



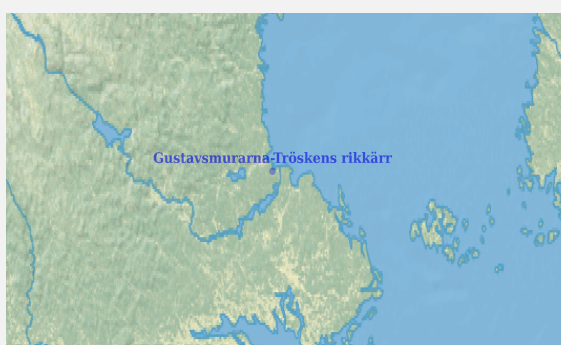
Ramsar Information Sheet

Published on 18 September 2018

Update version, previously published on : 31 January 2013

Sweden

Gustavsmurarna-Tröskens rikkärr



Designation date	19 March 2013
Site number	2170
Coordinates	60°36'25"N 17°19'58"E
Area	660,17 ha

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

Summary

The site consists of four separate areas. It is mostly characterized by marshlands at almost the same elevation as the shallow lake Trösken. Most of the fens are topogenous and considerably wet with high sedge stands that turn over to reed or rush areas along the shores of the lake and connecting brooks. Several of the fens are calcareous fens with several rare and threatened orchids as well as a rich and interesting insect fauna. There are also good examples of undisturbed swamp woods and old herb-rich spruce forests at the site.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Compiler 1

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Compiler 2

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2.1.2 - Period of collection of data and information used to compile the RIS

From year	2013
To year	2018

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Gustavsmurarna-Tröskens rikkärr
Unofficial name (optional)	Gustavsmurarna-Tröskens rikkärr (peatland)

2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary	Yes <input checked="" type="radio"/> No <input type="radio"/>
(Update) The boundary has been delineated more accurately	<input checked="" type="checkbox"/>
(Update) The boundary has been extended	<input checked="" type="checkbox"/>
(Update) The boundary has been restricted	<input checked="" type="checkbox"/>
(Update) B. Changes to Site area	the area has increased
(Update) The Site area has been calculated more accurately	<input type="checkbox"/>
(Update) The Site has been delineated more accurately	<input checked="" type="checkbox"/>
(Update) The Site area has increased because of a boundary extension	<input checked="" type="checkbox"/>
(Update) The Site area has decreased because of a boundary restriction	<input checked="" type="checkbox"/>

2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS?	Yes (actual)
(Update) Are the changes	Positive <input checked="" type="radio"/> Negative <input type="radio"/> Positive & Negative <input type="radio"/>
(Update) No information available	<input type="checkbox"/>
(Update) Changes resulting from causes operating within the existing boundaries?	<input type="checkbox"/>
(Update) Changes resulting from causes operating beyond the site's boundaries?	<input type="checkbox"/>

(Update) Changes consequent upon site boundary reduction alone (e.g., the exclusion of some wetland types formerly included within the site)?

(Update) Changes consequent upon site boundary increase alone (e.g., the inclusion of different wetland types in the site)?

(Update) Please describe any changes to the ecological character of the Ramsar Site, including in the application of the Criteria, since the previous RIS for the site.

The site has been extended with some coniferous forest and some small open and forested peatlands. A small part of the lake and part of a none-wet grassland has been excluded.

(Update) Is the change in ecological character negative, human-induced AND a significant change (above the limit of acceptable change) Yes

2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image

<1 file(s) uploaded>

Former maps

Boundaries description

The site consists of four separate areas more or less with similar boundaries as four nature reserves. From the North to the south with the areas named as the nature reserves;
 Tröskens rikkärr: the Ramsar site boundary corresponds to the boundary of the nature reserve except for the northwestern part close to the village of Grinduga, here the Ramsar site is larger than the reserve which will be extended to correspond with the Ramsar boundary.
 Gustavsmurarna: The nature reserve is fully covered by the Ramsar site, in parts the two borders correspond and in others they do not. The Ramsar site being slightly larger.
 Brännan: The Ramsar border corresponds with the border for the nature reserve to 100%.
 Långhällsskogen: The Ramsar border corresponds with the border for the nature reserve to 100%.

2.2.2 - General location

a) In which large administrative region does the site lie?

b) What is the nearest town or population centre?

2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries? Yes No

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes No

2.2.4 - Area of the Site

Official area, in hectares (ha):

Area, in hectares (ha) as calculated from GIS boundaries

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Udvardy's Biogeographical Provinces	10. Boreonemoral
Bailey's Ecoregions	240 Marine division
WWF Terrestrial Ecoregions	Sarmantic mixed forest PA0436
Freshwater Ecoregions of the World (FEOW)	Ecoregion 406 Northern Baltic drainages
EU biogeographic regionalization	Boreal

Other biogeographic regionalisation scheme

EEA, 2002. Digital Map of European Ecological Regions (DMEER): Sarmantic mixed forest.

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

- Criterion 1 : Representative, rare or unique natural or near-natural wetland types

Hydrological services provided

The site supports flood control and nutrient retention. It may also support small scale sediment trapping to some extent.

Other ecosystem services provided

The mires capture and support long-term storage of atmospheric carbon dioxide.

Other reasons

The site contains representative examples of wetlands of the EU boreal region. The rich fens, the swamp wood and the lake being the main wetland types.

- Criterion 2 : Rare species and threatened ecological communities



















- Criterion 3 : Biological diversity

Justification

The site an important site for maintaining the biodiversity in the EU boreal region. The site supports vascular plant, bryophytes, lichens and fungi, birds and insects living in habitats in wet forests and mires and the shallow vegetated water areas. The different parts with alkaline fens are altogether comparable large at the site, which provides great variety and sustainable populations of species linked to such fens. The area supports several nationally red listed species; as well as representative ones for the region.

- Criterion 4 : Support during critical life cycle stage or in adverse conditions

3.2 - Plant species whose presence relates to the international importance of the site























Scientific name	Common name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
 <i>Botrychium virginianum</i>	Rattlesnake fern	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (VU).	See textbox below and in section 3.1.
 <i>Carex hostiana</i>	Tawny Sedge	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (NT).	See textbox below and in section 3.1.
 <i>Cypripedium calceolus</i>	Lady's-slipper orchid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	The species is included in the EC Habitats directive 92/43/EEC. Protected species according to the (SFS 2007:845).	See textbox below and in section 3.1.
 <i>Epipactis palustris</i>	Marsh helleborine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	Protected species according to the (SFS 2007:845).	See textbox below and in section 3.1.
 <i>Evernia divaricata</i>	Mountain oakmoss lichen	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (VU).	See textbox below and in section 3.1.
 <i>Festuca altissima</i>	Wood fescue	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (VU).	See textbox below and in section 3.1.
 <i>Hamatocaulis vernicosus</i>	Slender green feather moss	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (NT). The species is included in the EC Habitats directive 92/43/EEC.	See textbox below and in section 3.1.
 <i>Liparis loeselii</i>	Fen orchid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (NT). The species is included in the EC Habitats directive 92/43/EEC. Protected species according to the (SFS 2007:845).	See textbox below and in section 3.1.
 <i>Malaxis monophyllos</i>	One-leaved bog-orchid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (VU). Protected species according to the (SFS 2007:845).	See textbox below and in section 3.1.
 <i>Megalaria grossa</i>	Very large dot lichen	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (EN).	See textbox below and in section 3.1.
 <i>Menegazzia terebrata</i>	Magic treeflute lichen	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (VU).	See textbox below and in section 3.1.
 <i>Neckera pennata</i>	Neckera moss	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (NT).	See textbox below and in section 3.1.
 <i>Nephroma laevigatum</i>	Kidney lichen	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (VU).	See textbox below and in section 3.1.
 <i>Ophrys insectifera</i>	Flyorchid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	Protected species according to the (SFS 2007:845).	See textbox below and in section 3.1.
 <i>Primula farinosa</i>	Bird's-eye primrose	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (NT).	See textbox below and in section 3.1.

Criterion 2: For all species, their status in the Swedish Red List and general information for that classification, their distribution etc can be found at <http://artfakta.artdatabanken.se/>.

Criteria 2 and 3: Observation of the species can be found in the Swedish database for observations <http://www.artportalen.se/>.

Criterion 2 and 3 can also be applied for: *Scapania carinthiaca* (EN) and *Scapania glaucocephala* (EN).

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
Birds																		
CHORDATA/ AVES	 <i>Botaurus stellaris</i>	Eurasian Bittern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2		LC 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (NT). The species is included in the EC Birds Directive Annex I.	See textbox below the table and in section 3.1.	
CHORDATA/ AVES	 <i>Dryocopus martius</i>	Black Woodpecker	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			LC 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (NT). The species is included in the EC Birds Directive Annex I.	Breeding. See textbox below the table and in section 3.1.	
CHORDATA/ AVES	 <i>Grus grus</i>	Common Crane	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			LC 	<input type="checkbox"/>	<input type="checkbox"/>	The species is included in the EC Birds Directive Annex I.	Breeding. See textbox below the table and in section 3.1.	
CHORDATA/ AVES	 <i>Haliaeetus albicilla</i>	White-tailed Eagle	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>	Swedish Red List 2015 (NT). The species is included in the EC Birds Directive Annex I.	Breeding and foraging. See textbox below the table and in section 3.1.		
CHORDATA/ AVES	 <i>Pandion haliaetus</i>	Osprey, Western Osprey	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2		<input type="checkbox"/>	<input type="checkbox"/>	The species is included in the EC Birds Directive Annex I.	Breeding and foraging. See textbox below the table and in section 3.1.		
CHORDATA/ AVES	 <i>Pernis apivorus</i>	European Honey Buzzard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			LC 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (NT). The species is included in the EC Birds Directive Annex I.	See textbox below the table and in section 3.1.	
CHORDATA/ AVES	 <i>Porzana porzana</i>	Spotted Crake	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			LC 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (VU). The species is included in the EC Birds Directive Annex I.	See textbox below the table and in section 3.1.	
CHORDATA/ AVES	 <i>Strix uralensis</i>	Ural Owl	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			LC 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (NT). The species is included in the EC Birds Directive Annex I.	Breeding. See textbox below the table and in section 3.1.	
CHORDATA/ AVES	 <i>Tetrao urogallus</i>	Western Capercaillie	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			LC 	<input type="checkbox"/>	<input type="checkbox"/>	The species is included in the EC Birds Directive Annex I.	Breeding. See textbox below the table and in section 3.1.	
Others																		
ARTHROPODA/ INSECTA	 <i>Chlaenius quadrisulcatus</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (VU).	See textbox below the table and in section 3.1.		
ARTHROPODA/ INSECTA	 <i>Chlaenius sulcicollis</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (VU).	See textbox below the table and in section 3.1.		
ARTHROPODA/ INSECTA	 <i>Leucorrhinia pectoralis</i>	Yellow-spotted Whiteface	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			LC 	<input type="checkbox"/>	<input type="checkbox"/>	EC Habitats Directive Annex II.	See textbox below the table and in section 3.1.	
CHORDATA/ MAMMALIA	 <i>Lutra lutra</i>	European Otter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			NT 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (NT). EC Habitats Directive Annex II.	See textbox below the table and in section 3.1.	

1) Percentage of the total biogeographic population at the site

Criterion 2: For all species, their status in the Swedish Red List and general information for that classification, their distribution etc can be found at <http://artfakta.artdatabanken.se/>.

Criteria 2, 3 and 4: Observation of the species can be found in the Swedish database for observations <http://www.artportalen.se/>.

The terrestrial gastropod *Vertigo geyeri* is a typical species for alkaline fens. It is found on several locations and is regarded as Near threatened in Swedish Red List 2015.

3.4 - Ecological communities whose presence relates to the international importance of the site

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
9080. Fennoscandian deciduous swamp woods	<input checked="" type="checkbox"/>	Deciduous swamp forest under permanent influence of surface water and usually flooded annually. They are moist or wet, sometimes with a thin peat layer. Fraxinus, Betula, Alnus and Salix can be dominant tree species. Around stems, hummocks can develop.	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavorable status in the Swedish part of the EU Boreal region in 2013.
3140 Hard oligo-mesotrophic Waters with benthic vegetation of Chara spp	<input checked="" type="checkbox"/>	Unpolluted lakes and pools with waters fairly rich in dissolved bases or with mostly blue to greenish, very clear, waters poor in nutrients, base-rich. The bottoms are covered with charophyte, Chara and Nitella, algal carpets.	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavorable status in the Swedish part of the EU Boreal region in 2013.
3150. Natural eutrophic lakes	<input type="checkbox"/>	Lakes and ponds with mostly dirty grey to blue-green, more or less turbid, waters, rich in dissolved bases, with free-floating surface plant communities or, in deep, open waters, with associations of large pondweeds.	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavorable status in the Swedish part of the EU Boreal region in 2013.
7160. Fennoscandian mineral-rich springs and springfens	<input checked="" type="checkbox"/>	Springs and spring fens are characterized by continuous flow of ground-water. The water is cold, of even temperature, and rich in oxygen and minerals, due to the rapid percolation.	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavorable status in the Swedish part of the EU Boreal region in 2013.
91D0. Bog woodland	<input type="checkbox"/>	Natural old boreal forests with little or none human impact. They often contain a lot of dead and rotten wood; have a variation in tree age and length and species composition. Both wet and non-wet subtypes exist. They often support red-listed species	The habitat is listed in EC Habitats Directive Annex I.
7140. Transition mires and quaking bogs	<input type="checkbox"/>	Peat-forming habitat on oligotrophic to mesotrophic waters, including characteristics intermediate between soligenous and ombrogenous mire types. Swaying swards, floating carpets or quaking mires are also included. It includes many plant communities.	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavorable status in the Swedish part of the EU Boreal region in 2013.
9010. Western taiga	<input checked="" type="checkbox"/>	Natural old boreal forests with little human impact. They often contain a lot of dead and rotten wood; have a variation in tree age and length and species composition. Both wet and non-wet subtypes exist. They often support red-listed species	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavorable status in the Swedish part of the EU Boreal region in 2013.
3260. Water courses of plain to montane levels	<input type="checkbox"/>	Water courses of plain to montane levels, with submerged or floating vegetation of the Ranunculion fluitantis and Callitriche-Batrachion (low water level during summer) or aquatic mosses.	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavorable status in the Swedish part of the EU Boreal region in 2013.
7230. Alkaline fens	<input checked="" type="checkbox"/>	Wetlands mostly or largely occupied by peat- or tufa-producing small sedge and brown moss communities developed on soils permanently waterlogged, with a soligenous or topogenous base rich, often calcareous water supply.	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavorable status in the Swedish part of the EU Boreal region in 2013.

4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

The site offers a large diversity of fens and freshwater wetlands; fens, swamp woods, rivers and a natural eutrophic lake. The soils and waters have a high calcareous content.

The site supports several rare species included in the Swedish Red List 2015 including particularly large populations of one-leaved bog-orchid *Microstylis monophylla* (VU), fen orchid *Liparis loeselii* (NT) and the very rare ground beetles *Chlaenius sulcicollis* (VU) and *Chlaenius quadrisulcatus* (VU).

The hydrology in the area above Lake Trösken is only slightly affected by man and the important groundwater movements and water quality is undisturbed. The site is characterized by marshlands at almost the same elevation as the shallow lake Trösken. Most of the fens are topogenous and considerably wet with high sedge stands that turn over to reed or rush areas along the shores of the lake and connecting brooks. Many of the fens are calcareous fens with several rare and threatened orchids as well as a rich and interesting insect fauna. There are also good examples of undisturbed swamp woods and old herb-rich spruce forests.

4.2 - What wetland type(s) are in the site?

Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Flowing water >> M: Permanent rivers/ streams/ creeks	water courses	0		Representative
Fresh water > Lakes and pools >> O: Permanent freshwater lakes	natural eutrophic lakes with Magnopotamion or Hydrocharition type vegetation	1	110	Representative
Fresh water > Marshes on inorganic soils >> Ts: Seasonal/ intermittent freshwater marshes/ pools on inorganic soils		0		Representative
Fresh water > Marshes on peat soils >> U: Permanent Non-forested peatlands	calcareous fens	2	60	Representative
Fresh water > Marshes on peat soils >> Xp: Permanent Forested peatlands	deciduous swamp woods	3	10	Representative
Fresh water > Flowing water >> Y: Permanent Freshwater springs; oases	mineral-rich springs	4	1	Representative

4.3 - Biological components

4.3.1 - Plant species

Optional text box to provide further information

Several species are not red-listed but rare and typical for rich fens and used as indicators for nature protection. Examples are: *Schoenus ferrugineus* - Bog-rush, *Ophrys insectifera* - Fly orchid, *Epipactis palustris* - Marsh helleborine, *Dactylorhiza traunsteri* - Narrow-leaved marsh-orchid, *Carex appropinquata*, *Carex capillaries*, *Carex lepidocarpa*, *Carex flacca* and *Equisteum scirpoides* - Dwarf scouring rush.

4.3.2 - Animal species

<no data available>

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
D: Moist Mid-Latitude climate with cold winters	Dfc: Subarctic (Severe winter, no dry season, cool summer)

The climate is influenced by cyclones from the Atlantic, but summers are warm and winters cold with a normally consistent snow cover. The vegetation period is 180 days. The precipitation is 600-700 mm and average July temperature is 15 C°.

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

- Entire river basin
- Upper part of river basin
- Middle part of river basin
- Lower part of river basin
- More than one river basin
- Not in river basin
- Coastal

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

The site is situated within Älgängsån/Harnäsåns river basin. The catchment area of this river system is 116 km² and the river enters the Baltic sea 350 m downstream Lake Trösken.

4.4.3 - Soil

Mneral

(Update) Changes at RIS update No change Increase Decrease Unknown

Organic

(Update) Changes at RIS update No change Increase Decrease Unknown

No available information

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes No

Please provide further information on the soil (optional)

The bedrock is almost completely covered by glacial till, which in lower parts contains limestone or calcareous clays. The calcareous content strongly influences the vegetation and flora.

4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from groundwater	<input checked="" type="checkbox"/>	No change
Water inputs from surface water	<input checked="" type="checkbox"/>	No change
Water inputs from rainfall	<input type="checkbox"/>	No change

Water destination

Presence?	Changes at RIS update
To downstream catchment	No change

Stability of water regime

Presence?	Changes at RIS update
Water levels largely stable	No change

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology.

The hydrology in the area above Lake Trösken is only slightly affected by man and the important groundwater movements and water quality is undisturbed. The water quality of Lake Trösken is strongly influenced by water that is conducted to the lake from the River Dalälven. This has made the water more colored and maybe slightly more nutrient-rich. This might have increased the overgrowth of the lakeshores and reed belts close to the fens. The hydrology of the wetland in the separate areas is undisturbed and devoid of ditches.

4.4.5 - Sediment regime

Sediment regime unknown

Please provide further information on sediment (optional):

Very little sediment transportation occurs.

4.4.6 - Water pH

Circumneutral (pH: 5.5-7.4)

(Update) Changes at RIS update No change Increase Decrease Unknown

Alkaline (pH>7.4)

(Update) Changes at RIS update No change Increase Decrease Unknown

Unknown

Please provide further information on pH (optional):

pH is normally around 7 but varies under the season and in different parts. The water quality of Lake Trösken is strongly influenced by water that is conducted to the lake from the River Dalälven. This has made the water more colored and maybe slightly more nutrient-rich. This might have increased the overgrowth of the lakeshores and reed belts close to the fens. The hydrology of the wetland in the separate areas is undisturbed and devoid of ditches.

4.4.7 - Water salinity

Fresh (<0.5 g/l)

(Update) Changes at RIS update No change Increase Decrease Unknown

Unknown

4.4.8 - Dissolved or suspended nutrients in water

Mesotrophic

(Update) Changes at RIS update No change Increase Decrease Unknown

Unknown

4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the site itself: i) broadly similar ii) significantly different

Surrounding area has greater urbanisation or development

Surrounding area has higher human population density

Surrounding area has more intensive agricultural use

Surrounding area has significantly different land cover or habitat types

Please describe other ways in which the surrounding area is different:

Surrounding landscape has a higher proportion of forestry and built up areas. There are areas offering summer cottages or permanent living in other parts around the lake. The surroundings are mainly used for forestry, but also hunting and recreation.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	Low
Erosion protection	Soil, sediment and nutrient retention	Medium
Pollution control and detoxification	Water purification/waste treatment or dilution	Low
Climate regulation	Regulation of greenhouse gases, temperature, precipitation and other climatic processes	Medium
Hazard reduction	Flood control, flood storage	Low

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Recreational hunting and fishing	Medium
Scientific and educational	Major scientific study site	Low
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	Low
Scientific and educational	Educational activities and opportunities	Medium

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part	High

Within the site: 100s

Outside the site: 1000s

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes No Unknown

4.5.2 - Social and cultural values

i) the site provides 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) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland

iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples

iv) 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

<no data available>

4.6 - Ecological processes

<no data available>

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
National/Federal government	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Other types of private/individual owner(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Provide further information on the land tenure / ownership regime (optional):

The whole site is state-owned.

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

Provide the name and title of the person or people with responsibility for the wetland:

Postal address:

E-mail address:

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Water releases	Low impact		<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Unspecified/others			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

Please describe any other threats (optional):

The water quality of Lake Tröskens is strongly influenced by water that is conducting to the lake from the river Dalälven. This has affected the plant life in the water. Water plants that were recorded from the lake in the 19th century (e.g Potamogeton compressus and P. friesii) have disappeared and formerly unknown water plants at the site (e.g Myriophyllum verticillatum and Potamogeton obtusifolius) have established.

Former land use with extensive grazing and haymaking kept the fens more open and reduced bush and tree vegetation. There are now signs of increasing reed vegetation in open fens and re-vegetation by bushes and trees in dryer parts.

Natural system modifications by successions of ecological communities due to peat building and overgrowth might affect wetland habitats in the site.

5.2.2 - Legal conservation status

Regional (international) legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
EU Natura 2000	Brännan SE0630194	http://skyddadnatur.naturvardsverket.se/	partly
EU Natura 2000	Bultbomurarna SE0630195	http://skyddadnatur.naturvardsverket.se/	partly
EU Natura 2000	Grinduga SE0630242	http://skyddadnatur.naturvardsverket.se/	partly
EU Natura 2000	Gustavsmurarna SE0630160	http://skyddadnatur.naturvardsverket.se/	partly
EU Natura 2000	Långhällskogen SE0630257	http://skyddadnatur.naturvardsverket.se/	partly
EU Natura 2000	Matysjön SE0630161	http://skyddadnatur.naturvardsverket.se/	partly

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Nature reserve	Brännan	https://www.lansstyrelsen.se/gavleborg/besok-och-upptack/naturenservat/brannan.html	partly
Nature reserve	Gustavsmurarna	https://www.lansstyrelsen.se/gavleborg/besok-och-upptack/naturenservat/gustavsmurarna.html	partly
Nature reserve	Långhällskogen	https://www.lansstyrelsen.se/gavleborg/besok-och-upptack/naturenservat/langhallsbogen.html	partly
Nature reserve	Tröskens rikkärr	https://www.lansstyrelsen.se/gavleborg/besok-och-upptack/naturenservat/troskens-rikkarr.html	partly

5.2.3 - IUCN protected areas categories (2008)

- Ia Strict Nature Reserve
- Ib Wilderness Area: protected area managed mainly for wilderness protection
- II National Park: protected area managed mainly for ecosystem protection and recreation
- III Natural Monument: protected area managed mainly for conservation of specific natural features
- IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention
- V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation
- VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Partially implemented

Species

Measures	Status
Threatened/rare species management programmes	Partially implemented

Human Activities

Measures	Status
Communication, education, and participation and awareness activities	Implemented

5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

Has a management effectiveness assessment been undertaken for the site? Yes No

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes No

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Yes, there is a plan

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Plant species	Proposed
Plant community	Proposed
Animal species (please specify)	Proposed

Monitoring is included in the Nature reserves and Natura 2000 areas.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Bottenfaunainventering i Gävleborgs län 1986-1988. Länsstyrelsen 1992.
 Fördjupad naturinventering av tre linjesträckningar mellan Älvkarleby och Bomansberget. Beijer, Björn-Axel 1993. Banverket.
 Fördjupad naturinventering av linjesträckningen UA4 mellan Älvkarleby och Bomansberget. Fasth T, Bengtsson O, Andersson L 1994. Banverket.
 Grinduga – Viälvens naturreservat – inventeringsrapport, 2000, Länsstyrelsen i Gävleborg.
 Grinduga by – natur och kulturhistoria i ett ålderdomligt odlingslandskap, Beijer, Björn-Axel 1996. Skriftserien Natur & Kultur i Gävle.
 Gärdefors, U. (ed.) 2010. Rödlistade arter i Sverige 2010 - The 2010 Red List of Swedish Species. Artdatabanken, SLU, Uppsala.
 Inventering av träksammetlöpare i Gävleborgs län 2006, Isaksson D, Länsstyrelsen Gävleborg, rapport 2007:13.
 Lummerbäcken – inventeringsrapport, 2003, Länsstyrelsen i Gävleborg.
 Långhällskogen – inventeringsrapport, 2003, Länsstyrelsen i Gävleborg.
 Myrar i Sandviksregionen, södra Gästrikland, Björkbäck, F. 1970. SNV PM 703.
 Myrskyddsplan för Sverige, Naturvårdsverket rapport 5669 2007.
 Skyddsvärda myrar i Gävleborgs län, Länsstyrelsen i Gävleborg 1985.
 Skyddsvärda vattendrag i Gävleborg, Länsstyrelsen 1992.
 Inledande naturinventering av UA5. Ståhl, P & Fasth T 1995. Banverket, mellersta regionen.
 Snäckor i rikkärr (*Cochlicopa nitens*, *Vertigo geyeri*, *Vertigo angustior* och *Perforatella bidentata*) i Gävleborgs län 2006, von Proschwitz T. Länsstyrelsen Gävleborg, rapport 2007:14.
 Värdefull natur i Gävleborg, Länsstyrelsen i Gävleborg 1997

6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)

<no file available>

ii. a detailed Ecological Character Description (ECD) (in a national format)

<no file available>

iii. a description of the site in a national or regional wetland inventory

<no file available>

iv. relevant Article 3.2 reports

<no file available>

v. site management plan

<no file available>

vi. other published literature

<1 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



Reed and sedge along the inlet to lake Trösken (Peter Ståhl, Länsstyrelsen, 2013)



One-leaved bog-orchid, *Malaxis monophyllus*. (Peter Ståhl, Länsstyrelsen, 2010)

6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation