



Ramsar Information Sheet

Published on 4 October 2017

Update version, previously published on : 31 January 2013

Sweden Mannavuoma



Designation date	19 March 2013
Site number	2172
Coordinates	68°27'47"N 22°18'31"E
Area	704,00 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

Mannavuoma is situated in the very north of Sweden, about 7 km west of the community Karesuando in the municipality of Kiruna. Mannavuoma is located approximately 330 meters above sea level. The site is a vast and diverse wetland stretched out on both sides of the lake Mannajärvi.

Mannavuoma consists mainly of mixed mires which largely comprises of palsa mires, bogs, string mixed mires rich in flarks and pools. Small topogenous fens are spread throughout the area. In the northern parts, especially along the shores of the river Muonio there are deciduous wet forests that are rich in species. The flark-pools are excellent habitats for birds, especially waders. Mannavuoma's diversity of wetland types make good prerequisites for a rich animal and plant life. Mannavuoma is one of seven palsa mires included in the environmental monitoring program. Initial surveys show that the area covered by palsas has decreased since the 1960s or has completely vanished.

Mannavuoma is adjacent to the Ramsar Wetland Lätäseno-Hietajoki in Finland. Only the river Muonio separates the sites from each other.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Compiler 1

Name	Emilia Vesterberg
Institution/agency	Länsstyrelsen i Norrbottens län
Postal address	SE-971 86 LULEÅ, Sweden
E-mail	emilia.vesterberg@lansstyrelsen.se
Phone	+46 10-22 55 456
Fax	+46 920 22 84 11

Compiler 2

Name	Jenny Lonnstad
Institution/agency	Naturvårdsverket (Swedish EPA)
Postal address	Naturvårdsverket, 106 48 Stockholm, Sweden
E-mail	jenny.lonnstad@naturvardsverket.se
Phone	+46 10 698 15 92
Fax	+46 10 698 16 00

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

From year	2013
To year	2017

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Mannavuoma
Unofficial name (optional)	Mannavuoma (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 No

(Update) B. Changes to Site area No change to area

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 (likely)

(Update) Are the changes Positive Negative Positive & Negative

(Update) No information available

(Update) Changes resulting from causes operating within the existing boundaries?

(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 regional environmental monitoring program in Norrbotten County monitors palsa mires and a comparison between data from the 1960-ties and the situation 2010 a lot of palsa mires have collapsed due to climate change. The last two decades the local climate does no longer fulfil the requirements for the growth and maintenance of palsas. The degradation of the palsas has probably continued since the last RIS in 2013, but we have no data for a comparison for the time of the old RIS in 2013 and the present RIS 2017.

(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 boundary of the Ramsar site isn't corresponding to any administrative border, it is approximately situated where the forest become productive and of interest for forestry.

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
Bailey's Ecoregions	130 Subarctic Division
EU biogeographic regionalization	Alpine
Udvardy's Biogeographical Provinces	Western Eurasian Taiga
Freshwater Ecoregions of the World (FEOW)	Ecoregion 406 Northern Baltic drainages
Marine Ecoregions of the World (MEOW)	Baltic Seas
WWF Terrestrial Ecoregions	Scandinavian montane birch forest and grasslands/Scandinavian-Russian Taiga

Other biogeographic regionalisation scheme

EEA, 2002: Digital Map of European Ecological Regions (DMEER) - Scandinavian montane birch forest and grasslands/Scandinavian-Russian Taiga
TEOW: Scandinavian montane birch forest and grasslands/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

Other ecosystem services provided

The mires in the area have good possibilities to continue function as a carbon sink and storage.

Other reasons

Mannavuoma contains a representative example of natural wetland types for the northernmost part of the EU boreal region. The site contains the Ramsar wetland types Forested peatlands (Xp), Non-forested peatland (U), Permanent rivers (M), Permanent freshwaters marshes and pools (Tp) Shrub-dominated wetlands (W) and Freshwater, tree-dominated wetlands (Xf). The non-forested peatlands consist of palsa mires and that type is rare in the EU boreal region. The other wetlands types are representative for the northern part of the region and in very good condition. The site is especially noteworthy for the well-developed bog areas, the bog areas are typical for the northern parts of the boreal region, they are not raised and some of them have strings that form nets.

- Criterion 2 : Rare species and threatened ecological communities










- Criterion 3 : Biological diversity

Justification

The site supports a variety of species connected to wetlands of Mannavuoma. Since the region of Norrbotten is rich in wetlands, Mannavuoma is also an important part in contributing to the conservation of the biological diversity of this part of Sweden. The Sphagnum flora is rich in species for a site not having parts with base rich water.











- 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>Cladonia arbuscula</i> 	Reindeer lichen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Cladonia rangiferina</i> 	Gray reindeer lichen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Cladonia stygia</i> 	Styx Black-footed reindeer lichen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum angustifolium</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum aongstroemii</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum balticum</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum capillifolium</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum centrale</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum compactum</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum fallax</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum fimbriatum</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum lindbergii</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum magellanicum</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum papillosum</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum russowii</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum subfulvum</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.
<i>Sphagnum vulpianum</i> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	EC Habitats Directive Annex V.	See textbox below the table and in section 3.1.

Criterion 3: All the species are the observations 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	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
Birds																		
CHORDATA / AVES	 <i>Acanthis flammea</i>	Common Redpoll	<input type="checkbox"/>	<input checked="" 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"/>		Probably breeding. See textbox below the table and in section 3.1.	
CHORDATA / AVES	 <i>Anas crecca</i>	Eurasian Teal; Green-winged Teal	<input type="checkbox"/>	<input checked="" 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"/>		Probably breeding. See textbox below the table and in section 3.1.	
CHORDATA / AVES	 <i>Anthus pratensis</i>	Meadow Pipit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015, (NT).	Probably breeding. 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 type="checkbox"/>	<input checked="" 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>Calcarius lapponicus</i>	Lapland Longspur	<input checked="" type="checkbox"/>	<input checked="" 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, (VU).	Probably breeding. See textbox below the table and in section 3.1.	
CHORDATA / AVES	 <i>Cygnus cygnus</i>	Whooper Swan	<input type="checkbox"/>	<input checked="" 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.	Probably breeding. See textbox below the table and in section 3.1.	
CHORDATA / AVES	 <i>Falco subbuteo</i>	Northern Hobby	<input type="checkbox"/>	<input checked="" 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"/>		Possibly foraging. 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"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive, Annex I.	Probably breeding. See textbox below the table and in section 3.1.	
CHORDATA / AVES	 <i>Limicola falcinellus</i>	Broad-billed Sandpiper	<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"/>		See textbox below the table and in section 3.1.	
CHORDATA / AVES	 <i>Luscinia svecica</i>	Bluethroat	<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 and in section 3.1.	
CHORDATA / AVES	 <i>Motacilla flava</i>	Western Yellow Wagtail	<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 and in section 3.1.	
CHORDATA / AVES	 <i>Numenius phaeopus</i>	Whimbrel	<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 and in section 3.1.	
CHORDATA / AVES	 <i>Phalaropus lobatus</i>	Red-necked Phalarope	<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 and in section 3.1.	
CHORDATA / AVES	 <i>Philomachus pugnax</i>	Ruff	<input checked="" 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"/>	Swedish Red List 2015, (VU). EC Birds Directive, Annex I.	Probably breeding. See textbox below the table and in section 3.1.	
CHORDATA / AVES	 <i>Pluvialis apricaria</i>	European Golden Plover; European Golden-Plover	<input type="checkbox"/>	<input checked="" 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.	Probably breeding. See textbox below the table and in section 3.1.	
CHORDATA / AVES	 <i>Poecile cinctus</i>	Gray-headed Chickadee; Siberian Tit	<input checked="" 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, (VU).	See textbox below the table and in section 3.1.	
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 and in section 3.1.	

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								
CHORDATA / AVES	<i>Tringa erythropus</i> 	Spotted Redshank	<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"/>		Probably breeding. See textbox below the table and in section 3.1.
CHORDATA / AVES	<i>Tringa glareola</i> 	Wood Sandpiper	<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"/>	EC Birds Directive, Annex I.	Probably breeding. See textbox below the table and in section 3.1.
CHORDATA / AVES	<i>Turdus iliacus</i> 	Redwing	<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 type="checkbox"/>	<input type="checkbox"/>		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, the Swedish red-list status and general information for that classification etc can be found at <http://artfakta.artdatabanken.se/>.

Criterion 2, 3 and 4: The observation can be found in the Swedish database for observations <http://www.artportalen.se/>.

Probably breeding is mentioned for species observed during the breeding season either occurring in pairs, singing/displaying and/or individuals being very upset by the presence of humans and giving warning calls or doing distracting/misleading behaviours.

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
Palsa mires (EU 7320)	<input checked="" type="checkbox"/>	The mires are mainly minerotrophic, excluding the palsas, which are peat mounds with sporadic permafrost. The palsas are usually 2-4 metres high, but up to 7 metres high palsas exists.	Habitat listed in the EC Habitats Directive, Annex I. The habitat type was considered to have an unfavourable conservation status in the Swedish part of the EU Boreal region 2013.

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

4.1 - Ecological character

Mannavuomaa is situated in a relatively flat landscape which is characterized foremost by aapa and palsa mires but there is also mixed coniferous forests present at the site. Several wetland types included in the National Wetland Survey under the collection name of transition mires and quaking bogs (EU 7140) make up the majority of the Ramsar site area. There are permanent pools of water and open mires present, often adjacent to palsas and in the flarks of the string mires. There are also forest covered mire islets and deciduous wet forests. The wetland vegetation is relatively poor and some of the prominent species are crowberry, labrador tea, cloudberry and Sphagnum fuscum. The vegetation in the flarks consists of species like cotton grass, string sedge, Carex limosa, round sedge and other similar species.

The biggest and most well developed palsa are located in the southeast part of the site and is subject to surveillance within the Environmental monitoring program. This palsa has been studied since the 1960s. The climate is changing and temperature is rising, especially during the winters in northernmost parts of Sweden. An increase in temperature also has an impact on the palsas. Studies show that the area of palsa mire has decreased from 11 hectares in 2009 to 8 hectares in 2016. The area covered by palsas has decreased from 1,15 in 2009 to 0,76 hectares in 2016.

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		0		Representative
Fresh water > Lakes and pools >> Tp: Permanent freshwater marshes/ pools		3	14	Representative
Fresh water > Marshes on peat soils >> U: Permanent Non-forested peatlands		4	559	Rare
Fresh water > Marshes on inorganic soils >> V: Shrub-dominated wetlands		0		Representative
Fresh water > Marshes on inorganic soils >> Xf: Freshwater, tree-dominated wetlands		4		Representative
Fresh water > Marshes on peat soils >> Xp: Permanent Forested peatlands		2	69	Representative

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)

Precipitation and temperature data shows an increase in both annual temperature and precipitation. Especially winters are warmer. This is a threat to the palsa mires in the area since the climate conditions are unfavourable for the palsas future existence.

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.

Mannavuoma lies within the upper parts of Torne river basin which is also the main river basin. Muonio river is a large tributary to Torne river and runs along the north border of the Ramsar site.

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

Please provide further information on the soil (optional)

Mannavuoma is situated far east of the Scandinavian mountain range where the primary bedrock is 2 around billion years old. The bedrock consists mainly of gneiss, granite and pegmatite. The dominating soil type is peat and in the south-east part of the western area till is the dominating soil type. There are also glaciofluvial sediments in Mannavuoma.

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 surface water	<input 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 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.

When water levels are high in the nearby river Mounio älv, riparian forest close to the river, and also low-laying areas close to the lake will be flooded.

4.4.5 - Sediment regime

Sediment regime unknown

4.4.6 - Water pH

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

Dystrophic

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

Unknown

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

Lakes surrounded by peatlands are probably dystrophic. There is no data for the other lakes and watercourses in or affecting the site.

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 are more coniferous forests covering the land in the surrounding area. There are also small town communities a little bit away from the site. There are still vast wetlands adjacent or close to the site, for example the border river and the Finnish Ramsar site.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Wetland non-food products	Livestock fodder	Low

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Erosion protection	Soil, sediment and nutrient retention	Medium

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Spiritual and inspirational	Aesthetic and sense of place values	Low
Scientific and educational	Long-term monitoring site	High

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	Low
Soil formation	Accumulation of organic matter	Low
Nutrient cycling	Carbon storage/sequestration	Medium

Within the site:

Outside the site:

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

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Religious body/organization	<input checked="" type="checkbox"/>	<input 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):

Within Mannavuoma the sámi village Kõnkämä have the rights to utilize the reindeer grazing land. There is a reindeer fence in the north part of the site belonging to Kõnkämä sámi village
A part of the Ramsar site also constitutes a core area of national interest for reindeer husbandry.

5.1.2 - Management authority

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

Länsstyrelsen i Norrbottens län (County Administrative Board of Norrbotten)
S-971 86 LULEÅ, Sweden.

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

Emilia Vesterberg

Postal address:

Länsstyrelsen i Norrbotten
971 86 LULEÅ, Sweden

E-mail address:

norbotten@lansstyrelsen.se

5.2 - Ecological character threats and responses (Management)

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

Energy production and mining

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

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Habitat shifting and alteration	Medium impact	High impact	<input checked="" type="checkbox"/>	increase	<input checked="" type="checkbox"/>	increase

Please describe any other threats (optional):

Energy production and mining: There are at present (2017) three granted exploration permits within a range of 40 km from the Ramsar site with all of them expiring in 2017. The closest lies 13 km from the site.

Climate change and severe weather: The climate is changing and temperatures are rising, especially during the winters in northernmost parts of Sweden. An increase in temperature also has an impact on the palsas. Studies show that the area of palsa mire has decreased from 11 hectares in 2009 to 8 hectares in 2016. The area covered by palsas has decreased from 1,15 in 2009 to 0,76 hectares in 2016.

Biological resource use: Unprotected areas are always subjected to risk of the land being exploited; in northern Sweden the threat of forest being logged is high.

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	Torne och Kalix älvsystem SAC	http://www.lansstyrelsen.se/norr-botten/SiteCollectionDocuments/Sv/djur-och-natur/skyddad-natur/Natura%202000/Kiruna,%20bevarandeplaner/Torne_Kalix_alsystem_2007.pdf	partly

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Area of national importance for nature conservation	Sulajoki-Karesuandoområdet	http://nvpub.vic-metria.nu/handlingar/rest/dokument/204203	partly
Area of national importance for nature conservation	Könkämä-Muonio älv, Kummaeno, Råstonsölkä	http://nvpub.vic-metria.nu/handlingar/rest/dokument/204202	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

<no data available>

5.2.4 - Key conservation measures

<no data available>

5.2.5 - Management planning

Is there a site-specific management plan for the site? No

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:

A small watercourse is part of a Natura 2000 site. For the conservation plan for that site see the URL in section 5.2.2.

5.2.6 - Planning for restoration

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

5.2.7 - Monitoring implemented or proposed

Environmental monitoring program targets wetlands and palsa mires in Sweden. Mannavuoma is included in this program. URL: <http://www.lansstyrelsen.se/Norrboten/Sv/miljo-och-klimat/tillstandet-i-miljon/vatmark/miljoovervakning/Pages/default.aspx>

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Wramner P., Wester K., Backe, S., Gunnarsson U., Hahn N. and Alsam S. 2015. Tawvuoma - Inledande dokumentation inom övervakningsprogram för Sveriges palsmyrar. Länsstyrelsens rapportserie nr 20/2015.

VISS-database. <http://www.viss.lansstyrelsen.se/>

Gärdefors, U. 2015. Rödlistade arter i Sverige 2015 - The 2015 Red List of Swedish Species. Artdatabanken, SLU, Uppsala.

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>

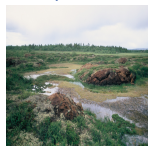
vi. other published literature

<no file available>

<no data available>

6.1.3 - Photograph(s) of the Site

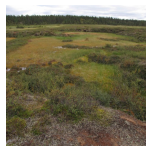
Please provide at least one photograph of the site:



Palsa mire in the central parts of Mannavuoma. (*Bernt Forsgren, 1967*)



Palsa mire in the central parts of Mannavuoma. (*Bernt Forsgren, 1967*)



Palsa mire in the central parts of Mannavuoma. Since 1967 the palsa has collapsed. (*Susanne Backe, 2014*)



Palsa mire in the central parts of Mannavuoma. Since 1967 the palsa has collapsed. (*Susanne Backe, 2014*)

6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation