



# Ramsar Information Sheet

Published on 31 March 2017

Update version, previously published on : 1 January 2008

## Sweden Östen



Designation date	12 June 1989
Site number	433
Coordinates	58°33'45"N 13°55'11"E
Area	1 486,00 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

Lake Östen is a shallow, eutrophic freshwater lake. The lake level is subject to considerable natural fluctuations, with extensive spring flooding. There is a rich submerged flora and the lake is surrounded by beds of Phragmites and Scirpus, giving way to Carex and grassland. The central and southern shores of the lake support thickets of Salix and Alnus.

The site is important as a staging area for birds, notably whooper swan (*Cygnus cygnus*) and bean goose (*Anser fabalis*) which occur in internationally significant numbers. The number of resting whooper swans has been decreasing in recent time due to lack of flooded areas during spring migration.

## 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	2008
To year	2015

#### 2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Östen
Unofficial name (optional)	originally designated as 'Lake Östen'

#### 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 checked="" type="checkbox"/>

#### 2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS?	Yes (actual)
(Update) Are the changes	Positive <input checked="" type="radio"/> Negative <input type="radio"/> Positive & Negative <input type="radio"/>
(Update) Positive %	30
(Update) No information available	<input type="checkbox"/>
(Update) Changes resulting from causes operating within the existing boundaries?	<input type="checkbox"/>

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

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

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

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

The site has been extended to fit the boundaries of protected areas and to include dry land mostly arable land that are important for staging birds. An area of open water is also included. Small part of built up areas and arable land has been excluded in the east.

(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 boundaries for the Ramsar site coincide with the combined boundaries of the Östen Nature Conservation Area and the Logården Nature Reserve. The Ramsar site also overlaps the Natura 2000 site Östen, with the exception of a small non-wetland field.

### 2.2.2 - General location

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

b) What is the nearest town or population centre?

### 2.2.3 - For wetlands on national boundaries only

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

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

### 2.2.4 - Area of the Site

Official area, in hectares (ha):

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

### 2.2.5 - Biogeography

Biogeographic regions

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

Other biogeographic regionalisation scheme

EEA, 2002. Digital Map of European Ecoregions (DMEER - Nordiska ministerrådet, 1977  
Nordiska ministerrådet, 1977. Naturgeografiska regioner i Norden - Boreonemoral zon

### 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 has some function as flood control downstream.
Other reasons	Lake Östen contains representative examples of natural wetland types (permanent lake, permanent fresh water marshes and flooded agricultural land) in the EU boreal region, The site is partly affected by natural water fluctuations.

- Criterion 2 : Rare species and threatened ecological communities

- Criterion 3 : Biological diversity

Justification	The site supports populations of especially bird species important for maintaining the biological diversity of the biogeographic region, primarily large numbers of geese, swans and ducks. Whooper swan ( <i>Cygnus cygnus</i> ) and bean goose ( <i>Anser fabalis</i> ) both occur in significant numbers pairs during spring and autumn migration). The site offers attractive conditions for breeding and above all migrating wetland birds.
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- Criterion 4 : Support during critical life cycle stage or in adverse conditions

- Criterion 5 : >20,000 waterbirds



Overall waterbird numbers	> 20 000
Start year	2016
Source of data:	www.artportalen.se
































- Criterion 6 : >1% waterbird population























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

<no data available>

#### 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 <sup>1)</sup>	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
<b>Birds</b>																		
CHORDATA / AVES	 <i>Alcedo atthis</i>	Common Kingfisher	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (MJ). EC Birds Directive Annex I.	See textbox below the table and in 3.1.

Phylum	Scientific name	Common name	Species qualifies under criterion			Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence <sup>1)</sup>	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7								
CHORDATA / AVES	<i>Anas acuta</i> 	Northern Pintail	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10			LC 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (VJ).	Staging and foraging. Numbers fluctuate with how large areas that are flooded. See textbox below the table and in 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 checked="" type="checkbox"/>	<input type="checkbox"/>	450	2016		LC 	<input type="checkbox"/>	<input type="checkbox"/>		Staging and foraging, a few breeding. Numbers fluctuate (200-1500) depending on how large areas that are flooded. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Anas penelope</i> 	Eurasian Wigeon	<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"/>		Staging and foraging, a few breeding. Numbers fluctuate (100-600) depending on how large areas that are flooded.
CHORDATA / AVES	<i>Anser albifrons</i> 	Greater White-fronted Goose	<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"/>		Staging and foraging. Numbers fluctuate, 50-150. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Anser anser</i> 	Greylag Goose	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5000	2016		LC 	<input type="checkbox"/>	<input type="checkbox"/>		Staging and foraging, a few breeding. In autumn about 5000-10000. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Anser brachyrhynchus</i> 	Pink-footed Goose	<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"/>		Staging and foraging. Numbers fluctuate, 100-150. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Anser erythropus</i> 	Lesser White-fronted Goose	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3		4	VU 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Swedish Red List 2015 (VJ). EC Birds Directive Annex I.	Staging 1-5 individuals. Estimated size of the Fennoscandia/Eastern Mediterranean population is 60-80 individuals. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Anser fabalis</i> 	Bean Goose	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15000	2016	30	LC 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (NT).	Staging and foraging. The total for the North-east Europe/North-west Europe population is 40-45000 individuals. Numbers at the site autumn: 15000-20000 and spring 5000-10000. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Botaurus stellaris</i> 	Eurasian Bittern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3			LC 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (NT). EC Birds Directive Annex I.	1-3 booming individuals. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Branta leucopsis</i> 	Barnacle Goose	<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.	Staging and foraging. Numbers fluctuate 50-150. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Circus aeruginosus</i> 	Western Marsh Harrier	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8			LC 	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I.	Foraging and breeding. 3-5 pairs at the site. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Circus cyaneus</i> 	Northern Harrier	<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"/>	Swedish Red List 2015 (NT). EC Birds Directive Annex I.	Staging and foraging. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Circus pygargus</i> 	Montagu's Harrier	<input checked="" type="checkbox"/>	<input checked="" 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 (EN). EC Birds Directive Annex I.	Foraging. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Crex crex</i> 	Corn Crane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20			LC 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (NT). EC Birds Directive Annex I.	10-15 males at the site. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Cygnus columbianus bewickii</i> 		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15				<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I.	See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Cygnus cygnus</i> 	Whooper Swan	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1000		1	LC 	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I.	Staging and foraging. The total for the North-west Mainland Europe population is 59 000. Number of individuals visiting the site 500-1000. See textbox below the table and in 3.1.

Phylum	Scientific name	Common name	Species qualifies under criterion			Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence <sup>1)</sup>	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7								
CHORDATA / AVES	<i>Dendrocopos minor</i> 	Lesser Spotted Woodpecker	<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"/>	Swedish Red List 2015 (NT).	Foraging and 5-10 pairs breeding in the forest. See textbox below the table and in 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"/>	15			LC 	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I.	Staging, foraging and 5-10 pairs breeding at the site. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Haliaeetus albicilla</i> 	White-tailed Eagle	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7			LC 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Swedish Red List 2015 (NT). EC Birds Directive Annex I.	Staging and foraging. 5-10 individuals at the site. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Hydroprogne caspia</i> 	Caspian Tern	<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 and in 3.1.
CHORDATA / AVES	<i>Limosa lapponica</i> 	Bar-tailed Godwit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (VU). EC Birds Directive Annex I.	Staging and foraging. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Mergellus albellus</i> 	Smew	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20			LC 	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I.	Staging and foraging. 10-40 individuals at the site. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Pandion haliaetus</i> 	Osprey, Western Osprey	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6			LC 	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I.	Foraging. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Philomachus pugnax</i> 	Ruff	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50			LC 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (VU). EC Birds Directive Annex I.	Staging and foraging. Numbers that visit the site 20-100. See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Podiceps auritus</i> 	Horned Grebe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU 	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I.	See textbox below the table and in 3.1.
CHORDATA / AVES	<i>Porzana porzana</i> 	Spotted Crane	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3			LC 	<input type="checkbox"/>	<input type="checkbox"/>	Swedish Red List 2015 (VU).	1-3 males at the site. See textbox below the table and under 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"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	EC Birds Directive Annex I.	Staging and foraging. 50-500 individuals at the site. See textbox below the table and in 3.1.

