dredging is a potential threat to the unique geomorphology of the area, but is sufficiently regulated by the environmental legislation.
Local human populations	There are about 2 500 people that live permanently within the area. In the summer the population increases due to the 600 summer cottages.
Tourism potential	Tourism potential is fairly high, but for the time being the pressure from visitors is low. Most tourists visit areas outside the nature reserves and Natura 2000 network. A plan for tourism and recreation for the Kvarken area has been conducted under the framework of a special Sweden-Finland cooperation project, "Archibald", supported by EU.

Scientific research potential	The Northern Kvarken is the most representative area in the world for studying moraine archipelagos and the land uplift phenomena. The area is easily accessible and within a small area you get an excellent survey of the on-going processes in the archipelago landscape. The Kvarken area has been the focus of geoscientific interest studying isostatic land uplift, moraine geomorphology of last deglaciation and post-glacial coastal development in Bothnia Bay area.
Gaps filled in the Eurasian boreal system	The proposed area is an outstanding example of a land uplifting brackish water moraine archipelago in the boreal zone.
Current status of development	The concept is under preparation in Finland and Sweden.

Name	Saimaa-Pielinen Lakeland
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Brief Description	Saimaa-Pielinen lake system is an outstanding example of a glaciated terrain with unique features and exceptional beauty. The current lake system reflects the complex interplay of (1) ancient plate tectonic processes (structures and fracturing of the bedrock); (2) erosion and deposition underneath the ice-sheets ('roches-moutonnees', drumlins etc.); (3) deposition related to the final deglaciation (eskers, end-moraines etc.); (4) the impact of the post-glacial uplift to the tilting of the basin of the great lake of Saimaa and its isolation from the Baltic sea.
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Recommendations of workshop	Potential new site
Geographical location and components of cluster	Serial nomination of national parks and other protected areas in Finnish territory along Saimaa-Pielinen Lakeland inside a rectangle of NW: 63°15' N 28°00' E SE: 61°00' N 30°00' E

A tentative list of sites for the serial nomination includes:

Area	Main Protection Status	Land and water area (ha)
1. Koli	National Park	3 000
2. Kolvananuuro	EU Natura 2000	180
3. Hyypiä Dolomite		180
4. Orivesi-Pyhäselkä	EU Natura 2000	16 000
5. Kermajärvi	EU Natura 2000	6 100
6. Kolovesi	National Park	8 000
7. Joutenvesi-Pyyvesi	EU Natura 2000	15 300
8. Linnansaari	National Park	26 500
9. Pihlajavesi	EU Natura 2000	36 700
10. Punkaharju	EU Natura 2000	700
11. Puruvesi	EU Natura 2000	32 000
12. Hevonniemi	EU Natura 2000	6 500
13. Katosselkä	EU Natura 2000	13 300
14. Lietvesi	EU Natura 2000	19 300
15. Peltoinkangas-Kylänniemi	Esker Conservation Area	2 200
16. Ilkonselkä	EU Natura 2000	7 400
Total Land and Water Area (ha)		193 280

Region and countries	Fennoscandia, Finland
Proposed by	Finland
Protection	All sites, except 3) Hyypiä Dolomite have national conservation status, and all except 3) Hyypiä Dolomite and 15) Peltoinkangas-Kylänniemi belong to Finland's proposal for EU Natura 2000 network.
Potential WH Criteria	Ni, Niii

Features that may meet 'Outstanding Universal Value'

Saimaa-Pielinen Lakeland is an outstanding example of a glaciated terrain with unique features including:

- Mosaic-like, complex lake system with exceptionally high shoreline/area ratio and high number of islands with boreal forest.
- Diversity of different landforms of glacial origin like complex esker systems and vast end-moraines.

The current lake system reflects the complex interplay of (1) ancient plate tectonic processes (structures and fracturing of the bedrock); (2) erosion and deposition underneath the ice-sheets ('roches-moutonnees', drumlins etc.); (3) deposition related to the final deglaciation (eskers, end-moraines etc.); and (4) the impact of the post-glacial land uplift to the tilting of the basin of the great lake of Saimaa and its isolation from the Baltic Sea.

The evolution of the landscape is a combination of the very ancient Precambrian geological history (2400 – 1800 Million years ago) and the youngest (2 Million to present) Quaternary glacial events.

Processes

Significant on-going long-term geological process in the development of landforms and geomorphic or physiographic features:

- Natural dynamics of continuously changing lake-land system due to the ancient long-term plate tectonics. (Ni)
- Glacio-isostatic land uplift during the post-glacial and its affect on isolation of the present Saimaa-Pielinen lake system from the Baltic waters. (Ni)

Post-glacial geological dynamics has effected as a major environmental factor for species and site types, and in the development of the human culture utilizing forests and lakes.

Physiographic features (geology, geomorphology)

Saimaa-Pielinen Lakeland is an outstanding example to illustrate the major stage of global history, including the record of life: development of the earth's crust and geomorphology during the last half period of earth's existence and the post-glacial development of significant geomorphic or physiographic features of the earth.

- Fennoscandian shield, ancient bedrock, more than 2 000 000 years eroded low hills of different demorphic rock types and tectonic-metamorphic history due to the collision of ancient continental plates. (Ni)
- Examples of the ancient global atmospheric change: the development of O² content in the atmosphere. (Ni)
- Fracturing and tectonics of the Precambrian Fennoscandian shield and formation of the labyrinth of watercourses to the mosaic-like bedrock relief. (Ni)
- Low, annually rotating and annually ice-covered large boreal sweet water lake system. (Ni)
- High diversity of glaci-fluvial formations: gravel deposit eskers from the oldest (Archaean Huronian glaciation 2 500 Ma) and the latest (Quaternary Era 2 Ma) Ice Age on the earth, end moraines of three Salpausselkä formations (less than 12 000 years old), hummocky moraines, sandy beaches and glacial clay deposits. (Ni)
- Exceptionally long shoreline (25 000 km in the Saimaa-Pielinen Lakeland) between sweet water and boreal forest ecosystem and exceptionally high density of boreal forest islands (more than 14 000 islands over one hectare) in the lake system. (Ni)
- Outstanding multi-diverse combination of water, shoreline and low hill topography in the natural or semi-natural landscapes make Saimaa-Pielinen Lakeland an area of exceptional natural beauty and aesthetic importance. (Niii)

Post-glacial geological history has created a major environmental impact into the development of this large-scale sweet water ecosystem with annual 5-6 months ice cover without permafrost.

Climate

The area is located on the border zone between the maritime Atlantic climate and continental North Eurasian climate.

Vegetation

Saimaa-Pielinen Lakeland lies in the western margin of Eurasian taiga with two boreal sub-zones included. It forms a unique ecological complex introducing the post-glacial forest revival and the environmental impact of man managing the environment immediately after the last Ice Age until the modern times. The natural and cultural biotopes are well studied and include rare or vulnerable site-types and species. The area forms a unique complex of relict vegetation of semi-natural landscapes depending on the anthropogenic fires in forest environment created by Savo-Karelian slash-and-burn culture in the boreal forests during the last millennium including grazing of forests.

Fauna

The vertebrate and insect populations of the area are well studied and several threatened species have been found. Several species are relicts due to the isolation from sea, or due to changes in land use. Saimaa-Pielinen Lakeland is famous for its endemic landlocked sub-species of ringed seal (*Phoca hispida saimensis* - Nordq), with current population of about 250; it is included in the IUCN Red Data Book. The area supports endemic large carnivores like *Ursus arctos*, *Lynx lynx*, and *Canis lupus*, and a landlocked salmon (*Salmo salar m. sebago* - Girard) belongs to the fauna. Due to the long-term isolation not only the genotype and phenotype of some species have changed, but also the social behavior of some species has changed to more individual and independent; as is the case with seals in Lake Saimaa vs. seals in Lake Ladoga or in the Baltic Sea.

Management status Majority of land is owned by the Finnish Government and managed by government authorities for conservation. The key areas have formally approved management plans, and the funding for management is covered by state budget. Some Natura 2000 sites do not have the management plans as of yet.

Most of the area has either the general plan or regional plan, where the needs of nature protection have been reconciled with the land use for building and other economic purposes.

Threats Because of the high legal status, public land-ownership, long tradition of management planning and public funding, there are no remarkable potential threats on Saimaa-Pielinen Lakeland, especially concerning the geological values. Great efforts are put to the Conservation of Saimaa ringed seal. Minor potential threats are controlled by a variety of protection measures in the field. Environmental education and specific information is provided through a network of nature centers.

Local human populations

The number of people living in the proposed areas is almost nil. The population density outside the areas is low. The conservation of these areas is realized according to the existing national laws, which means that the local people do not lose, or are fully compensated for any loss of rights to use or access to the areas.

Tourism potential Tourism potential is fairly high. The Lakeland in Eastern Finland forms a major attraction for domestic and international tourists, especially on summer holiday season. Tourism creates today directly or indirectly an important source of livelihood for a large part of the population on the lake district.

Scientific research potential The Saimaa-Pielinen Lakeland is a well-studied geological, ecological and cultural complex. There are several research institutes, universities and museums/heritage centers in nearby surroundings of the sub-areas of the cluster. Some of these institutes even have field stations inside the area. A large number of research reports have been published about these sites during last 100 years. However, the potential for research is still higher, because of the extremely high geo-diversity completed with high biodiversity and cultural diversity.

Gaps filled in the Eurasian boreal system The proposed area cluster is an outstanding example of the boreal nature within Fennoscandia and Northern Eurasia, introducing:

- Long-term development and erosion process of ancient continent

<p>Current status of development</p> <p>Comparison with other similar properties</p>	<ul style="list-style-type: none"> - Including both the oldest and the latest Ice Age formations on earth - The large shallow boreal sweet water lake system as a geo-ecological complex <p>The concept is under preparation for Finland's update of the Tentative List in 2004. This has included public hearings in the municipalities.</p> <p>The Saimaa-Pielinen Lakeland is unique in the world. The only comparative areas are other lake areas in Finland (Lake Päijänne), Karelia (Lake Ladoga and Lake Onega), Russia (Lake Baikal) and in glaciated terrains of Canada (Lake Superior, Lake of the Woods) but their geologic history and on-going processes do not contain such comprehensive and extremely long-lasting development of the geological landscape with the records of life.</p> <p>In places, there is more shoreline in Saimaa-Pielinen Lakeland area per unit of area than anywhere else in the world, the total length of shoreline being nearly 25 000 km. The number of islands in the Saimaa region, 14 000, also shows what a maze of detail the system contains. The mosaic-like structure, zigzagging shoreline, and annually freezing and circulating water in a shallow basin in the Saimaa-Pielinen Lakeland is unique and outstanding when comparing to other lake areas (e.g. Lake Superior shoreline (including islands) 4 385 km, Lake Ladoga 1 570 km and Lake Baikal 2 100 km).</p> <p>The lakes Ladoga and Superior are more basin-like lakes showing the lobate erosional behavior (zungendecke form) of the continental ice sheet. Both lakes are located on the junction between Precambrian shield area and younger sedimentary strata, as contrary Saimaa-Pielinen Lakeland is located totally on Precambrian craton. The Lake of the Woods has similar geomorphology than Saimaa-Pielinen Lakeland including some 14 000 islands, but most of the area is located on Paleozoic sedimentary bedrock showing large glacial lobate forms in the southern and western parts of the lake. The Lake of the Woods is located largely behind large campaign moraine dating back 16 000 years from present. The lake is a remnant off former glacial Lake Agassiz.</p> <p>The Lake Baikal is totally different being located in a tectonic active fault zone (annually up to 2 000 earthquake tremors) and representing worlds deepest freshwater basin (max depth 1 620 m). The Lake Baikal has existed nearly in present geomorphologic form even 25 million years.</p>
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Name	Aapamire Complexes of Northern Finland
Brief Description	
Recommendations of workshop	
Features that may meet 'Outstanding Universal Value'	
Potential WH Criteria	
Protection	
Integrity	MISSING DATA
Threats	
Support	
Government	
Professional	
NGO	
Local indigenous	

Norway

Name	North Norwegian Fjord Landscape
Brief Description	<p>This landscape contains of two separate areas:</p> <ul style="list-style-type: none">– Rago National Park established 1971 with an area of 165 km²– Tysfjord/Hellemobotn, a proposed national park due to St.meld. nr. 62 (1991-92). <p>The area is roughly 1 000 km²</p> <p>This is the Norwegian part of a Swedish/Norwegian World Heritage area. The Swedish Lapponian World Heritage area was put on the list in 1996. Thus, this area is an extension of an already existing World Heritage site. Both Rago and Tysfjord/Hellemobotn are bordering the Lapponian World Heritage site.</p> <p>The Norwegian part is not submitted to the World Heritage office in Paris, but it is on the official Norwegian tentative list.</p> <p>The Lapponian area fulfills all natural criteria Ni, ii, iii, iv and also one cultural criterion. Thus, the Norwegian part of this area will support all the natural criteria in the Lapponian World Heritage site. However, the Norwegian area fulfills several criteria on its own.</p> <p>The combination of magnificent scenery, ancient cultural landscape and a living Lule Sami settlement beside Hellemofjorden is unique. The area consists of an extensive, unspoiled mountain massif with varied topography, ranging from high peaks in the northwest to a rounded upland plateau landscape in the east. The mountainous area is broken up by a highly branched system of fjords and many large and small U-shaped valleys. The scenery is characterized by large, smoothly polished, sloping slabs of rock on the mountainsides, and a karstic landscape dotted with numerous caves. Whereas the mountainsides have little drift, the valleys contain huge thickness. The shortest distance on the Scandinavian peninsula between the fjord and main watershed occurs in this area. A wide range of vegetation types is found here, including coniferous woodlands in Hellemobotn and Mannfjordbotn that certainly deserve protection.</p> <p>The Tysfjord/Hellemobotn area is a core area for the Lule Sami settlement in Norway and has many important cultural monuments from earlier settlement phases, representing appreciable cultural-historical values.</p> <p>Some remarkable discoveries from the interglacial periods have recently been made in the Kjøpsvik caves. Skeletal remains of martens, harp seals, wolves, grouse and field voles dated between 22 000 and 31 000 years ago, indicate that the climate then was completely different from what was previously assumed. Polar bear remains dated to 115 000 years ago have also been found. The view that there has been a compact ice cap over Scandinavia therefore needs revising.</p> <p>When the ice retreated from the Rago area at the close of the last ice age, it left behind numerous large and small granite blocks which now form a remarkable element of the landscape as they lie scattered around in the terrain. The forested part of Rago is characterized by pine along rivers and small lakes, but upland birch (<i>Betula pubescens</i>) gradually takes over up the slopes towards the tree line. Birch as the tree line forming species is a characteristic feature of the Scandinavian tree line.</p> <p>The most exciting member of the fauna in the Rago area is the wolverine, which has its dense and hunting territories in this area.</p> <p>Extension of site</p>
Recommendations of workshop	<p>The North Norwegian Fjord landscape is an extension of the Lapponian World Heritage site. Together, they fulfill all natural criteria and also one cultural criterion. Additionally, the North Norwegian Fjord Landscape fulfills two natural and one cultural criterion on its own. The Lapponian and the North Norwegian Fjord landscapes provide a unique basis for the preservation of large ecological systems in the Atlantic part of the Eurasian boreal forest, and this is an outstanding example representing significant on-going ecological and biological processes in the evolution</p>

	and development of terrestrial, freshwater and coastal boreal ecosystems.
Features that may meet 'Outstanding Universal Value'	
Potential WH Criteria	<p>Natural criteria</p> <p>i) The area provides an exceptional cross-section of Quarternary geological processes on the Scandinavian peninsula.</p> <p>iii) A landscape that is full of contrasts, providing magnificent experiences; ranges from a dramatic fjord landscape to peaceful upland plateaus.</p> <p>Cultural criteria</p> <p>v) Representative cultural monuments from the time of the hunter-gatherers to the present day. Exceptional example of Lule Sami settlement and cultural landscape.</p>
Protection Integrity	Together with the adjacent Lapponian area in Sweden, this area will provide a cross-section over the Scandinavia peninsula from the marine limit of the former inland sea in the Gulf of Bothnia to the fjord system of the Atlantic Ocean coast of Norway. A continuous area of open countryside without major forms of disturbance provides the basis for the preservation of large ecological systems in an extremely varied landscape.
Authenticity	A Lule Sami cultural landscape virtually untouched by recent disturbance of a technical nature has great value as a source and reference area for research.
Comparison with similar area	The Sami cultural monuments, the degree to which the area is unspoiled, its size and uniformity, and the variation in the types of scenery are unique.
Threats	
Support	
Government	The area is on the official Norwegian tentative list.
Professional	Supporting environment (see above).
NGO	Not known, but most likely a supporting environment.
Local indigenous	Unknown

Russia

Name	Basegi Nature Reserve
Brief Description	The site features model taiga landscapes of Middle Urals not disturbed by human activity.
Recommendations of workshop	Potential new site
Area	37 900 ha
Altitude	Ranges from 500 m to 994 m
Geographical location	The Reserve is located on western arms of Middle Urals. Geographical coordinates: 58° 47' - 59° 0' N, 58° 21' - 58° 34' E
Protection	IUCN management category I (Nature Reserve)
Potential WH Criteria	Ni, Niv
Features that may meet 'Outstanding Universal Value'	The Reserve features model mountain middle taiga landscapes of Western Urals. Typical primary mountain taiga plots conserved here are protected from felling. The Reserve fully presents flora and fauna of the vast Western Urals physical-geography province. The Reserve's peculiarity is shown in its high-mountain location on the west of Middle Urals, and owing to this the Reserve presents three vertical landscape belts: mountain-tundra (alpine) belt, sub-baldpeak (sub-alpine) belt and mountain-taiga belt. Four sub-belts are finely marked here: sub-baldpeak crooked forest sub-belt, mountain tundra, sub-alpine meadows and park-like open woodlands sub-belts.

Name	Kuril Islands
Brief Description	The first Russian site presenting the model natural complexes of the typical oceanic island arc with its own unique features, its tectonics, magmatism and relief

Recommendations of workshop	peculiarities, its specific biocoenosis. Potential new site
Name of protected areas	The object includes the following protected natural areas: a) Kurilsky State Nature (Reserve) (Kunashir, Demina and Oskolki Islands) with its buffer zone; b) “Maliye Kurily” Biological Reserve of federal significance (islands of the Smaller Kuril range: Shikotan, Zeleniy, Yuri, Tanfilyeva, and Anuchina Islands with adjacent rocks, reefs and marine protected area within the territorial waters of our country).
Altitude	From the sea level to 1 822 m (the Tyatya volcano on Kunashir Island).
Geographical location	The group of Kuril Islands stretches from the southwest to northeast from Hokkaido Island (Japan) to Kamchatka peninsula. The nominated site includes the part of Southern Kuril Islands (43°20' – 44°32'N, 145 °22'- 146°56' E) and the part of Middle Kuril Islands (45° 32' – 46° 12'N, 149° 19'- 150° 35' E).
Protection Criteria	IUCN management category I (Nature Reserve) Ni, Nii, Niii, Niv
Features that may meet ‘Outstanding Universal Value’	The area provides protection of numerous rare, endangered and endemic species of plants, and animals as well as unique ecosystems and natural phenomena.
Threats	Nearly complete absence of economic activities within the nominated object’s territory, combined with the remoteness from industrial centers, guarantee minimal contamination of the atmosphere and water and insignificant impact on the state of natural ecosystems of the islands. Kuril Islands are the region of extreme natural phenomena: earthquakes, volcanic eruptions, tsunamis, and typhoons. They are rather natural for the history of these islands and have been numerous. Natural communities of the islands became adapted to natural disasters.

Name	Magadansky Nature Reserve
Brief Description	The proposed site fully features the typical natural complexes of the vast Far East region.
Recommendations of workshop	Potential new site
Area	883 817 ha
Altitude	From the Sea of Okhotsk level to 1 548 m (Koni Peninsula).
Geographical location	The Reserve is located on the Russian Far East near the northern coast of the Sea of Okhotsk and has four clusters: <ul style="list-style-type: none"> – Kava-Chelomdzhinsky cluster (624 456 ha) is situated in the interfluvium of Kava and Chelomdzha Rivers and occupies part of Kava-Taujskaya valley. – Ol’sky cluster (103 426 ha) occupies the western part of Koni Peninsula. – Yamsky cluster (38 096 ha) consists of three parts. The main continental part includes 45 km of Yama River floodland. Another coastal part includes Pyagina Peninsula coastal line (1 km wide and 51 km long) from cape Cherny until cape Yapon. The third part includes Yamsky Islands located in the southern part of Shelikov Bay. – Seimchansky cluster (117 839 ha) is situated in the continental part on the left bank of Kolyma River. All clusters are separated from each other and are remote from the Office of the Reserve (located in Magadan) at the distance of 100-630 km. Average coordinates of the site: 146°50' N, 60°10' E.
Protection	IUCN management category I (Nature Reserve)
Potential WH Criteria	Ni, Niv
Features that may meet ‘Outstanding Universal Value’	The proposed site features natural ecosystems which are unique or extremely important from the point of view of biodiversity conservation. Yama and Chelomdzha Rivers are the largest salmon spawning grounds in Magadan region (humpback, chum, silver salmon). Silver salmon spawning grounds in Chelomdzha River are probably the most productive on the world scale. A vast area of

Taujskaya lowland is the regional main water birds reserve. Bird bazaars of Yamsky Islands are the largest in Northern Pacific region.

Many biocoenosis are located on borders of the areas or are considerably remote from them. For instance, in the middle stream of Kava River is located the Eurasian southern isolated hearth of nesting of white-fronted goose; on the largest of the Yamsky Islands lays the Sea of Okhotsk northern reproductive otary lair; relict hearth of Siberian spruce in Yama River basin is remote from its general growth areas in Yakutia and Khabarovsk Krai by 1 000 km.

Glacier forms of the Koni Peninsula relief are inscribed onto the List of World Geological Heritage.

- Threats
- No management activity is being carried out within the Reserve's area, including pioneering, agricultural activity, mining, etc. The Reserve's area is remote from settlements and is not inhabited by people, even the State inspectors' compounds are mostly located in the protection zone. Industry has only indirect influence on the state of natural complexes.
 - Kava-Chelomdzhinsky cluster. In Kava River upper flow within Khabarovsk Krai "Buvtykan" cooperative does gold association mining. Gold washing effluents can pollute the river and the Reserve located down the river flow.
 - Ol'sky and Yamsky clusters. Both clusters have water boundary passing along Koni and Pyagina Peninsulas and Yamsky Islands. In case of execution of the Sea of Okhotsk Shelf oil drilling project, oil and drilling waste can pollute the coast.
- Seimchansky cluster. In the upper flow of Kolyma River (Sinegorye village) is the Kolymskaya hydroelectric generation station. The significant water level fluctuation caused by its work has negative effects and leads to degradation of the chosenia-poplar societies located on the reserved islands.

Name	Malaya Sos'va Reserve
Brief Description	This is the first site featuring typical natural complexes of Western Siberia middle taiga.
Recommendations of workshop	Potential new site
Area	225 600 ha
Altitude	40 - 200 m above the sea level.
Geographical location	The Reserve is located in the Northern Trans-Urals, on the west of Western Siberia.
Protection	Geographical coordinates: 61° 45' - 62° 30' N, 63° 50' - 64° 30' E. IUCN management category I (Nature Reserve)
Potential WH Criteria	Niv, Nii
Features that may meet 'Outstanding Universal Value'	The Reserve conserves typical natural complexes of Western middle taiga of Siberia, the main habitat of aborigine European beaver population (inscribed into the Red Data Books of IUCN and Russia) and many disappearing prey bird species.
Threats	Industrial felling on the adjoining areas. External influence of transport, transmission lines, main line pipes, railway in connection with their service and construction. Pollution of the region with petroleum products and sewage connected with expansion of villages, increasing of the number of watch crew villages of lumber, oil and gas production industry.

Name	Pinezhsky Reserve
Brief Description	This is the first Russian site featuring unique karst formations with an outstanding physical-geography and aesthetic value.
Recommendations of workshop	Potential new site
Area	51 500 ha
Altitude	100 – 200 m

Geographical location	The Reserve is located on the north of the East European plain, in the middle flow of Pinega River, the Severnaya Dvina tributary. Geographical coordinates: 64° 35' - 64° 46' N, 42° 57' - 43° 25' E.
Protection	IUCN management category I (Nature Reserve)
Potential WH Criteria	Ni, Niii, Niv
Features that may meet 'Outstanding Universal Value'	The area of the reserve widely presents karst formations, unique in the international scale. They have an outstanding physics-geographical and aesthetic value. Very rare underdeveloped coarse humus are spread here. Biocoenosis of the reserve feature many relict, endemic and rare flora and fauna species.
Threats	At present time neither the area of the reserve nor the territory adjacent to its boundary are subject to any serious threat to the natural complexes. The region has no developed industry and transport network.

Name	The Putorana Plateau Natural Complex
Brief Description	This is the first Russian site located completely beyond the polar circle and featuring mountainous north-taiga and tundra natural complexes, the largest Siberian basalt trapp highland abound with unique relief forms, habitat of the narrow-endemic specie – the Putorana bighorn sheep.
Recommendations of workshop	Potential new site
Area	1 887 251 ha
Altitude	300 – 1701 m (the highest point - Kamen' peak)
Geographical location	The Nature Reserve is located within the Putorana plateau in the north-western part of the Central Siberian plateau, to the south of the Taimyr Peninsula. The territory of the Reserve is bordered by the following geographical coordinates: 68°24' - 69°53' N, 91°45' - 96°38' E.
Protection	IUCN management category I (Nature Reserve)
Potential WH Criteria	Ni, Niii, Niv
Features that may meet 'Outstanding Universal Value'	The Plateau is distinguished by its outstanding peculiarity of relief that is not found anywhere else in the world. Basalt traps cut by deep canyons, enormous number of waterfalls, over 25 000 lakes. The Putorana is the only habitat for many representatives of flora and fauna, including the bighorn sheep – one of the largest mammals of the world. The area of the Reserve is crossed by the world's largest wild reindeer population migration route.
Threats	New forms of human influence on ecosystems of the Putorana plateau relate to building of villages, mineral extraction, pollution of the atmosphere by industrial waste, using of caterpillar transportation, recreational pressure, poaching. All the above forms are negative consequences of the development of the biggest polar Norilsky territorial industrial complex. At present these factors influence only in the western part of the plateau (the buffer zone of the Reserve) and do not sufficiently damage the Reserve's biocoenosis. The main enterprise with the negative influence on the Reserve's nature is Norilsky mining metallurgical plant, which is situated 150-200 km away from the western border of the Reserve. Plant's bursts containing oxides of sulphur, carbon, dust, and heavy metals lead to degeneration of vegetation cover in the western part of protection zone.

Name	The Western Sayan
Brief Description	The reserve represents model natural complexes of the Sayans which, having avoided transformations by man's economic activity, are of exceptional and universal value in terms of protection of biodiversity.
Recommendations of workshop	Potential new site
Area	390 400 ha
Altitude	600 – 2770 m.

Geographical location	The reserve is located in the south of Eastern Siberia in the center of the Western Sayan. Geographical coordinates: 51°50' - 52°35' N, 91°30' - 92°25' E.
Protection	IUCN management category I (Biosphere Reserve)
Potential WH Criteria	Nii, Niii, Niv
Features that may meet 'Outstanding Universal Value'	The territory of the reserve is of exceptional and universal value in terms of conservation of biodiversity. It presents a large amount of endemic, relict, as well as rare plant and animal species. Moreover, the area deserves attention as research testing ground to study the influence of a reservoir on the environment.
Threats	The reserved territory is one of few areas in the Sayans where man's intense activity cannot be felt. This is due to its remoteness from major areas of economic activity. Without any transportation routes, the area was never exposed to wood cutting or extraction of minerals. Hunting and cattle breeding was done on a minimum scale. No economic activity is being envisaged on the reserved territory and in its vicinity.

Name	Tsentralno-Sibirsky State Nature Reserve
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Brief Description	Model undamaged natural complexes of the zonal taiga of Central Siberia and central part of the continent.
Recommendations of workshop	Potential new site
Area	972 017 ha
Altitude	100 - 600 m
Geographical location	Central Siberia, the right bank of the Yenisei River within the borders of Central Siberian Plateau and westernmost part of Western Siberian Plain. Geographical Coordinates: 61°45' - 63°05' N, 88°30' - 92°10'E.
Protection	IUCN management category I (Biosphere Nature Reserve)
Potential WH Criteria	Nii, Niv, Ciii
Features that may meet 'Outstanding Universal Value'	The Reserve's territory and area of water reflect all the characteristic features of the nature of Central Siberia and the Central part of the continent. The Reserve's terrain is of utmost importance for conducting ecological research in the conditions of a borderline area between two large physico-geographical lands.
Threats	No mineral deposits are found on the Reserve's territory. However, there are vast Tungusky coal and iron ore basins as well as a large deposit of manganese ores close to its borders. In the future, a large mining and processing industrial complex is likely to be built.

Name	The Tungusky phenomenon
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Brief Description	The site is unique not only in Russia, but on the international scale. The Reserve is the only nature conservancy area protecting the region of the most powerful space body explosion which has happened in the near past.
Recommendations of workshop	Potential new site
Area	296 700 ha
Altitude	250 - 533 m
Geographical location	The Reserve is situated in the Eastern Siberia, on the south of Central Siberian plateau. Geographical coordinates: 60°25' - 61°10' N, 101°30' - 102°35' E.
Protection	IUCN management category I (Nature Reserve)
Criteria ranking	Ni, Nii, Niv
Features that may meet 'Outstanding Universal Value'	Tungusky Reserve aims at conserving the area of a unique natural phenomenon – the explosion of a space body, which is known as “Tungusky meteorite”. Natural features of the area give possibilities for carrying out complex investigations, directly connected with ecological consequences of the Tungusky catastrophe, e.g. general environmental studies.
Threats	At present the ecosystems of the Reserve do not suffer any human influence and can be considered in a model state of conservation.

Name	Valdai – the Great Watershed
Brief Description	The site features perfectly maintained south-taiga complexes which have an outstanding significance as a kind of biodiversity refugium of the Russian plain. Cultural landscape of the Great Watershed is the unique evidence of the traditional way of living of the Russian village. This is the first Russian object nominated as the mixed natural and cultural site.
Recommendations of workshop	Potential new site
Name of protected areas	Valdaisky National Park Central Forest State Nature Biosphere Reserve
Area	158 461 ha 24 447 ha
Altitude	Ranges from 63 m to 296 m Ranges from 220 m to 280 m
Geographical location	Valdaisky National Park is located in the north of the Valdai Hills (the European part of Russia). Geographical coordinates: 58°21' - 57°25' N, 32°45' - 33°35' E Central Forest Reserve is located in the south-west of the Valdai Hills. Geographical coordinates: 56°26' - 56°39' N, 32°39' - 33°01' E
Protection	IUCN management category II, I (National Park, Nature Reserve)
Potential WH Criteria	Ni, Niv, Cv
Features that may meet 'Outstanding Universal Value'	Area of the site is the unique part of the Great Watershed of the Russian plain, including the headwaters of three great rivers (Volga, Dnieper and Zapadnaya Dvina). Through those watershed cultures of the East and the West, the North and the South have been interpenetrating into each other. Despite the development of the area from ancient times, the Valdai Hills has maintained its primevalness and higher biodiversity than other regions of Eastern Europe. The nominated site is the richest flora and fauna gene fund repository in the center of Eastern Europe.
Threats	<ul style="list-style-type: none"> – The main source of pollution of the national park is Moscow-St. Petersburg highway crossing its area. It has high traffic intensity and is treated with salt-sandy defrosters. – The most significant relief damage is connected with local mine rocket positions liquidation within the frames of the (OCB-2) SALT II. Sanitation and recultivation of this area is performed by means of the Defense Ministry. – The largest threat for natural complex of the national park were construction projects of Moscow-St. Petersburg railway and of State regional electric generating station (in 20 km away from the buffer zone from the side of prevailing north-western winds). Owing to efforts of public and law bodies realization of these projects has been stopped. – Location on the watershed rules out the possibility of polluting waters of the protected area, and absence of large pollution sources near the Reserve's area and considerable forest covered area of adjacent territories bring air pollution to minimum. All this provides background environmental stability of the Reserve.

Name	The Bikin River valley (for extension of "Central Sikhote-Alin" World Heritage site)
Brief Description	The territory of the Bikin River valley represents an unique natural complex with "Central Sikhote-Alin" World Heritage site and can be proposed as an extension of this Site.
Recommendations of workshop	Extension of site
Name of protected areas	a) Regional landscape Preserve "Verkhnebikinsky" b) Territory of the traditional nature use (TTNU) of the Udege indigenous people.
Area	a) Preserve – 746 482 ha, b) TTNU – 407 764 ha
Altitude	Ranges from 200 m to 1 933 m

Geographical location	Landscape Preserve and TTNU are situated at the Russian Far East in the limits of West and East of the Central Sikhote-Alin macroslopes in the upper and middle parts of the Bikin River valley. The territory is limited by the geographical coordinates: 46° 10' - 47° 20' N, 135° 25' - 137° 54' E
Protection	IUCN management category a) IV (Landscape Reserve) b) IV (Territory of the traditional nature use)
Potential WH Criteria	Nii, Niv, Ciii
Features that may meet 'Outstanding Universal Value'	The largest integral massif of natural cedar-brad-leaved forests has been preserved in the Bikin River valley. The territory of the Bikin valley serves as a reproductive center of the Northeast group of the Amur tiger. The valleys of the Bikin and Bolshaya Ussurka (Iman) Rivers are the last in the world preserved places of inhabitancy of the representatives of the small by their number Far East peoples, such as Iman and Bikin groups of Udege.
Threats	The danger of the industrial pollution doesn't exist for the territory of upper and middle Bikin because there aren't any industrial enterprises in the upper flow of the river basin. Fires are the main possible large-scale influences to the natural complexes that are situated on the west macro-slope of Sikhote-Alin. The total level of poaching for this territory as a whole is higher. It provides a real short-termed influence on the populations of game animals and plant resources.

Annex 2. List of Participants

Title	First name	Last name	Title	Organization
Canada				
Mr.	Andrew M.	Deutz	Head	IUCN Canada Office
Mr.	Chris	Henschel	Director, Forest Programme	Wildlands League / CPAWS
Mr.	Ronald A.	Hooper	Superintendent	Jasper National Park
Mr.	Thomas E.	Lee *	CEO (ret.)	Parks Canada
Mr.	Nikita	Lopoukhine	Director General	Parks Canada
Mr.	William J.	Meades	Director, Forest Ecology	Natural Resources Canada
Finland				
Mr.	Jukka-Pekka	Flander	Senior Adviser	Finnish Ministry of the Environment Land Use Department
Ms.	Kerttu	Harkonen	Project Manager	Kalevala Parks
Mr.	Timo J.	Hokkanen	Expert, Coordinator	North Karelia Regional Environmental Center
Mr.	Tapio	Lindholm	Senior Scientist, Dr. Doc.	Finnish Environment Institute, Expert Department/ Nature Division
Mr.	Olli-Pekka	Turunen	Coordinator of Russian Forest Issues	NGO Finnish Association of Nature Conservation
France				
Ms.	Marjaana	Kokkonen	Associate Expert, Natural Heritage	UNESCO World Heritage Centre
Norway				
Mr.	Bard	Solberg	Boreal Forest Expert	Norwegian Directorate for Nature Management
Russia				
Mr.	Alexei K.	Blagovidov	Programme Coordinator	IUCN Office for Russia and CIS, Protected Areas Program
Mr.	Alexei	Butorin	Secretary	WH Committee of Russia
Ms.	Irina V.	Chebakova	Membership Officer	IUCN Office for Russia and CIS
Mr.	Oleg V.	Cherviakov	Director	Vodlozero National Park
Ms.	Natalia R.	Danilina *	Vice-Chair for Eurasia	IUCN World Commission on Protected Areas
Ms.	Katie	Gagnon	Specialist for World Heritage	UNESCO Moscow Office
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Ms.	Julia N.	Kuleshova	Program officer	IUCN Office for Russia and CIS, Protected Areas Program
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Dr	Vladimir M.	Razumovsky	Vice-president	Russian Geographic Society
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Ms.	Veronika M.	Tarbaeva	Head of Division for Protected Areas, Biodiversity Conservation and International Cooperation	Central Administration Board of Natural Resources and Environmental Protection of the Ministry of Natural Resources for St. Petersburg and Leningrad Region
Mr.	Alexei N.	Zadorozhny	Director General	International Center for Environmental Safety of Baltic Sea Region
Mr.	Alexei A.	Zavarzin	Scientific Secretary	Baltic Fund for Nature of SPNS

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