Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:
1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

1. Name and address of the compiler of this form:

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DD MM YY | Designation date | Site Reference Number

2. Date this sheet was completed: 1 October 2003

3. Country: LATVIA

4. Name of the Ramsar site: Northern Bogs (Ziemelu purvi)

5. Map of site included:
Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps.

a) hard copy (required for inclusion of site in the Ramsar List): YES

b) digital (electronic) format (optional): *yes* ✓ -or- *no* ☐

6. Geographical coordinates: 57°58'N 24°50'E

7. General location:
NW Latvia, Limbazi District, Valmiera District. Nearest towns: Staicele (1400 inhabitants,) located 11 km south from the wetland complex, Mazsalaca (2000 inhabitants) located 19 km southeast from the wetland complex.

8. Elevation: 50 metre (minimum) -60 metre (maximum) above the sea level

9. Area: 5318 hectares

10. Overview:
The site comprises two large raised bogs (Kodu-Kapzemes mire 2167 hectares, Olla mire 2903 hectares respectively). Kodu-Kapzemes mire represents an open raised bog with a large bog lake in the middle of the mire, surrounded by bog pool labyrinth and hummock-hollow complex. Small minerogenic islands within the bog are covered with pine forest relatively untouched by forestry. Olla Mire with the total area of 2949 ha is a typical open raised bog, comprising 2 large bog lakes (170 and 25 ha respectively), hummock and hollow complex with labyrinth of bog pools. Forests around the bogs comprise variety of different types, dominated by mixed forests.
Parts of both bogs are divided by the State border between Republic of Latvia and Republic of Estonia. Respective bog parts located within the territory of Estonia are protected there as

Reserve "Sookuninga". Together with Nigula Nature Reserve in Estonia (Ramsar site no. 910 since 1997, located approximately 1 km westwards from the Kapzemes bog) the whole area comprises one of the biggest untouched wetland complexes in the Baltic Republics. Marginal forests around the wetland complex on Latvian side are considerably drained.

11. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

12. Justification for the application of each Criterion listed in 11. above:

Criterion 1 The site is particularly good representative of near-natural bog , one of the biggest untouched wetland complexes in the Baltic Region. The wetland plays a substantial hydrological, biological and ecological role in the region, identified both as IBA and CORINE site, as well as International level Core area in Pan European Ecological Network scheme.

Criterion 2 It supports an appreciable assemblage of rare, vulnerable and endangered species of birds and plants, some of them occurring in great numbers or densities. It supports bird species of EU conservation interest, listed on Annex I of Council directive 79/409/EEC: *Gavia arctica, Circus pygargus, Pandion haliaetus, Grus grus, Philomachus pugnax, Falco columbarius, Anser alfibrons.* The globally threatened *Aquila clanga* (listed as vulnerable in IUCN Red List) has occurred during the breeding season (one pair in 1997, but breeding not confirmed).

Criterion 3 It is of special value for maintaining the genetic and ecological diversity of a region supporting nesting of bird species included in the Red Data Book of Latvia: *Circus pygargus, Falco columbarius, Gavia arctica, Pandion haliaetus, Numenia arquata, Aquila chrysaetos* (one of the 6 Golden Eagle nests in Latvia), as well as vast and healthy population of plant species included in the Red Data Book of Latvia – *Trichophorum cespitosum* and *Betula nana.*

Criterion 4 It is an area of outstanding value for migrating geese in autumn, with at least 10,000 roosting *Anser fabalis* and *A. albifrons*. Breeding species listed on Annex I of Council Directive 79/409/EEC include *Gavia arctica* (1-3 p), *Circus pygargus* (1p), *Falco columbianus* (1p), *Grus grus* (10p), *Pluvialis apricaria* (40-50 p), *Philomachus pugnax* (20-60 p), *Tringa glareola* (20-100 p) and *Lanius collurio* (20-60 p).

The site is also important for non-breeding/migrating *Grus grus* - at least 200 are regularly observed, but much more may occur, e.g. 800 seen across border at Nigula in autumn 1997. The site supports numerous species of summering waterbirds and acts as a stopover place for fall migrating birds.

Criterion 6

The site regularly supports substantial numbers of geese (migration): during 1997 – 2004 number of individuals varied from 3000 - 10000 for *Anser fabalis (*1% = 1 000 individuals). It also regularly supports 1% of the individuals in a Latvian population of *Gavia arctica, Pluvialis apricaria, Numenius phaeopus, Numenius arquata.*

13. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

a) biogeographic region:

Temperate and sub-polar broadleaf forests and woodlands belonging to the Boreonemoral province (*Udvardy, 1975*.).
Location of the Wetland complex within the temperate climatic zone, in the transitional area between the boreal coniferous forest zone in the north and the nemoral broadleaved forest zone in the south (Krauklis, 2000) contributes to natural diversity with features of both taiga, and broadleaved forest.

b) biogeographic regionalisation scheme (include reference citation):

According to the mire regionalisation scheme for the territory of U.S.S.R., the given wetland complex belongs to the Baltic Coastal Mire Province (Boch, M., Mazing, V., 1979) with characteristic dominance of open raised bogs with pool-hummock systems and vegetation characterised by presence of *Sphagnum magellanicum, S. fuscum, S. rubellum* associated with *Calluna vulgaris, Rubus chamaemorus, Andromeda polifolia, Oxycoccus palustris, Empetrum nigrum. Rhynchospora alba* and *Carex limosa* in bog hollows.

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14. Physical features of the site:
During the last glaciation, the territory was under the influence of two glacier lobes. The greater one moved along the depression of Baltic Sea, another, smaller - by Riga gulf depression.

Quaternary deposits consist mainly of basal tills (light or heavy loam with admixture of gravel and greater stones).The thickness of deposits within the plain part of mire complex varies between 10 and 30 meters.

Erosion prevailed within the territory during all Pleistocene glaciations. Almost flat glacial plain landforms mainly are not covered by meltwater sediments. Erosional landforms are good expressed due to relatively soft and well erodable bedrock (terrigene formations of Middle and Upper Devonian).

The feature of the plain is very gentle, almost isometric or slightly elongated shallow depressions, occupied by peat bogs. Depressions were created during last glaciations by glacial erosion – by heavy subglacial currents that flew under very high hidrostatic pressure as well as by direct erosional action of moving glacier.

The territory lies in the region of very stable tectonics – there are absent landforms made by movement of Earth crust and almost all elevations and depressions of the land are of glacial origin.

Prequaternary bedrock of territory is built-up by terrigenous Middle Devonian Arukila and Burtnieku formations. It consists of interlaying soft fine-grained sandstones, siltstones and clay with rare and uncommon interlayers and lenses of dolomitic concretions.

Wetland complex has originated due to surplus of precipitation, laying on quaternary deposits. The average depth of bog peat layer reaches from 6 (in the Kodu bog) to 7 m (in Ollas bog).

Climate is temperate, cool and humid. The average temperature of a year ranges from 5,0 to 5,5. The mean temperature is -6,5^0 C in January and 17^0 C in July. The sum of active temperature is about 1800^0 C. The average amount of precipitation ranges from740 to 767 mm per year, volatilization 456 -474, runoff 284 – 293 mm. In vegetation period (V-X) precipitation contributes 472 – 481, volatilization 375 mm, runoff 97 – 105 mm. Catchment consists mainly of forested areas as well from separated small agricultural plots. The lasting snow cover is formed in the middle of December and melted at the end of March (90 – 112 days). The average thickness of snow cover is about 24 cm. The frost free period in the area is 130 – 160 days. The growing season extends from mid April to mid October.

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15. Physical features of the catchment area:

Landforms of glacial erosion determine the mode of landscape within the territory. In total landscape has flat mosaic type pattern with orientation of elementary landscapes along the glacier movement. Difference of altitude within the wetland complex is 10 meters (50 -60 m above the sea level).

Soils are formed on glacial and melted water deposits on the sands deposited by Baltic Ice Lake, the Litorina and the Baltic Sea. Wetland complex is dominated by haplic histosols.
Land use within the wetland complex is characterized by forest cutting activities next to the outer borders of the protected area. Extensive and ceasing agricultural activities take place outside the protected area.

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16. Hydrological values:

According to the estimation about 187 million cubic meters of peat are stored within the wetland complex. This volume is significant water storage instrument, stabilising runoff to the River Salaca via R.Pigele. It in turn, has impact to the river Salaca, located 2 km southwards from the wetland complex, which officially is acknowledged as the fourth most productive spawning river for the natural Atlantic (Baltic) Salmon *Salmo salar* (HELCOM, IBSFC). Part of water enters the catchment of the R.Parnu.

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17. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines.*

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • <u>M</u> • N • <u>O</u> • P • Q • R • Sp • Ss • Tp <u>Ts • U</u> • Va •
Vt • W • Xf • <u>Xp</u> • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • <u>9</u> • Zk(c)

b) dominance: U, Xp, O, Ts, M, 9

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18. General ecological features:

Typical open raised bogs with hummock and hollow complexes, with present labyrinth of bog pools. Forests around the bogs comprise variety of different types, dominated by mixed forests. Most of the area covered by Active raised bogs (EU code 7110), Degraded raised bogs still capable of natural regeneration (EU code 7120), Transitional mires and quaking bogs (EU code 7140) and Natural dystrophic lakes and ponds (EU code 3160). This is one of the few bogs in

Latvia hosting both species of northern distribution *Betula nana* and species of western distribution *Trichophorum cespitosum*. Important site for conservation of *Leucorrhinia pectoralis*.

19. Noteworthy flora:

Bog vegetation is characterised by presence of *Sphagnum magellanicum, S. fuscum, S. rubellum* on hummocks associated with *Calluna vulgaris, Rubus chamaemorus*, *Andromeda polifolia, Oxycoccus palustris, and Empetrum nigrum. Rhynchospora alba* and *Carex limosa* communities are found in bog hollows. The species diversity is supported by a number of lichen species like *Cladina rangiferina, Cladonia sylvestris* and *Cladonia stellaris*, sometimes occurring in great abundance.

20. Noteworthy fauna:

Jointly with Nigula bog Reserve (Ramsar site no. 910. since 1997) and Sookuninga bog, this wetland complex regularly support more than 1% of the individuals in the relevant populations of *Anser albifrons* and *A. fabalis* (40,000-50,000), that stopover during autumn migration.

The mammals *Canis lupus*, *Alces alces*, *Castor fiber, Sus scrofa* and *Lynx lynx* live in marginal parts of the mire. *Ursus arctos* irregular migration from Estonia is observed.

A significant proportion (≥ 1%) of the Estonian *Grus grus* population breeds on the Estonian side of the wetland complex Ziemelu Purvi.

21. Social and cultural values:

Forestry is the main business sector outside the margins of wetland complex, followed by berry picking and fishery in the biggest lakes of the wetland complex – L.Soku (94 ha) and L.Ramatas Lielezers (170 hectares) respectively.

22. Land tenure/ownership:

(a) within the Ramsar site:

About 95% of the wetland area is owned by State, the rest is private.

(b) in the surrounding area:

About 60% of areas are owned by private owners, the rest in a form of forest areas is owned by State.

23. Current land (including water) use:

(a) within the Ramsar site:

Raised mires are seasonally used for berry picking. Two of lakes are used for local fishing (not for commercial use)

(b) in the surroundings/catchment:

Forest cutting are the main segment of activities, followed by low pressure and continually decreasing agriculture (pastures for cattle, hay making), as well for seasonal berry and mushroom picking. Outflow from the Mazezers in Olla bog is substantially impacted by beaver *Castor fiber* activities.

State ownership decreases down to 40% within the catchment of the wetland complex.

24. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

(a) within the Ramsar site:

Slight drainage impact in Olla mire marginal part due to presence of old ditches. Hunting on wetland margins, forestry activities and fishing have a negative influence during bird migration and breeding period. Fire can be mentioned as positive impact on invertebrates; however it is a threat for raised bog habitats. There is heavy peat erosion along the ditch coming out from Lielezers Lake and at the lake itself.

(b) in the surrounding area:

Intensive State forest drainage took place in the margins of the protected wetland complex in sixties. Nowadays forest ditches are scarcely maintained and during the last decades there is evidence of stabilisation of forest stands.

Intensive forest cutting in private forests around the wetland complex is recognized as important threat both to ecosystem integrity as well as possible implication to hydrological processes.

Migrating Geese and Cranes, as well as birds breeding in nutrient poor bog habitat and herbivores mammals are dependent upon agricultural land outside the wetlands for feeding. Many agricultural lands outside the wetland complex have become overgrown with bushes as a consequence of the continuing agricultural recession. This has directly impacted the availability of food for migrating birds, while indirectly landscape diversity has become unfavorable for spotting predators.

25. Conservation measures taken:

Since 1977, the State has protected the two Bog Reserves as separate unit (Kodu-Kapzemes Mire and Olla Mire respectively). Kodu-Kapzemes Mire together with Olla Mire was designated as protected nature area Ziemelu Purvi (Northern Mires).

Northern bogs were designated as one of three core areas for the North Vidzeme Biosphere Reserve in 1997

26. Conservation measures proposed but not yet implemented:

Currently (Since March, 2003) joint project with Nigula Nature Reserve (Republic of Estonia) entitled "Integrated Wetland and Forest Management in the Transborder area of North Livonia", financed by Pin-Matra (the Netherlands) has begun to develop joint Management plan for the transborder wetland complex.

27. Current scientific research and facilities:

The following State Monitoring Programmes are carried out within the Wetland complex:

- Monitoring of Moth and Butterflies (*Lepidoptera*),
- Monitoring of terrestrial soil invertebrates,
- Monitoring of biology of limnic systems (2 stations in bog lakes),
- Nesting bird census
- Monitoring of plant and moss distribution and diversity.

28. Current conservation education:

Due to the close location (2-4 km apart from the main wetland complex) of wetlands representing the same wetland type, in the same time having the similar plant and animal species composition, the main educational pressure is put on those marginal wetlands outside the core area, thus lowering potential deterioration of the proposed Ramsar site. Provisional educational route supported with adequate information, is elaborated, but due to the lack of finances, not yet fully constructed. There are several tens of specific visitors (mainly bird watchers and scientists) visiting the core area of wetland complex. The main flow consisting of several hundred of visitors are diverted to the marginal wetlands outside the given proposed Ramsar site.

29. Current recreation and tourism:

Currently tourism facilities are not developed in the close vicinity of proposed Ramsar site. Nevertheless, there are several local small scale pensions within the distance of 5 kilometers to the Wetland complex. There are proposals to develop eco-tourism trails crossing the marginal wetlands outside the core area of proposed Ramsar site.

Currently, till the elaboration of appropriate tourism management scheme, tourism to the central part of wetland complex is not advertised.

30. Jurisdiction:

About 95% of the territory belongs to the state and is managed by State Joint Stock Company "Latvijas mezi" ("Latvian Forest"), the rest of territory belongs to private owners. Control over use and protection regime is ensured by Regional Environmental Board and State Environmental inspectorate, management and use of forests is supervised by State Forest Service.

31. Management authority:

Limbazi District Forestry (for the wetland complex within the territory of Limbazi District)

Limbazi, Cesu str.39, LV-4001, Latvia

Valmiera District Forestry (for the wetland complex within the territory of Valmiera District)

Lilijas str.4, Valmiera, LV- 4200, Latvia

North Vidzeme Biosphere Reserve, Riga str.10.a, Salacgriva, LV-4033, Latvia

32. Bibliographical references:

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