

# Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version

Available for download from [http://www.ramsar.org/ris/key\\_ris\\_index.htm](http://www.ramsar.org/ris/key_ris_index.htm).

*Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8<sup>th</sup> Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX.22 of the 9<sup>th</sup> Conference of the Contracting Parties (2005).*

## Notes 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. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2<sup>nd</sup> edition, as amended by COP9 Resolution IX.1 Annex B). A 3<sup>rd</sup> edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

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

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Designation date

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Site Reference Number

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### 2. Date this sheet was completed/updated:

10 September 2010

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### 3. Country:

Lithuania

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### 4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Kamanos bog

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### 5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only):

- a) Designation of a new Ramsar site ; or  
b) Updated information on an existing Ramsar site

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### 6. For RIS updates only, changes to the site since its designation or earlier update:

**a) Site boundary and area**

**The Ramsar site boundary and site area are unchanged:**

or

**If the site boundary has changed:**

- i) the boundary has been delineated more accurately ; or
- ii) the boundary has been extended ; or
- iii) the boundary has been restricted\*\*

and/or

**If the site area has changed:**

- i) the area has been measured more accurately ; or
- ii) the area has been extended ; or
- iii) the area has been reduced\*\*

**\*\* Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

**b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:**

Area of strict nature reserve was increased by 285 ha, which early belonged to the buffer zone.

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**7. Map of site:**

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

**a) A map of the site, with clearly delineated boundaries, is included as:**

- i) a **hard copy** (required for inclusion of site in the Ramsar List): ;
- ii) an **electronic format** (e.g. a JPEG or ArcView image) ;
- iii) a **GIS file providing geo-referenced site boundary vectors and attribute tables** .

**b) Describe briefly the type of boundary delineation applied:**

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The whole area of Ramsar site is in the territory of Kamanos State Strict Nature Reserve and buffer zone of the reserve.

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**8. Geographical coordinates** (latitude/longitude, in degrees and minutes):

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

56°17' N, 22°39' E

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**9. General location:**

Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

The Kamanos is located approximately 6 km northwest of the Akmenė town in the Akmenė district (Šiauliai County). The population of Akmenė town are about 3,000 inhabitants. The Ramsar site is about 50 km northwest of the Šiauliai town (135,000 inhabitants).

**10. Elevation:** (in metres: average and/or maximum & minimum)

The entire area is at the altitude of 78 to 86 m above sea level.

**11. Area:** (in hectares)

6401 hectares.

**12. General overview of the site:**

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Kamanos bog is the largest raised bog (2,434 ha) in the northern Lithuania region (an area of intense farming), which incorporates ridge-pool complexes and numerous small lakes (over 120 pools up to 0.5 ha in area). Ramsar site Kamanos is located in the watershed of four small rivers of the Venta River basin and plays an important role as an ecological stabiliser in this region of intense agriculture.

**13. Ramsar Criteria:**

Tick the box under 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). All Criteria which apply should be ticked.

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9

**14. Justification for the application of each Criterion listed in 13 above:**

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

**Criterion 1:** Kamanos bog contains representative examples of a natural or near-natural raised bogs and transitional mires and swampy forests. It is the largest raised bog (2,434 ha) in the northern Lithuania region (an area of intense farming), which incorporates ridge-pool complexes and numerous small lakes (over 120 pools up to 0.5 ha in area).

There are 9 types of habitats entered the first annex of Council Directive 92/43/EEC (habitats 3160, 7110, 7140, 9010, 9020, 9050, 9080 91D0, 91E0) on the conservation of natural habitats and of wild fauna and flora

**Criterion 2:** Kamanos bog supports internationally and locally endangered and vulnerable both plants and animal species and plant communities.

There are 49 species protected by CITES convention, 10 species entered the second annex of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (*Hypodryas maturna*, *Triturus cristatus*, *Cypripedium calceolus*, *Hamatocaulis vernicosus* and etc.), 45 species included into the first annex of Council Directive on the conservation of wild birds (79/409/EEC) and 125 species entered the Red Data Book of Lithuania. As well as, two plant communities included in the Red Data Book of Lithuania as *Sphagno tenelli-Rhynchosporium albae* and *Eriophoro-Trichophoretum cespitosi*.

**Criterion 3:** Kamanos bog supports populations of plant and/or animal species important for maintaining the biological diversity of a Boreal biogeographic region. The reserve shelters plant species of limited abundance (that are widespread only in the Northern part of Lithuania) like deergrass

(*Trichophorum cespitosum*) and bird's-eye primrose (*Primula farinosa*). In the places where *Trichophorum cespitosum* is more abundant the plants form the *Eriophoro-Trichophoretum cespitosi* plant community.

**Criterion 4:** The site provides for waterbirds breeding and stop over sites during migration (see point 22).

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

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

**a) biogeographic region:**

Boreal

**b) biogeographic regionalisation scheme** (include reference citation):

Map of Biogeographical Regions of Europe serving the Habitats Directive of the European Community (Council Directive 92/43/EEC)

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**16. Physical features of the site:**

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

**Geology:** Kamanos raised bog allocate in Venta middle-course plain beside the drumlin field. The Quaternary sediments depth is 30-60 m. Under this sediments lay Permian limestone or Triassic red-bed.

**Origins:** Natural

**Hydrology:** Raised bog dependent on rainfall water.

**Soil type:** Mainly peat (Histosols) and glacial ground moraine with limnoglacial sediments.

**Water quality:** Oligotrophic, oligotrophic-mesotrophic. Lakes, ponds and mire waters are dystrophic.

**Depth of water:** Shallow. In the central part of bog the water level drops until 15-38 cm under the bog surface in dry periods.

**Climate:** The mean annual temperature in Kamanos is 6,7°C, mean annual rainfall - 566 mm per year, the mean January temperature -3,1°C and mean July temperature 16.8° C. Ice and snow covered normally from mid November to late March.

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**17. Physical features of the catchment area:**

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

Similar to the features described in Chapter 16.

**18. Hydrological values:**

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The wetland complex plays an important role in the recharge of groundwater, and maintenance of water quality in Venta middle-course plain. The dystrophic Kamanos lake with area of 6 ha is located in the northern part of raised bog. About 120 pools up to 0.5 ha are in the plains of mire.

**19. 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 • M • N • O • P • Q • R • Sp • Ss • Tp Ts • U • Va •  
Vt • W • Xf • Xp • Y • Zg • Zk(b)

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

**b) dominance:**

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

Xp, U, Tp.

**20. General ecological features:**

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The Kamanos raised bog is noted for its unique relief and the abundance of quagmires with great number of small lakes and pools and hummock-hollow complexes with typical vegetation (*Caricetum limosae*, *Sphagnetum magellanicum* etc.). There are remained open depressions on peat substances of the *Rhynchospora alba*, transitional mires with *Carex lasiocarpae*. Open mires are surrounded by bog woodlands (*Ledo-Pinetum*, *Vaccinio uliginosi-Pinetum*, *Sphagno girgensohnii-Piceetum*) and deciduous swamp forests (*Carici elongatae-Alnetum glutinosae*, *Betuletum pubescentis*).

**21. Noteworthy flora:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

There are 969 species of vascular plants and mosses recorded, including 45 species of protected plants, such as bog orchid (*Hammarbya paludosa*), smaller sundew (*Drosera intermedia*), heart-leaved twayblade (*Listera cordata*), downy willow (*Salix lapponum*), bilberry-leaved willow (*Salix myrtilloides*), Northern coral-root (*Corallorhiza trifida*). Two plant species such as yellow lady-slipper (*Cypripedium calceolus*) and slender green feather-moss (*Hamatocaulis vernicosus*) are inscribed in the second annex of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.

**22. Noteworthy fauna:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Known vertebrates are total 243 species, including 185 species of birds (131 nesting), three species of reptiles, seven species of amphibians and 43 mammalian species. 45 Lithuanian Red Data Book species occur at the site, including Eurasian Golden Plover (*Pluvialis apricaria*) - 9 breeding pairs, Black Stork (*Ciconia nigra*) - 2 breeding pairs, Common Crane (*Grus grus*) - about 6 pairs, European Honey-buzzard (*Pernis apivorus*) - one pair, (*Aquila pomarina*) - 2 pairs, Black Grouse (*Tetrao tetrix*) and Wood Sandpiper (*Tringa glareola*) about 4 pairs. All mentioned species are listed in the Annex I of Council Directive 79/409/EEC on the conservation of wild birds. White-fronted Goose (*Anser albifrons*), Greylag Goose (*A. anser*), Bean Goose (*A. fabalis*), ducks and cranes stop over at the site during migration. There are in excess of 2192 known species of insects.

**23. Social and cultural values:**

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

Important for nature conservation, education and scientific research, monitoring. First complex investigations of this bog were carried out in 1935-1936.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box  and describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

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**24. Land tenure/ownership:**

a) within the Ramsar site:

State-owned and private-owned (in the buffer zone of strict nature reserve)

b) in the surrounding area:

Private-owned and state-owned.

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**25. Current land (including water) use:**

a) within the Ramsar site:

Only scientific research and nature management practice are allowed, without any economic activity.

b) in the surroundings/catchment:

Limited forestry, agriculture, hunting

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**26. 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:

Old drainage systems installed before the establishment of the reserve have a negative impact upon the hydrological regime of the bog. The main threats in the catchment are posed by air pollution from a neighboring oil refinery and two construction material factories. Forestry negatively affects the forest habitats in the buffer zone of strict nature reserve.

b) in the surrounding area:

Outdated drainage systems installed before establishment of the nature reserve affect the hydrological regime of territory. Forestry and intense agriculture in the surroundings also have negative impact on the site.

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**27. Conservation measures taken:**

**a)** List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

The whole area is under protection. A Managed Nature Reserve was established in 1961, and in 1979 the status was increased to Strict Nature Reserve (3,935 ha) with a buffer zone (1,260 ha) which together form the existing Ramsar Site. The site is included in the Natura 2000 Network, designated both as Special Protection Area (SPA) for birds and Special Areas of Conservation (SAC) for other species and habitats.

**b)** If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV ; V ; VI

**c)** Does an officially approved management plan exist; and is it being implemented?:

The management plan is approved by Ministry of Environment of the Republic of Lithuania in 2006.

**d)** Describe any other current management practices:

Ditch blocking, tree saplings removing from mire plains and meadows, haymaking are carried out.

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**28. Conservation measures proposed but not yet implemented:**

e.g. management plan in preparation; official proposal as a legally protected area, etc.

To include all surrounding forests (1,260 ha, current buffer zone) into the strict nature reserve.

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**29. Current scientific research and facilities:**

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The meteorological and hydrological observations are performed. The natural changes of flora, the state of populations of rare breeding birds and native animals of European importance are monitored. As well as the aggregates of migratory geese and the density of great mammalian (hoofed animals and predators) are observed. The impact of restoration measures is monitored. The scientists carried out the research of geology, hydrology, biodiversity, habitats in Kamanos.

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**30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:**

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

The visitors' centre of Kamanos State Strict Nature Reserve is in the second village of Akmenė, near Akmenė town. The Kamanos visitors' centre has got nature exposition. The visitors can travel in virtual trip by watching movie about Kamanos reserve and attend the Nature path through the raised bog. School visitors have educational-cognitive journey by nature path, which goes to beautiful virgin sites of the raised bog. Visiting center is under way in Akmenė, training for students is provided.

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**31. Current recreation and tourism:**

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

The excursions visit Kamanos bog only at the nature path, but the number of visitors is limited. A guide attends you and tells about Kamanos State Strict Nature Reserve. The excursions limited at time of bird breeding.

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**32. Jurisdiction:**

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Akmenė district, Šiauliai County

State Service for Protected Areas under the Ministry of Environment of the Republic of Lithuania.

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**33. Management authority:**

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Kamanos State Strict Nature Reserve

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**34. Bibliographical references:**

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Brundza K. 1937. Kamanos/Hidrografija, stratigrafija ir augalija (Kamanos/Aufbau und Pflanzendecke). Kaunas. 268 pp.

Balevičius K., Krasauskas A., Kunskas R., 1981. Po Kamanų rezervatą. – Vilnius. 88 p.

Augustauskas J., Sprainaitytė S., Jašinskas I. 2008: Kamanos. - "Gamtos pasaulis".

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