



Ramsar Information Sheet

Published on 25 January 2017

Update version, previously published on 19 November 2001

Sweden Övre Sulån



Designation date	19 November 2001
Site number	1130
Coordinates	62°35'44"N 16°50'13"E
Area	350,00 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 an oligotrophic lake and the upper part of a narrow, winding stream (about 3 km long). Along the river the site also includes the surrounding forest with scattered wetlands. The river Sulån is one of the most valuable sites in Sweden for the freshwater pearl mussel (*Margaritifera margaritifera*). The population in the river is very dense and large, a large proportion being smaller than 50 mm, which indicates that the population is viable. A natural population of trout (*Salmo trutta*) live in the lake and the river, a species that the pearl mussel is dependent upon in order to have a viable population. The other wetland types at the site, (peatlands, marshes and fresh water forests) are small and scattered, which is typical for the broken topography of the landscape in this part of Sweden. These wetlands are hydrologically unharmed which is unusual.

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

From year	2007
To year	2015

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Övre Sulån
Unofficial name (optional)	Designated as Sulsjön-Sulån

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 type="checkbox"/>
(Update) B. Changes to Site area	the area has increased
(Update) The Site area has been calculated more accurately	<input checked="" 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 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 checked="" 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)?	<input type="checkbox"/>
(Update) Changes consequent upon site boundary increase alone (e.g., the inclusion of different wetland types in the site)?	<input checked="" type="checkbox"/>
(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 better delineated, extended and restricted along the border. In the northern half of the site, the border is now along the shore of the lake as was the intention when the site was designated, (but badly visualised in the digitalisation). This has resulted in that the whole lake is included and that edges of coniferous forest and peatland without international conservation values has been excluded. In the south there are similar changes as in the north, but there are also some actual restrictions and additions made so that the Ramsar site is better following the revised nature reserve border of 2008. Coniferous forest and peatland without international conservation values has been excluded and the other way around. In the most southern part more of the river has been included in the Ramsar site. This part of the river is also very important to the Freshwater pearl mussel, (*Margaritifera margaritifera*); it's a great advantage to have more of the habitat for that species within the Ramsar site. So the ecological character is changed by an increased total area of valuable wetland habitats.

(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>

Boundaries description (optional)

In general the border of the Ramsar site follows the border of the nature reserve Övre Sulån, but in the south close to the tarn Kvarntjärn, the Ramsar site is larger than the nature reserve (decided 2008).

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
Udvardys Biogeographical Provinces	3 West Eurasian Taiga
WWF Terrestrial Ecoregions	Scandinavian-Russian taiga PA0608
Bailey's Ecoregions	130 Subarctic Division
EU biogeographic regionalization	Boreal
Freshwater Ecoregions of the World (FEOW)	Ecoregion 406 Northern Baltic drainages
Other scheme (provide name below)	Norrlands vågiga bergkullterräng med mellanboreala skogsområden
Other scheme (provide name below)	Scandinavian-Russian taiga
Other scheme (provide name below)	Boreal Zone

Other biogeographic regionalisation scheme

Nordiska ministerrådet, 1977. Naturgeografisk regionindelning av Norden. NU B 1977:34. Boreal Zone (and detailed NMR 30a, Norrlands vågiga bergkullterräng med mellanboreala skogsområden).

DMEER 2002 (EEA) digital Map of European Ecological Regions: Scandinavian-Russian Taiga.

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 area is more or less unaffected by human activities, which contributes to the maintenance of a good water quality.

Other ecosystem services provided The site support *Salmo trutta* which is of interest for fishing.

Other reasons The site has representative examples of natural wetland types in the EU Boreal region. The oligotrophic lake and the river has high conservation values and are among the best in Sweden when considering the large population of fresh water pearl mussel.

- Criterion 2 : Rare species and threatened ecological communities

- Criterion 3 : Biological diversity

Justification The site supports wetland types (oligotrophic lakes, wet forests and peatlands) characteristic for the EU boreal region. They provide habitats for characteristic species in the EU boreal region as well as rare and red-listed species as described in criteria 2. The lake and the river support one of the most important populations of the freshwater pearl mussel (*Margaritifera margaritifera*) in Sweden. The population is very dense and large, a large proportion being smaller than 50 mm, which indicates that the population is viable.

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

- Criterion 8 : Fish spawning grounds, etc.

Justification The site has a large population of *Salmo trutta* that is of vital importance for the reproduction of the fresh water pearl mussel (*Margaritifera margaritifera*). The site is one of the best in Sweden for fresh water pearl mussel.

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

There are no known plant species within the site that fulfil any of the criteria.

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								
Birds																	
CHORDATA/AVES	 <i>Aegolius funereus</i>	Boreal Owl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I	See textbox below the table.
CHORDATA/AVES	 <i>Dryocopus martius</i>	Black Woodpecker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 NT. EC Birds Directive Annex I	See textbox below the table.
CHORDATA/AVES	 <i>Gavia arctica</i>	Arctic Loon; Black-throated Loon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I	See textbox below the table.
CHORDATA/AVES	 <i>Lyrurus tetrix</i>	Eurasian Black Grouse; Black Grouse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I	See textbox below the table.
CHORDATA/AVES	 <i>Pandion haliaetus</i>	Osprey, Western Osprey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I	See textbox below the table.
CHORDATA/AVES	 <i>Picoides tridactylus</i>	Eurasian Three-toed Woodpecker; Three-toed Woodpecker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 NT. EC Birds Directive Annex I	See textbox below the table.
CHORDATA/AVES	 <i>Tetrao urogallus</i>	Western Capercaillie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I	See textbox below the table.
CHORDATA/AVES	 <i>Tetrastes bonasia</i>	Hazel Grouse	<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"/>	<input type="checkbox"/>	EC Birds Directive Annex I	See textbox below the table.
CHORDATA/AVES	 <i>Tringa glareola</i>	Wood Sandpiper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 NT. EC Birds Directive Annex I	See textbox below the table.
Fish, Mollusc and Crustacea																	
CHORDATA/ACTINOPTERYGII	 <i>Cottus gobio</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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.
MOLLUSCA/BIVALVIA	 <i>Margaritifera margaritifera</i>	Freshwater pearl mussel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	180000	2013		EN	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 EN. EC Habitats Directive Annex II.	See textbox below the table.
CHORDATA/ACTINOPTERYGII	 <i>Salmo trutta</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		Of vital importance for the reproduction of the fresh water pearl mussel (<i>Margaritifera margaritifera</i>). Do also see textbox below the table.
Others																	
CHORDATA/MAMMALIA	 <i>Castor fiber</i>	Eurasian Beaver	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		See textbox below the table.
CHORDATA/MAMMALIA	 <i>Lynx lynx</i>	Eurasian Lynx	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 VU. EC Habitats Directive Annex II.	See textbox below the table.

1) Percentage of the total biogeographic population at the site

Criteria 4 and 8: The river Sulån is one of the most valuable sites in Sweden for the endangered freshwater pearl mussel *Margaritifera margaritifera*. The population is very dense and large, a large proportion being smaller than 50 mm, which indicates that the population is viable.

Criterion 2: For nationally redlisted species, their present status in the Red List and general information for that classification e.t.c. can be found at <http://artfakta.artdatabanken.se/>.

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

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
Western taiga (EU 9010)	<input checked="" type="checkbox"/>	Natural old boreal forests as well as young stages naturally developing after forest fire. Forestry destroys conservation values. Includes natural freshwater wet coniferous forests.	The habitat is listed in the Habitats Directive Annex 1, and it is not in a favourable conservation status in the Swedish part of the EU Boreal region according to the article 17 report in 2013.
Water courses of plain to montane levels with the Ranunculum fluitantis and Callitriche-Batrachion vegetation (EU 3260)	<input checked="" type="checkbox"/>	Water courses of plain to montane levels, with submerged or floating vegetation of the Ranunculum fluitantis and Callitriche-Batrachion (low water level during summer) or aquatic mosses.	The habitat is listed in the Habitats Directive Annex 1, and it is not in a favourable conservation status in the Swedish part of the EU Boreal region according to the article 17 report in 2013.
Fennoscandian deciduous swamp woods (EU 9080)	<input checked="" type="checkbox"/>	Deciduous swamps are under permanent influence of surface water and usually flooded annually. They are moist or wet, wooded wetlands sometimes with a very thin peat formation.	The habitat is listed in the Habitats Directive Annex 1, and it is not in a favourable conservation status in the Swedish part of the EU Boreal region according to the article 17 report in 2013.

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

4.1 - Ecological character

The site consists of an oligotrophic fresh water lake, Sulsjön and the upper parts of the river Sulån. The southern end of the lake Sulsjön and the outlet to Sulån is surrounded by a mosaic of small wetlands and forested ridges. There are also some areas rich in large rocks and bare bed-rock.

The oligotrophic lake and the river is one of the best sites in Sweden for Freshwater pearl mussel, (*Margaritifera margaritifera*) as well as a number of notable or rare animal species. Dams and other traces of beaver (*Castor fiber*) give a special touch to the forest along the shoreline.

The other wetland types at the site, (the peatlands, marshes and fresh water forests) are small and scattered, which is typical for the broken topography of the landscape in this part of Sweden. They have an intact hydrology.

The forests around the upper parts of the river are about 100 years old. They have remained unaffected by modern forestry and are thought to be the result of natural development after small scale logging, following a forest fire a little bit more than 100 years ago.

The site contains the Natura 2000 wetland habitats "Natural dystrophic lakes and ponds" (3160), "Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation" (3260), "Transition mires and quaking bogs" (7140), "Fennoscandian deciduous swamp woods (9080) and "Bog Woodland" (91D0).

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		2		Representative
Fresh water > Lakes and pools >> O: Permanent freshwater lakes		1	180	Representative
Fresh water > Lakes and pools >> Tp: Permanent freshwater marshes/ pools		4		Representative
Fresh water > Marshes on peat soils >> U: Permanent Non-forested peatlands		3	31	Representative
Fresh water > Marshes on inorganic soils >> Xf: Freshwater, tree-dominated wetlands		4		Representative
Fresh water > Marshes on peat soils >> Xp: Permanent Forested peatlands		4	11	Representative

Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
Coniferous forest	125

4.3 - Biological components

4.3.1 - Plant species

<no data available>

4.3.2 - Animal species

Invasive alien animal species

Phylum	Scientific name	Common name	Impacts	Changes at RIS update
CHORDATA/ACTINOPTERYGII	<i>Salvelinus fontinalis</i>	Brook char	Potentially	No change

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)

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 in the upper part of the Sulsjön-Sulån sub-basin that is part of the Selångersån catchment area.

4.4.3 - Soil

Mineral

(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

4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	No change

Source of water that maintains character of the site

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

Unknown

(ECD) Connectivity of surface waters and of groundwater

Unknown

(ECD) Stratification and mixing regime

Stratification: Cold winters with the warmest water at the bottom of the lake, summers with the warmest water in the surface water. Mixing during spring and autumn.

4.4.5 - Sediment regime

Sediment regime unknown

Please provide further information on sediment (optional):

The site is situated in the upper part of a sub-basin catchment area and the surrounding hills are well vegetated with forest, there is very little erosion and sediment transportation at the site.

(EOD) Water turbidity and colour	Unknown
(EOD) Light - reaching wetland	Unknown
(EOD) Water temperature	Typical for the Dfc-region (Köppen-Geiger). Lakes are mostly ice-covered during winter and seldom over +20C in summer.

4.4.6 - Water pH

Circumneutral (pH: 5.5-7.4)

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

Unknown

4.4.7 - Water salinity

Fresh (<0.5 g/l)

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

Unknown

Please provide further information on salinity (optional):

unknown

(EOD) Dissolved gases in water	unknown
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4.4.8 - Dissolved or suspended nutrients in water

Oligotrophic

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

Unknown

Please provide further information on dissolved or suspended nutrients (optional):

Unknown

(EOD) Dissolved organic carbon	Unknown
(EOD) Redox potential of water and sediments	Unknown
(EOD) Water conductivity	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:

There is a large difference in land use. Only small parts of the Ramsar site are outside the nature reserve. Surrounding area is used for forestry. Forestry is not allowed within the protected parts of the Ramsar site. Minor forestry measures are allowed if needed for the management of the nature reserve's conservation values or for management of arrangements for the visitors according to the management plan.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	Low
Fresh water	Drinking water for humans and/or livestock	Low

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Recreational hunting and fishing	Medium
Recreation and tourism	Nature observation and nature-based tourism	Low
Recreation and tourism	Picnics, outings, touring	Low
Spiritual and inspirational	Aesthetic and sense of place values	Low
Scientific and educational	Long-term monitoring site	Medium
Scientific and educational	Educational activities and opportunities	Low

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	Medium
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	Medium

Other ecosystem service(s) not included above:

No

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
Commercial (company)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Other types of private/individual owner(s)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

No complementary information

5.1.2 - Management authority

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

Länsstyrelsen Västernorrland

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

Enheten för Skyddad natur

Postal address:

Länsstyrelsen Västernorrland
871 86 Härnösand
Sweden

E-mail address:

vasternorrland@lansstyrelsen.se

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
Drainage		High impact	<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Livestock farming and ranching	Low impact	Low impact	<input type="checkbox"/>	decrease	<input checked="" type="checkbox"/>	No change

Energy production and mining

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

Transportation and service corridors

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

Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Logging and wood harvesting	Low impact	High impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Fishing and harvesting aquatic resources	Low impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Recreational and tourism activities	Low impact	Low impact	<input checked="" 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
Fire and fire suppression	Low impact	Low impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Invasive and other problematic species and genes

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

Pollution

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

Please describe any other threats (optional):

Potential damaging factors are, clearly, any projects with an impact on the water quality or the river bottom. Potential factors are projects or activities resulting in direct or indirect impact on the river or surrounding forests and wetlands, e.g. introduction of non-natural fish species and acid rain.

There have been local long-term problems related to gravel extraction nearby the river, downstream the Ramsar site. As early as in the 1980's, attention was drawn to the fact that dirt linked to the extraction was washed into the river, and locally the riverbank was damaged. The problems have persisted into the 1990's, although measures have been taken to counteract the impact. Through these activities, potential habitats for char and pearl mussel may have been damaged.

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	Övre Sulån SE 0710131	http://www.lansstyrelsen.se/vasternorrland/SiteCollectionDocuments/Sv/djur-och-natur/skyddad-natur/Natura-2000/Bevarandeplaner/ovresulan-se0710131.pdf	partly

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Nature Reserve	Övre Sulån	http://www.lansstyrelsen.se/vasternorrland/Sv/djur-och-natur/skyddad-natur/naturreservat-i-vasternorrland/sundsvalls-kommun/ovresulan/Pages/default.aspx	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	Implemented

Habitat

Measures	Status
Catchment management initiatives/controls	Implemented

Species

Measures	Status
Threatened/rare species management programmes	Partially implemented

Human Activities

Measures	Status
Regulation/management of recreational activities	Implemented
Livestock management/exclusion (excluding fisheries)	Implemented

Other:

Parts of the fire-prone pine forests have been burnt according to the management plan. Small parts of the Ramsar site is situated outside the nature reserve and do only have the protection that general legislation provides.

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

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site:

No such facility exists. A display of outdoor information concerning the protected area can be found at the site.

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No need identified

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Animal species (please specify)	Implemented
Animal community	Implemented
Water quality	Implemented

There are sites for regional monitoring of freshwater pearl-mussel *Margaritifera margaritifera*, stream-living insect fauna, fish fauna and silica algae within the nature reserve.

The snow mobile trail and its effects on vegetation, fauna, water quality etc. will be evaluated.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

* Aronsson A, 1997, Grustäckers inverkan på bestånd av Flodpärlmussla (Margaritifera margaritifera) och övrig bottenfauna i Sulån, Medelpad, C-uppsats i biologi, Mitthögskolan, inst. för tillämpad naturvetenskap, Härnösand.
* Bergengren J. 1999. Vandringshinder och spridningsbarriärer. Länsstyrelsen i Västernorrland. 1999:1
* Bergengren J, 2000, Metodstudie flodpärlmussla 1999-2000. Delrapport 1: Nedgrävningsstudie, * Bergengren J, 2001. Mussellarver på öring och nedgrävda småmusslor. Avrapportering av metodstudie på flodpärlmussla 1999-2000. Länsstyrelsen i Jönköpings län, PM 01:2
* Eriksson M, Henriksson L, Söderberg H. 1998 Flodpärlmusslan i Sverige, Naturvårdsverket Rapport 4887.
* Söderberg H, Norrgrann O, 2001, Sjö och vattendragsinventering i Västernorrlands län, Länsstyrelsen i Västernorrland. 2001:1
* Norrgrann O, 1999, Biotopkartering och jämförelse av mänsklig påverkan i vattendrag på Kolahalvön och i Västernorrland, B-uppsats i geografi, Mitthögskolan, inst. för tillämpad naturvetenskap, Härnösand.

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

<2 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



View of shelter by the lake Sulsjön (Länsstyrelsen Västernorrland, 13-06-2008)



Monitoring of fresh water mussels (Länsstyrelsen Västernorrland, 29-06-2001)



Management by prescribed forest fire (in non-wet forest), (Länsstyrelsen Västernorrland, 02-07-2009)

6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation 2001-11-19