1) Percentage of the total biogeographic population at the site

Criterion 2, 3, 4, and 6: For all species, their status in the Swedish Red List and general information for that classification etc can be found at <http://artfakta.artdatabanken.se/>. Observations can be found in [www.artportalen.se](http://www.artportalen.se).

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

<no data available>

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

### 4.1 - Ecological character

The open lake is dotted with clumps of *Scirpus* spp. In the western part of the lake, submerged vegetation is dominated by water-milfoil (*Myriophyllum* spp.), pondweed (*Potamogeton* spp.) and some hornwort (*Ceratophyllum* spp.). Floating vegetation, such as water-lilies (*Nuphar* spp.) and bur-reed (*Sparganium* spp.), is also widespread in sheltered areas. The distribution of submerged vegetation changes between years due to the water level variation. The surroundings are dominated by *Scirpus* and *Phragmites* reeds, important to breeding birds like bittern (*Botaurus stellaris*) and marsh harrier (*Circus aeruginosus*). In recent years, the distribution of *Phragmites* has decreased in some parts of the lake due to intensive geese grazing. Large flat areas of grasslands that have not been fertilized or ploughed for a long time are important for breeding waders, ducks and species like corncrake.

Grazing or hay cutting on the wet meadows is very important for breeding ducks and waders. About 50% of the wet meadows are grazed by cattle. The lake shore is mainly dominated by slender tufted-sedge (*Carex acuta*), reed canary-grass (*Phalaris arundinacea*) and reed sweet-grass (*Glyceria maxima*). These species are disfavoured by the grazing of the wet meadows. In the upper part of the shore smaller species of *Carex*, especially common sedge (*Carex nigra*), and different species of grass take over. These species are favoured by the grazing.

The flora does not include any noteworthy species, but is represented by species typical for wetland habitats in this region.

Wet forest with alder (*Alnus* spp.) and willow (*Salix* spp.) is typical in some parts of the site. There are also arable fields in the area, especially in the southern parts. The spring flooding areas with slender tufted-sedge, reed canarygrass and reed sweet-grass are important for feeding and staging whooper swans (*Cygnus cygnus*)\*.

About 90 % of the fish biomass consists of prey species ("whitefish") while the remaining part is predatory species.

During spring and autumn staging wetland birds, especially geese and whooper swans, are feeding on the surrounding arable fields during the day and rest in the lake at night. Staging ducks are favoured by the flooding of the wet meadows during April. Staging waders also use the flooded wet meadows in spring.

\* = species listed in the EU birds directive

### 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 >> O: Permanent freshwater lakes		1	300	Representative
Fresh water > Lakes and pools >> Tp: Permanent freshwater marshes/ pools		2	550	Representative
Fresh water > Marshes on inorganic soils >> Xf: Freshwater, tree-dominated wetlands		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		3	200	Representative

#### Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
arable land	
mixed forest	
pastures	
deciduous forest	

### 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	Dfb: Humid continental (Humid with severe winter, no dry season, warm summer)

A result of a change in the weather conditions, with milder winters, during the last decade is that flooding now takes place less regularly. Flooding during summers now occur more often due to more rain in the catchment area.

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 lies in the lower part of the local catchment area of the river Tidan, in the middle part of the Göta älv-Klarälven-Trysil river basin. The Göta älv finally enters the sea of Skagerack.

4.4.3 - Soil

Mineral

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

No available information

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

Please provide further information on the soil (optional)

The agricultural lands near lake Östen are dominated by clay.

4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	No change
Usually seasonal, ephemeral or intermittent 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 destination

Presence?	Changes at RIS update
To downstream catchment	No change

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

The lake has been lowered several times in the past, most recently at the end of the nineteenth century. The lake level is still subject to considerable natural fluctuations, with extensive spring flooding, which helps to free the lake from ice early in the year and creates a relatively large area of wet meadows.

Water permanence is very low due to a large catchment area in relation to the lake surface. The mean water flow is 15,4 m<sup>3</sup>/s, with extreme highs and lows at 80 m<sup>3</sup>/s and 1,6 m<sup>3</sup>/s. The highest water flow used to be in March or April. Spring flooding now takes place less regular due to a change in weather conditions in the last decades, with milder winters. Flooding during summers now occur more often due to more rain in the catchment area. The water level amplitude is 140 cm between mean highest water level and mean lowest water level.

Between 1978 and 1986, the mean water depth in the lake was 112 cm, but this was lowered to 86 cm after removal of sediment at the outlet.

#### 4.4.5 - Sediment regime

Sediment regime unknown

Please provide further information on sediment (optional):

There are no sufficient data on the speed of sedimentation. However, sedimentation does not normally occur in the lake, with the exception of shallow water with reed and other large macrophytes.

#### 4.4.6 - Water pH

Alkaline (pH>7.4)

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

Unknown

Please provide further information on pH (optional):

pH in the lake is approximately 7,5. The bed-rock is rich in lime and is therefore not affected by acidification.

#### 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

Eutrophic

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

Unknown

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

Phosphorus contents are extremely high, between 0,05-0,1 mg/l in the last years. Nitrogen contents are also very high, with levels between 1,0-2,0 mg/l. The outlet has very turbid water during flooding, due to fluvial deposits of clay and mud from agriculture. Therefore, sedimentation does not occur in the open water body, only in areas with shallow water and within Phragmites and Scirpus vegetation. The clearance depth is 1 m. Since water permanence is very low and the water flow through the lake is high, lake Östen has little function in flood control and nutrient trapping.

#### 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 number of inhabitants in the catchment area is 95 000 and the rivers are recipients from the cities Tibro, Tidaholm and Skövde. The general land use is forestry (48%), agriculture (28 %), pastures (4%), cities (3%) and other land uses (15%).

### 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
Wetland non-food products	Livestock fodder	Medium

## 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	Medium
Recreation and tourism	Picnics, outings, touring	Medium
Spiritual and inspirational	Cultural heritage (historical and archaeological)	Medium
Scientific and educational	Major scientific study site	Medium
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	Medium
Scientific and educational	Educational activities and opportunities	Medium

Other ecosystem service(s) not included above:

The area is an important archaeological site with relicts from the Stone Age. One of the most important Iron Age grave fields in Sweden is situated in Askeberga, close to lake Östen.

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

## 4.5.2 - Social and cultural values

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

<no data available>

## 4.6 - Ecological processes

<no data available>

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

### 5.1 - Land tenure and responsibilities (Managers)

#### 5.1.1 - Land tenure/ownership

##### Public ownership

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

##### Private ownership

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

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

Approximately 8 percent of the area is owned by the National government.

#### 5.1.2 - Management authority

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

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

Postal address:

E-mail address:

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

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

#### Natural system modifications

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

#### Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Agricultural and forestry effluents			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

Please describe any other threats (optional):

Decline in traditional grazing and hay cutting is an actual and potential threat due to changes in land use.

Reed vegetation, Phragmites and Scirpus, increased in the lake during 1993 to 1999, but has decreased during last years. The reason is not clarified, but increasing number of grazing geese, especially Grey-lag goose, seems to be one factor.

#### 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	Östen	<a href="http://www.lansstyrelsen.se/vastragotaland/SiteCollectionDocuments/Sv/djur-och-natur/skyddad-natur/natura-2000/bevarandeplaner/Mariestad/osten-se0540062.pdf">http://www.lansstyrelsen.se/vastragotaland/SiteCollectionDocuments/Sv/djur-och-natur/skyddad-natur/natura-2000/bevarandeplaner/Mariestad/osten-se0540062.pdf</a>	whole

##### National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
nature conservation area	Östen	<a href="http://www.lansstyrelsen.se/vast-ragotaland/Sv/djur-och-natur/skyddad-natur/naturreservat/lanets-naturreservat/toreboda/osten/Pages/index.aspx">http://www.lansstyrelsen.se/vast-ragotaland/Sv/djur-och-natur/skyddad-natur/naturreservat/lanets-naturreservat/toreboda/osten/Pages/index.aspx</a>	partly
nature reserve	Logården	<a href="http://www.lansstyrelsen.se/vast-ragotaland/Sv/djur-och-natur/skyddad-natur/naturreservat/lanets-naturreservat/mariestad/logarden/Pages/index.aspx">http://www.lansstyrelsen.se/vast-ragotaland/Sv/djur-och-natur/skyddad-natur/naturreservat/lanets-naturreservat/mariestad/logarden/Pages/index.aspx</a>	partly
site of national importance for nature conservation	Östen		whole

## Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Important Bird Area	Lake Östen	<a href="http://datazone.birdlife.org/site/factsheet/lake-osten-iba-sweden">http://datazone.birdlife.org/site/factsheet/lake-osten-iba-sweden</a>	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

## Habitat

Measures	Status
Hydrology management/restoration	Proposed
Habitat manipulation/enhancement	Partially implemented

## Other:

Measures to introduce a variation in water level more beneficial to the wetland habitats and wetland birds are looked into.

A collaboration project has been carried out during 2014-2015 to facilitate and enhance the management of the wet meadows around lake Östen.

## 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:

An old homestead association runs an Information Centre at the southwest of the lake, called Logården. The centre contains a small exhibition together with information booklets and a cafeteria. The association also arranges guided tours around the lake.  
<https://www.hembygd.se/odensaker/>

There is a bird watching platform that is accessible by car for people with difficulties walking.

### 5.2.6 - Planning for restoration

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

### 5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Animal species (please specify)	Implemented

The bird conservation association, "Skövde Fågelklubb", monitors the most important staging and some breeding bird fauna annually, focusing on migrating whooper swans and geese.

## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

Bevarandeplan för Natura 2000-området SE0540062 Östen (Management plan for Natura 2000 site Östen). Länsstyrelsen i västra Götalands län 2006.

European Environment Agency. 2003. Europe's environment: the third assessment, p 231. Environmental assessment report No 10. Luxembourg: Office for Official Publications of the European Communities.

Bergman, F. 2000. Utbredningsförändringar hos vassbälten och sävruggar i sjön Östen- en jämförelse mellan åren 1993 och 1999. Report. University of Lund.

Jannert, J. 2003. Restoration of Lake Östen-a wetland of international importance for migrating birds. County Administration of Västra Götaland, Mariestad.

Neuendorf, M. 2001. Kommentarer till vegetationskarta över sjön Östen upprättad efter IR-fotografier tagna i juli 1999. Report. Göteborg

Pehrsson, O. 1999. Östens vattenregim-förslag till reglering. Report. Olof Pehrsson Ekologi-Konsult.

Nordiska Ministerrådet, 1977. Naturgeografisk regionindelning av Norden . NU B 1977:34

#### 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

<2 file(s) uploaded>

vi. other published literature

<1 file(s) uploaded>

#### 6.1.3 - Photograph(s) of the Site

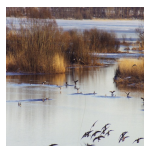
Please provide at least one photograph of the site:



Walking path to bird watching tower ( Länsstyrelsen i Västra Götaland, 04-10-2012 )



Lake Östen ( Länsstyrelsen i Västra Götaland, 15-07-2004 )



Geese at lake Östen ( Länsstyrelsen i Västra Götaland, 10-03-2005 )



Geese at lake Östen ( Länsstyrelsen i Västra Götaland, 26-09-2013 )

#### 6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation