



# Ramsar Information Sheet

Update version, previously published on : 31 January 2013

## Sweden Mellanljusnan



Designation date	19 March 2013
Site number	2173
Coordinates	61°50'32"N 15°56'01"E
Area	1 711,36 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 Mellanljusnan consists of a 50 kilometres long unexploited part of the river Ljusnan. Mellanljusnan is devoid of power stations and dams. Rapids and streaming parts are mixed with slowly moving waters. In the lower part of the site the river runs in a broad valley through farmland area surrounded by big forest-covered hills. The middle and upper parts are dominated by the forest landscape with dry pine forests on sandy glacial deposits. The vegetation of the shores is of great interest since it includes several alpine plants otherwise absent from this region. Along the shores of the lakes Vikarsjön and Borrsjön there are several red-listed aquatic plants. The river holds strong populations of grayling *Thymallus thymallus* and brown trout *Salmo trutta* and is very popular for fishing as well as other open-air activities.

The site is also of large geological value. The landscape is dramatic as the river has eroded down to the bedrock through 40 metres deep layers of glacial delta sediments. Along the river runs an esker and there are several other good examples of other types of landforms, for example gullies. In these gullies, there are deciduous forests with high groundwater and parts have seepage water or are flooded with spring water. A lot of springs exists along the site. Several of the meadows along the river have been managed by mowing earlier. The near-natural forests of the site are rich in dead wood.

## 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)	Mellanljusnan
Unofficial name (optional)	Mellanljusnan (river)

#### 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 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 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) Positive %	50
(Update) No information available	<input type="checkbox"/>
(Update) Changes resulting from causes operating within the existing boundaries?	<input checked="" type="checkbox"/>

(Update) Changes resulting from causes operating beyond the site's boundaries?

(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 uppermost half of the site is now a protected nature reserve by act of the county administration. Land areas in that nature reserve has been added to the site, so now there are wet forests, wet meadows and springs included in the site as well. Parts of the river that was missed due to not so detailed earlier digitalising have also been included.

(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

In the north-west the boundary follows the nature reserve Mellanljusnan, except for the area around the Llldammen where the Ramsar border follows the road instead of including forest and water in the adjacent tributary valley. Downstream the nature reserve the Ramsar boundary follows the Natura 2000 site Mellanljusnan Korskrogen-Edeforsen, but where water areas have been missed in the digitalised Natura 2000 site, such water areas are now included in the Ramsar site. The Natura 2000 sites Kyrksjön and Borrsjön-Vikarsjön are also included in the Ramsar site.

### 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	West Eurasian Taiga
Bailey's Ecoregions	130, Subarctic division
WWF Terrestrial Ecoregions	Scandinavian-Russian taiga
Other scheme (provide name below)	Scandinavian-Russian taiga
Freshwater Ecoregions of the World (FEOW)	406, Northern Baltic drainages
EU biogeographic regionalization	Boreal

#### Other biogeographic regionalisation scheme

TEOW - Terrestrial Ecoregions of the World: Scandinavian-Russian taiga  
Nordiska ministerrådet, 1977. Naturgeografisk regionindelning av Norden: Boreal zone.  
EEA, 2002. Digital Map of European Ecological Regions (DMEER): 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 site supports flood control and nutrient retention. It may also support sediment trapping to some extent in the part of the river with large basin and still-flowing waters. Surrounding deep sand deposits support infiltration of water from the nearby areas.

Other reasons

The site includes several habitats representative for rivers, their shores and wetland types connected to gullies in the EU boreal region. Mellanljusnan is a considerably long free running river without any dams for hydroelectric power or other purposes which is very rare in Sweden and especially in the southern half of the country. Such unexploited rivers are also rare in the EU boreal region. The 50-km long part of the river includes rapids mixed and shallow basins. There is a near natural water regime with large season-bound flooding despite some power plants in the upper parts of the river (upstream the Ramsar site). The shores along the river are diverse and include many wetland and vegetations types typical for EU boreal riparian areas. There are also numerous gullies along the river, containing wet forests and springs, these wetland types are also representative for the region.

- Criterion 2 : Rare species and threatened ecological communities

- Criterion 3 : Biological diversity

Justification

The site contains representative flora and fauna for boreal rivers. The high quality of the water supports several rare benthic species for example of the Trichoptera, Ephemeroidea and Plecoptera tribe. The site also supports the biodiversity of the riparian zone along the river, including some more rare vegetations types. Several alpine species also live in the riparian zone. Finally, the site supports the biodiversity of wet forests in gullies and springs.


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

- Criterion 8 : Fish spawning grounds, etc.

Justification

The site is an important spawning and feeding ground for several fish including brown trout, *Salmo trutta*, grayling, *Thymallus thymallus* and bullhead, *Cottus gobi* and the freshwater pearl mussel *Margaritifera margaritifera* in the boreal region.


























#### 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>Astragalus alpinus</i>	Alpine milkvetch	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		Alpine species. See textbox below the table and in section 3.1.
 <i>Bartsia alpina</i>	Alpine bartsia	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		Alpine species. See textbox below the table and in section 3.1.
 <i>Carex heleonastes</i>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (VJ).	See textbox below the table and in section 3.1.
 <i>Carex ornithopoda</i>	Bird's-foot Sedge	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		See textbox below the table and in section 3.1.
 <i>Crassula aquatica</i>	Water pygmyweed	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (NT).	See textbox below the table and in section 3.1.
 <i>Elatine hydropiiper</i>	Eight-stamen waterwort	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (VJ).	See textbox below the table 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 (VJ).	See textbox below the table and in section 3.1.
 <i>Limosella aquatica</i>	Water mudwort	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	Swedish Red List 2015 (NT).	See textbox below the table and in section 3.1.
 <i>Lythrum portula</i>	Water-purslane	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	Swedish Red List 2015 (NT). EC Habitats Directive Annex II.	See textbox below the table and in section 3.1.
 <i>Persicaria foliosa</i>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (NT).	See textbox below the table and in section 3.1.
 <i>Poa remota</i>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		See textbox below the table and in section 3.1.
 <i>Ramalina thrausta</i>	Angels hair bush lichen	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (EN).	See textbox below the table and in section 3.1.
 <i>Scapania apiculata</i>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Swedish Red List 2015 (EN).	See textbox below the table and in section 3.1.
 <i>Viola biflora</i>	Alpine yellow-violet	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		Alpine species. See textbox below the table and in section 3.1.
 <i>Viola selkirkii</i>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		See textbox below the table 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/>.

### 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	GITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7								
<b>Birds</b>																	
CHORDATA/AVES	 <i>Actitis hypoleucos</i>	Common Sandpiper	<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"/>		See textbox below the table and in section 3.1.
CHORDATA/AVES	 <i>Bucephala clangula</i>	Common Goldeneye	<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"/>		See textbox below the table and in section 3.1.
CHORDATA/AVES	 <i>Cinclus cinclus</i>	White-throated Dipper	<input checked="" type="checkbox"/>	<input checked="" 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"/>		Foraging, staging. See textbox below the table and in section 3.1.
CHORDATA/AVES	 <i>Mergus merganser</i>	Common Merganser	<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"/>		See textbox below the table and in section 3.1.
CHORDATA/AVES	 <i>Pandion haliaetus</i>	Osprey, Western Osprey	<input checked="" type="checkbox"/>	<input checked="" 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 Birds Directive Annex I.	Foraging. See textbox below the table and in section 3.1.
CHORDATA/AVES	 <i>Picoides tridactylus</i>	Three-toed Woodpecker	<input checked="" type="checkbox"/>	<input checked="" 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). EC Birds Directive Annex I.	Foraging. See textbox below the table and in section 3.1.
CHORDATA/AVES	 <i>Tetrastes bonasia</i>	Hazel Grouse	<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 Birds Directive Annex I.	See textbox below the table and in section 3.1.
<b>Fish, Mollusc and Crustacea</b>																	
CHORDATA/ACTINOPTERYGII	 <i>Cottus gobio</i>	European bullhead	<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.
MOLLUSCA/BIVALVIA	 <i>Margaritifera margaritifera</i>	Freshwater pearl mussel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				EN 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (EN). EC Habitats Directive Annex II.	The host fish for reproduction is present at the site, so reproduction takes place. See textbox below the table and in section 3.1.
MOLLUSCA/BIVALVIA	 <i>Pseudanodonta complanata</i>	Depressed river mussel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (NT).	See textbox below the table and in section 3.1.
CHORDATA/ACTINOPTERYGII	 <i>Salmo trutta</i>	Herling	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>		Important habits for the species including spawning. See textbox below the table and in section 3.1.
CHORDATA/ACTINOPTERYGII	 <i>Thymallus thymallus</i>	Grayling	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>		Important habits for the species including spawning habitats. See textbox below the table and in section 3.1.
<b>Others</b>																	
CHORDATA/MAMMALIA	 <i>Lutra lutra</i>	European Otter	<input checked="" type="checkbox"/>	<input checked="" 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.	Important area for this species since long time. Important foraging area which supports open water during the winter. 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/>.

### 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
3130. Oligotrophic to mesotrophic standing waters with vegetation	<input checked="" type="checkbox"/>	Aquatic to amphibious short perennial vegetation, oligotrophic to mesotrophic, of lake, pond and pool banks and water-land interfaces.	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavourable status in the Swedish part of the EU boreal region in 2013
6450. Northern boreal alluvial meadows	<input checked="" type="checkbox"/>	Along large rivers with placid river, sections which are frozen every winter, the type is affected by flooding in spring. The traditional management, mowing of hay, has usually ceased. Type includes areas not yet severely overgrown with wooded species.	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavourable status in the Swedish part of the EU boreal region in 2013
3210. Fennoscandian natural rivers	<input checked="" type="checkbox"/>	EU-boreal natural river systems with nutrient-poor water. The water level shows great amplitude, up to 6 m during the year. Especially high water level after snow melting. The water-dynamics can vary, contain waterfalls and rapid streams.	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavourable 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 unfavourable 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 unfavourable status in the Swedish part of the EU boreal region in 2013.
6430. Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	<input checked="" type="checkbox"/>	Wet and nitrophilous tall herb edge communities, along water courses and woodland borders.	The habitat is listed in EC Habitats Directive Annex I. The habitat had an unfavourable 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 main habitat is classified as the Natura 2000 wetland habitat "Fennoscandian natural rivers" (3210). It is characterized by clear, nutrient poor water. The changing water levels and the natural erosion from running water create open eroded riverbanks with high biological diversity. Typical for the site are plant communities with influence of alpine plants mixed with lowland plants. Alpine plants such as the *Astragalus alpinus*, the *Bartsia alpina*, the *Viola biflora*, the *Viscaria alpina* and the *Equisetum variegatum* are characteristic. Many water insects depending on clean and oxygen rich water such as species of Trichoptera, Ephemeroidea and Plecoptera thrive in the water as well as the freshwater pearl mussels *Margaritifera margaritifera*, the brown trout *Salmo trutta*, the grayling *Thymallus thymallus* and the bullhead *Cottus gobio*. The otter *Lutra lutra* is well-established in the area.

Important is also the Natura 2000 wetland habitat "Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoeto-Nanojuncetea*" (3130). This is one of the few remaining and probably the best developed site for this vegetation in the river system. It holds a strong population of the threatened plants *Elatine orthosperma* and *Persicaria foliosa* and other red listed plants belonging to this threatened plant community.

The site also presents good examples of streams, rapids, ravines, "nipor" (steep sandy brinks), stretches of slow-flowing water, and other hydromorphic and aquatic elements. Parts of the shore areas are affected by flowing groundwater not too far from the surface of the ground. The site represents an undisturbed middle part of a river system in the boreal region of the EU although the hydrology of the river is somewhat affected by hydroelectric power stations higher up in the river system.

The site is also of large geological value. The landscape is dramatic as the river has eroded down to the bedrock trough 40-meter-deep layers of glacial delta sediments. Along the river runs an esker and there are several other good examples of other types of landforms, for example gullies. In these gullies there are deciduous forests with high ground water and parts have seepage water or are flooded with spring water. Many springs exist along the site. Several of the meadows along the river have been managed by mowing previously. The near-natural forests of the site are rich in dead wood.

### 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 >> Mt Permanent rivers/ streams/ creeks		1	1015	Rare
Fresh water > Lakes and pools >> O: Permanent freshwater lakes		2	34	Rare
Fresh water > Marshes on inorganic soils >> Tp: Permanent freshwater marshes/ pools		0		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		0		Representative
Fresh water > Marshes on inorganic soils >> W: Shrub-dominated wetlands		0		Representative
Fresh water > Marshes on inorganic soils >> Xf: Freshwater, tree-dominated wetlands		0		Representative
Fresh water > Flowing water >> Y: Permanent Freshwater springs; oases		0		Representative

#### Human-made wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
4: Seasonally flooded agricultural land		0		Representative

#### Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
9010. Western taiga	3

### 4.3 - Biological components

#### 4.3.1 - Plant species

<no data available>

#### 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)

Not known as far.

#### 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 river Ljusnan has a catchment area of 19.816 km<sup>2</sup> and reaches the Baltic sea 110 km downstream the site Mellanljusnan.

#### 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	

##### Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from groundwater	<input 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 fluctuating (including tidal)	No change

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

Water levels fluctuating, high water levels during and soon after snow melting.

4.4.5 - Sediment regime

Significant erosion of sediments occurs on the site

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

Significant accretion or deposition of sediments occurs on the site

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

Significant transportation of sediments occurs on or through the site

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

Sediment regime is highly variable, either seasonally or inter-annually

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

Sediment regime unknown

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

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:

The river has a high impact from regulation of the water regime for hydroelectric power purpose with several dams and power stations both upstream and downstream from the site. The geomorphology of the surroundings to the river is also different. Further away from the river, but along the site, there is a landscape more affected by forestry.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Fresh water	Drinking water for humans and/or livestock	Medium

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Storage and delivery of water as part of water supply systems for agriculture and industry	High
Erosion protection	Soil, sediment and nutrient retention	Medium
Pollution control and detoxification	Water purification/waste treatment or dilution	High
Hazard reduction	Flood control, flood storage	Low

## Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Recreational hunting and fishing	High
Recreation and tourism	Picnics, outings, touring	High
Recreation and tourism	Nature observation and nature-based tourism	High

Within the site: 1000

Outside the site: 1000

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 checked="" type="checkbox"/>

##### Private ownership

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

#### 5.1.2 - Management authority

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

County Administrative Board of Gävleborg

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

Contact person for Ramsar sites

Postal address:

County Administrative Board of Gävleborg, S-801 70 Gävle, Sweden  
Tel. +46 10 225 10 00. E-mail: gavleborg@lansstyrelsen.se (to the registry).

E-mail address:

[gavleborg@lansstyrelsen.se](mailto:gavleborg@lansstyrelsen.se)

### 5.2 - Ecological character threats and responses (Management)

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

##### Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Logging and wood harvesting			<input type="checkbox"/>		<input checked="" type="checkbox"/>	

##### Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Dams and water management/use			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

Please describe any other threats (optional):

The not natural regulation of the water regime for hydroelectric power purpose is the most severe problem affecting the biology in the river. Forestry can cause erosion and leakage of nutrients in the river, but is more of a potential threat than a current problem today.

#### 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	Borrsjön-Vikarsjön SE0630228	<a href="http://skyddadnatur.naturvardsverket.se/">http://skyddadnatur.naturvardsverket.se/</a>	partly
EU Natura 2000	Djupbäcken SE0630176	<a href="http://skyddadnatur.naturvardsverket.se/">http://skyddadnatur.naturvardsverket.se/</a>	partly
EU Natura 2000	Mellanljusnan Korskrogen-Edeforsen SE0630223	<a href="http://skyddadnatur.naturvardsverket.se/">http://skyddadnatur.naturvardsverket.se/</a>	partly
EU Natura 2000	Mellanljusnan Laforsen-Korskrogen SE0630101	<a href="http://skyddadnatur.naturvardsverket.se/">http://skyddadnatur.naturvardsverket.se/</a>	partly

##### National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
nature reserve	Djupbäcken	<a href="https://www.lansstyrelsen.se/gavleborg/besok-och-upptack/naturereservat/djupbacken.html">https://www.lansstyrelsen.se/gavleborg/besok-och-upptack/naturereservat/djupbacken.html</a>	partly
nature reserve	Kläppaängarnas naturvårdsområde	<a href="https://www.lansstyrelsen.se/gavleborg/besok-och-upptack/naturereservat/klappaangarna.html">https://www.lansstyrelsen.se/gavleborg/besok-och-upptack/naturereservat/klappaangarna.html</a>	partly
nature reserve	Mellanljusnan	<a href="https://www.lansstyrelsen.se/gavleborg/besok-och-upptack/naturereservat/mellanljusnan.html">https://www.lansstyrelsen.se/gavleborg/besok-och-upptack/naturereservat/mellanljusnan.html</a>	whole

### 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

#### Other:

The site is included in the action program for *Persicaria foliosa*. Some of the grasslands are supposed to be managed by grazing and/or mowing.

### 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:

There are several walking trails along the site in the nature reserve Mellanljusnan as well as signposted information points and resting places and picnic areas. A wooden pavement path above one of the rapids gives access for disabled.

URL of site-related webpage (if relevant):

### 5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No, but restoration is needed

#### Further information

Some of the grasslands areas in need of a re-established management with grazing and or mowing.

### 5.2.7 - Monitoring implemented or proposed

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

Monitoring is included in Nature reserves and Natura 2000 sites.

## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

ArtDatabanken 2015. Rödlistade arter i Sverige 2015.  
Flodpärlmusslan i Gävleborg. Länsstyrelsen Gävleborg Rapport 1997:6.  
Värdefull natur i Gävleborg, Naturvårdsprogram. Länsstyrelsen Gävleborg Rapport 1997:12.  
Riksintressen i Gävleborgs län. Länsstyrelsen Gävleborg Rapport 2003:9.  
Vegetations- och substratkartering längs Mellanljusnans stränder 2008. Magnus Andersson, Foran, 2008.  
Monitoring av fisk i Mellanljusnan med hjälp av båtelfiske 2008. Mikael Carlstein, Anders Bruks, Jerry Boberg, F.A.S.T. Fiskeresursgruppen.  
Preliminär arbetskopior av "Slutrapport: Biologisk återställning av Mellanljusnan, sträckan Laforsen – Korskrogen". Stefan Torfve, VFK. 2008.  
Mellanljusnan. 2017 folder. Länsstyrelsen Gävleborg 2017

#### 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:



Mellanljusnan, Kälströmmen  
( Helena Persson, 04-06-2008 )



Mellanljusnan, Hävrahällan ( Helena Persson, 14-06-2006 )



Mellanljusnan, view by Nygravsmon ( Helena Persson, 25-06-2008 )



Broad-Leaved Cottongrass ( Helena Persson, 10-07-2008 )

#### 6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation