



Ramsar Information Sheet

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Update version, previously published on : 1 January 2012

Norway

Nordre Tyrifjord Wetlands System



Designation date	18 March 1996
Site number	802
Coordinates	60°07'01"N 10°12'03"E
Area	322,00 ha

Color codes

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

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

1 - Summary

Summary

The site is situated in the county Buskerud in the south-east of Norway in the inland fjord Tyrifjorden. It consists of five separate nature reserves comprising the mouth of the Sokna river where it flows into Tyrifjorden (Karlsruadtangen), the oxbow lakes (Juveren, Lamyra and Synneren) and the Sokna river mouth (Averøya). The rivers Storelva and Sokna have formed the delta landscape out into the Nordfjord, which is the north-western part of Tyrifjord, with several islands and spits, oxbow lakes and channels in various stages of succession, boggy areas, meadows at the edge of freshwater, freshwater drift walls and clay mudbanks which are exposed during periods of low water in spring and autumn, caused by the regulation of water levels in Tyrifjord. Grey alder *Alnus incana* woodland and wet willow woodland grow along the river banks.

This is a very important inland site for migrating and wintering wetland birds in southern Norway with the five sub-sites forming together a network within which the birds move. Several thousand wildfowl gather in the spring, and the area is important in particular as a staging site for the Svalbard population of the pink-footed goose *Anser brachyrhynchus* and for the whooper swan. There is a large overland migration of the great cormorant *Phalacrocorax carbo* moving between the Oslofjord and western Norway, and flocks may land in Nordfjorden to rest.

During the spawning period for the smelt *Osmerus eperlanus* in October/November over 600 goosanders have been observed in Nordfjorden and the lower reaches of the Storelva river, making this a very important site for the species in autumn in southern Norway.

Waders are not so numerous, although in a regional perspective the area is an important staging site. In total, around 235 bird species are recorded in the wetland system, the majority of these within the protected parts.

The site is also important as a breeding site for a number of bird species.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Compiler 1

Name	Ellen Haakonsen Karr
Institution/agency	Norwegian Environment Agency
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2.1.2 - Period of collection of data and information used to compile the RIS

From year	2005
To year	2017

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Nordre Tyrifjord Wetlands System
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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? No

2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image

<1 file(s) uploaded>

Former maps	0
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Boundaries description

The boundary is the same as for the five sub-sites; Karlsrudtangen, Averøya, Juveren, Lamyra and Synneren Nature Reserves.

2.2.2 - General location

a) In which large administrative region does the site lie?	Buskerud
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b) What is the nearest town or population centre?	Hønefoss
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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):	322
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Area, in hectares (ha) as calculated from
GIS boundaries

321.6

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Marine Ecoregions of the World (MEOW)	1. Boreonemoral vegetation zone, transitional section (BN-OC).
EU biogeographic regionalization	2. Boreal

Other biogeographic regionalisation scheme

1. Zonal division showing the variation in vegetation from south to north and from the lowlands to the mountains, and sectional graduation showing the variation between the coast and inland (In: Moen, A. 1998. Nasjonalatlas for Norge; vegetasjon. Statens kartverk, Hønefoss).
2. Biogeographical regions of Europe, European Environment Agency, 2005

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 delta in Tyrifjorden is formed by transportation of sediments from the rivers Storelva and Sogna. The delta functions as a barrier or trap for sediments and has an important function of nutrient fixing.

Other reasons

One of southern Norway's largest inland deltas. The delta consists of slow flowing, meandering rivers, several oxbow lakes in varying stages of succession and channels along the Tyrifjorden. In the deltas by Averøya and Karlsrudtangen, there are large islands with sandy beaches and meadows at the edge of freshwater with an interesting flora, as well as fine-grained mud/silt banks.

- Criterion 2 : Rare species and threatened ecological communities

- Criterion 3 : Biological diversity

Justification

Inland delta with interesting vegetation, as well as a high diversity of bird species.

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

- Criterion 6 : >1% waterbird population

- Criterion 8 : Fish spawning grounds, etc.

Justification

Several species have important spawning and rearing grounds in the lower reaches of the Storelva river and in Karlsrudtangen nature reserve, including Trout *Salmo trutta*, Smelt *Osmerus eperlanus* and Pike *Esox lucius*. In the river Randselva we find a population of Trout *Salmo trutta* that passes the delta (and sub-site) Averøya on its way to the spawning grounds further up in the river.































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>Bidens cernua</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	National Red List: Considered as VU	Occurrences of this red-listed species at Juveren, Karlsrudtangen and Averøya.
<i>Carex elata</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	National Red List: Considered as VU	This species is registered at the sub-site Lamyra.
<i>Crassula aquatica</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List: Considered as VU	This species is registered at the sub-sites Karlsrudtangen and Synneren.
<i>Deschampsia cespitosa cespitosa</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List: Considered as VU	This species is registered at the sub-site Karlsrudtangen and is connected to the mud/silt banks here.
<i>Dryopteris cristata</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List: Considered as EN	This species is registered at the sub-site Lamyra.
<i>Hamatocaulis vernicosus</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List: Considered as VU	There is an old record of this species from Mbjern in Lamyra.
<i>Hierochloa odorata</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List: Considered as VU	This species is registered in and around the sub-site Synneren.
<i>Myriophyllum verticillatum</i>	Whorled Water-milfoil	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	National Red List: Considered as VU	This species is registered at the sub-site Lamyra and is associated with the lime-rich mire type here.
<i>Potamogeton lucens</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	National Red List: Considered as VU	This species is registered at the sub-site Lamyra and is associated with the lime-rich mire here.
<i>Stellaria palustris</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List: Considered as VU	This species is registered at the sub-site Lamyra
<i>Thelypteris palustris</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	National Red List: Considered as VU	This species is registered at the sub-site Lamyra
<i>Viola persicifolia</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List: Considered as VU	Occurrences of this red-listed species at Juveren and Averøya.

Species listed under Criterion 2 which are not yet included in the Catalogue of Life:
 Nitella confervacea: National Red List: Considered as EN
 Chara braunii: National Red List: Considered as VU, This species has previously been found at Juveren, but is now believed to be extinct.
 The Norwegian Red List 2015 is used.

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																		

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>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"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as VU	Criterion 4: The reserves are a staging and wintering sites for this species.
CHORDATA/AVES	 <i>Anas clypeata</i>	Northern Shoveler	<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"/>	1				<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as VU	(0-1 pair) Criterion 4: The reserves are a staging and wintering sites for this species. This species also breeds on the site.
CHORDATA/AVES	 <i>Anas penelope</i>	Eurasian Wigeon	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: Important staging site for this species.
CHORDATA/AVES	 <i>Anas querquedula</i>	Garganey	<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"/>	1				<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as EN	(0-1 pair) Criterion 4: Mainly important as staging site, but breeding occurs.
CHORDATA/AVES	 <i>Anser brachyrhynchus</i>	Pink-footed Goose	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4500		7.14	LC 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: The area is important as a staging site. Criterion 6: Up to 4500 of this species regularly rest and feed on the site, mostly within Karlsrudtangen nature reserve, in spring. Biogeographic region: Svalbard/Nord-west Europe
CHORDATA/AVES	 <i>Anser fabalis</i>	Bean Goose	<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"/>	22			LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as VU	(up to 22 individuals) Criterion 4: The reserves are a staging and wintering sites for this species.
CHORDATA/AVES	 <i>Charadrius dubius</i>	Little Ringed Plover	<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"/>	2			LC 	<input type="checkbox"/>	<input type="checkbox"/>	Annex II, Bern Convention	(1-2 pairs) Criterion 4: Nationally and regionally scarce species and/or threatened species which breed include this species.
CHORDATA/AVES	 <i>Circus aeruginosus</i>	Western Marsh Harrier	<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"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as VU	Criterion 4: Staging area for this species
CHORDATA/AVES	 <i>Circus cyaneus</i>	Northern Harrier	<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"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as EN	Criterion 4: The area is most important as a staging site during migration for this nationally red-listed species.
CHORDATA/AVES	 <i>Crex crex</i>	Corn Crake	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as CR Annex II, Bern Convention	This rare species has been observed at the site.
CHORDATA/AVES	 <i>Cygnus cygnus</i>	Whooper Swan	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	400	2004-2013		LC 	<input type="checkbox"/>	<input type="checkbox"/>		(400 ind.) Criterion 4: The areas main function is as a staging site during spring and autumn migration, and a number of this species breeds or have bred in the area, and the area is also important as a wintering site for this species.
CHORDATA/AVES	 <i>Cygnus olor</i>	Mute Swan	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: This species is a characteristic species in the area throughout the year, and several pairs breed in the oxbow lakes.
CHORDATA/AVES	 <i>Dendrocopos minor</i>	Lesser Spotted Woodpecker	<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"/>	4				<input type="checkbox"/>	<input type="checkbox"/>	Annex II, Bern Convention	(3-4 pairs) Criterion 4: Nationally and regionally scarce species and/or threatened species which breed include this species.
CHORDATA/AVES	 <i>Fulica atra</i>	Eurasian Coot	<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"/>	15			LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as VU	(ca 15 pairs) Criterion 4: Nationally and regionally scarce species and/or threatened species which breed include this species.
CHORDATA/AVES	 <i>Gallinula chloropus</i>	Common Moorhen	<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"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as VU	Criterion 4: Breeding and staging site for this species.
CHORDATA/AVES	 <i>Grus grus</i>	Common Crane	<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"/>	13			LC 	<input type="checkbox"/>	<input type="checkbox"/>	Annex II, Bern Convention	(5-20 ind.) Criterion 4: The reserves are a staging and wintering sites for this species.
CHORDATA/AVES	 <i>Melanitta nigra</i>	Black Scooter	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	45			LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as NT	(up 60 in spring and 30 in autumn) Criterion 4: The reserves are a staging and wintering sites for this species.

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>Mergellus albellus</i>	Smew	<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"/>	6			LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as VU	(6 individuals) The area is most important as a staging site during migration for this national red-listed species. The most important site in south-eastern Norway during the spring and autumn migration
CHORDATA/AVES	<i>Mergus merganser</i>	Common Merganser	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: Important staging and feeding site for this species.
CHORDATA/AVES	<i>Phalacrocorax carbo</i>	Great Cormorant	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: There is a large overland migration of this species moving between the Oslofjord and western Norway, and flocks may land in Nordfjorden to rest.
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as EN	Criterion 4: Staging site for this species
CHORDATA/AVES	<i>Podiceps cristatus</i>	Great Crested Grebe	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40			LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as NT	(up to 40 during spring migration) Criterion 4: The reserves are a staging and wintering sites for this species.
CHORDATA/AVES	<i>Rallus aquaticus</i>	Water Rail	<input checked="" type="checkbox"/>	<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"/>	National Red List: Considered as VU	Criterion 4: Staging and breeding area for this species.
CHORDATA/AVES	<i>Sterna hirundo</i>	Common Tern	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2			LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as EN	(0-2 pairs) Criterion 4: Nationally and regionally scarce species and/or threatened species which breed include this species.
CHORDATA/AVES	<i>Tachybaptus ruficollis</i>	Little Grebe	<input checked="" type="checkbox"/>	<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"/>	National Red List: Considered as VU	Occasionally observed as a wintering species
CHORDATA/AVES	<i>Vanellus vanellus</i>	Northern Lapwing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>	National Red List: Considered as EN	Criterion 4: Breeding and staging site for this species.
Fish, Mollusc and Crustacea																		
CHORDATA/ACTINOPTERYGII	<i>Anguilla anguilla</i>	European eel; European eel; European eel; European eel; European eel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				CR 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List: Considered as VU	Criterion 8: This threatened species is registered at the site.
ARTHROPODA/MALACOSTRACA	<i>Astacus astacus</i>		<input checked="" type="checkbox"/>	<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"/>	National Red List: Considered as EN	There is a scattered population of this species in Nordre Tyrifjorden, including the outer part of Karlsrudtangen nature reserve along the west side of Nordfjorden.
CHORDATA/ACTINOPTERYGII	<i>Esox lucius</i>	Northern Pike	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4 and 8: spawning and rearing grounds at the site.
CHORDATA/ACTINOPTERYGII	<i>Osmerus eperlanus</i>	Sea smelt	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	600			LC 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4 and 8: Spawning and rearing grounds for this species. This species has a Limited number of living areas in Norway, Tyrifjorden is one of them.
CHORDATA/ACTINOPTERYGII	<i>Salmo trutta</i>	Herling	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4 and 8: spawning and rearing grounds at the site.

1) Percentage of the total biogeographic population at the site

It is referred to The Norwegian Red List 2015.
 Criterion 4 for the Fish species Pike, Sea smelt and Herling: they have important spawning and rearing grounds in the lower reaches of the Storelva river and in Karlsrudtangen nature reserve.

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
Riverside vegetation/underwater vegetation	<input type="checkbox"/>	Annual vegetation on exposed banks, regularly flooded.	These vegetation communities host a number of rare and threatened species which need protecting together with their biotope.
Oxbow lakes	<input checked="" type="checkbox"/>	The sub-sites Synneren and Juveren are intact oxbow lakes.	This nature type is listed as EN on the Norwegian Red List for Ecosystems and Habitat types 2011
Lime-rich lowland mire expanse	<input checked="" type="checkbox"/>	Part of the sub-site Lamyra consists of this nature type.	This nature type is listed as EN on the Norwegian Red List for Ecosystems and Habitat Types 2011.
Semi-natural grassland	<input checked="" type="checkbox"/>	Typical grazed Meadow vegetation.	This nature type is listed as VU on the Norwegian Red List for Ecosystems and Habitat types 2011

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

4.1 - Ecological character

The Nordre Tyrifjord area as a whole is characterised by the inland delta and meandering rivers Storelva and Sogna. Reserves Juveren and Synneren are shallow permanent oxbow lakes, which still have large areas of open water. These two sub-sites have very high numbers of birds. The shore is characterised by large populations of Equisetum fluviatile along belts of Sedge Carex and Salix cinerea scrub, and these areas flood regularly. The muddy areas have annual vegetation on exposed banks with several threatened species, whereas the areas of open water are dominated by aquatic vegetation such as Canadian Pondweed Elodea canadensis and Pondweeds Potamogeton. Lamyra is also an oxbow lake, but in a later stage of vegetational succession. The reserve at Lamyra is mainly bog areas with sedge meadows and reedbeds Phragmites communis and minerotrophic rich mires with wet willow woodland along the edges. Two small pools have some open water. Averøya is a delta area with many small channels, flood pools and meadows beside freshwater with sedges in the inner parts and mudbanks with a rich annual vegetation on exposed banks and underwater meadows further out. The sites are very important to a high number of water birds, mainly as a resting and staging area, and supports several threatened species.

The invertebrate fauna is insufficiently known. Tyrifjorden has a wide diversity of fish, and several species have important spawning and rearing grounds in the lower reaches of the Storelva river and in Karlsrudtangen nature reserve, including Trout Salmo trutta, Smelt Osmerus eperlanus and Pike Esox lucius.

Juveren and Synneren have fewer fish species, mainly Pike, Bream Abramis brama and Crucian Carp Carassius carassius.

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 >> L: Permanent inland deltas		1		Representative
Fresh water > Flowing water >> M: Permanent rivers/ streams/ creeks		2		
Fresh water > Lakes and pools >> O: Permanent freshwater lakes	Oxbow lakes	2		Rare
Fresh water > Lakes and pools >> P: Permanent freshwater marshes/ pools		3		
Fresh water > Marshes on inorganic soils >> S: Seasonal/ intermittent freshwater marshes/ pools on inorganic soils		3		
Fresh water > Marshes on peat soils >> U: Permanent Non-forested peatlands		2		
Fresh water > Marshes on inorganic soils >> V: Freshwater, tree-dominated wetlands		3		
Fresh water > Marshes on peat soils >> X: Permanent Forested peatlands		4		

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Scientific name	Common name	Position in range / endemism / other
<i>Callitriche hermaphroditica hermaphroditica</i>		This species was registered at the sub-site Juveren, but is believed to possibly be gone due to overgrowing.
<i>Camarophyllopsis schulzeri</i>		National Red List: Considered as NT, Species detected at Juveren in meadows.
<i>Carex heleonastes</i>		National Red List: Considered as NT
<i>Elatine hydropiper</i>		National Red List: Considered as NT
<i>Elatine triandra</i>		National Red List: Considered as NT
<i>Lythrum portula</i>		Species believed to have disappeared due to overgrowing of mudbanks and oxbow lakes.

Invasive alien plant species

Scientific name	Common name	Impacts	Changes at RIS update
<i>Elodea canadensis</i>		Actually (minor impacts)	unknown

Optional text box to provide further information

Species listed under Biological Component which are not yet included in the Catalogue of Life:
 Hierochoë hirta spp. hirta: Species found at Onsakervika, probably at Sandtangen in Averøya nature reserve.

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/AMPHIBIA	<i>Lissotriton vulgaris</i>					This species is recorded in a pool/channel at Averøya, moor frog is also recorded in Lamyra nature reserve.
CHORDATA/AMPHIBIA	<i>Rana arvalis</i>					National Red List: Considered as NT This species is recorded in a pool/channel at Averøya, moor frog is also recorded in Lamyra nature reserve.

Invasive alien animal species

Phylum	Scientific name	Common name	Impacts	Changes at RIS update
CHORDATA/AVES	<i>Branta canadensis</i>	Canada Goose	Potentially	unknown
CHORDATA/MAMMALIA	<i>Neovison vison</i>	American Mink	Potentially	unknown

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)

The area has a slightly continental climate, with relatively warm summers and cold winters and moderate annual precipitation (500 – 700 mm). The climate within the watershed varies from slightly continental by Tyrifjorden to slightly oceanic in the west – with considerably higher annual precipitation and colder summers than lower down in the watercourse.

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.

Storelva and Sokna

The delta by the mouth of the Storelva river is rich in various components. There are active river meanders, oxbow lakes, river terraces, terrace edges, old river courses, flood channels and freshwater drift walls along the stretch between Karlsrudtangen to Averøy in Nordfjorden. The sandbanks at the mouth of Storelva are constantly changing due to active processes within the delta. The rising land surface after the last ice age has led to river meanders becoming cut off from Storelva.

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)

The outer parts of the delta beyond Averøya and Karlsrudtangen are mainly made up of fine-grained material (sand, silt and clay), whereas there is more variation in substrate type along the rivers and oxbow lakes – but even here it is mainly clay soils. Glacial river deposits are mainly made up of coarser material. The soil at all of the sub-sites is organic. Mineral soils are present chiefly in small areas of pinewood at the rivermouths.

Quartergeologically there are impressive deposits in the form of clay plains, alluvial deposits and glacial river deposits. There are large ice-edge deltas made up of sand and gravel in the area, and Storelva has dug into these and exposed marine deposits of clay.

4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	

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 depth within the protected areas is between 0 – 2 m. Large areas of mud are exposed when water levels in Tyrifjorden are low. The watercourse has a regulation regime of 1 m, and water levels are lowest in spring. During periods with little precipitation in summer a number of mudbanks may be exposed in late summer/autumn.

4.4.5 - Sediment regime

Significant accretion or deposition of sediments occurs on the site

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

Sediment regime unknown

Please provide further information on sediment (optional):

Transportation of sediments from Storelva and Sokna are responsible for the making of the deltas at Averøya and Karlsrudtangen. The area functions as a barrier or trap for sediments and has an important function as regards sedimentation and fixing of nutrients (especially nitrogen and phosphor).

4.4.6 - Water pH

Circumneutral (pH: 5.5-7.4)

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

Unknown

Please provide further information on pH (optional):

Tyrifjorden is a typical clear water lake with little humus and has a good ionic composition. Water pH is between 6.8 – 7.2. Storelva has good quality water for such a large river, although periodically there are high levels of intestinal bacteria.

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

Unknown

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

Nutrient Levels vary between sub-sites. The water quality was however described as very good, according to latest tests (Methods as described in EU Water Framework).

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 i) broadly similar ii) significantly different site itself.

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:

Both Tyrifjorden and Storelva are regulated to provide hydroelectricity. The reserve is surrounded by intensive farming, and about 25% of the delta by the mouth of Storelva is agricultural land. Hønefoss, with about 13500 residents, is a little north of Averøya. The rivers Randselva and Begna meet and Hønefoss, and then form Storelva. Further up this watercourse and the Sokna river are several smaller settlements. Helgelandsmoen military camp is situated around 1 km north-west of the reserve, on the eastern bank of Storelva. The camp is currently being dissembled.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Fresh water	Water for irrigated agriculture	Medium
Wetland non-food products	Livestock fodder	Medium

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Erosion protection	Soil, sediment and nutrient retention	Medium
Pollution control and detoxification	Water purification/waste treatment or dilution	Medium
Hazard reduction	Coastal shoreline and river bank stabilization and storm protection	Medium
Hazard reduction	Flood control, flood storage	High

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	Medium
Recreation and tourism	Picnics, outings, touring	Medium
Recreation and tourism	Recreational hunting and fishing	Medium
Scientific and educational	Major scientific study site	Medium
Scientific and educational	Educational activities and opportunities	Medium
Scientific and educational	Long-term monitoring site	Medium

Other ecosystem service(s) not included above:

The area functions as a barrier or trap for sediments and has an important function of nutrients fixing (especially nitrogen and phosphor). Due to a large watershed, the river plays an important role in flood reduction, although extensive ditching along the low lying areas allows water to flow faster into the main rivers and this results in frequent flooding, especially during snowmelt in spring. The remaining, unexploited marsh and wetland areas are therefore important to reduce flooding elsewhere along the watercourse. Vegetation within Averøya nature reserve is important for stabilising the shoreline at the mouth of Storelva and Nordfjorden.

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
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 the Ramsar site: Private
in the surrounding area: Private

5.1.2 - Management authority

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

County Governor of Buskerud

Postal address:

P. O. Box 1604, N-3007 Drammen

E-mail address:

fmbupost@fylkesmannen.no

5.2 - Ecological character threats and responses (Management)

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

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Roads and railroads	unknown impact	High impact	<input checked="" type="checkbox"/>	increase	<input checked="" type="checkbox"/>	increase

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Recreational and tourism activities			<input checked="" type="checkbox"/>		<input type="checkbox"/>	

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Unspecified/others	Medium impact	Medium impact	<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Dams and water management/use	Low impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Problematic native species			<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Invasive non-native/ alien species	Medium impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

Pollution

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

Please describe any other threats (optional):

Within the Ramsar site:
 There are approved plans to build a new railroad through the site, as well as upgrading the existing road E16. This will mean creating a barrier through the site, and it is a potential threat to the existing site, well as other wetland areas proposed for inclusion within it. Because this project has a potentially high impact on the wetland functions, and some negative effects are almost impossible to avoid, there is an obligation to protect other areas in close proximity to the areas that are affected by the project. This is a method called ecological compensation. The Norwegian Environment Agency (as the responsible national implementing authority of the Convention) formally informed the Ramsar Secretariat in March 2013 about this project, as the Article 3.2 require.

Regulation of the Begna watercourse/Storelva affects water levels and the geomorphological processes in all of the reserves, especially Averøya and Karlsrudtangen. As the regulation results in less flooding then the natural processes within the delta are somewhat subdued.

There have been some issues with overgrowing of Meadows, but in the last years cattle has been grazing at the site and the problem had decreased.
 Canadian pondweed has formed dense populations in both Juveren and Synneren, and is a potential threat to native species.

5.2.2 - Legal conservation status

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
nature reserves	Lamyra, Averøya, Karlsrudtangen, Juveren and Synneren		partly

5.2.3 - IUCN protected areas categories (2008)

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

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Other:

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:

The local game management association (Ringerike Viltneimnd) have produced a booklet about Nordre Tyrifjorden, which includes sections on all the five reserves with Ramsar status.

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Please select a value

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Birds	Implemented
Water quality	Proposed
Plant community	Implemented

The Hole and Ringerike branch of the Norwegian Ornithological Society (NOF) carry out annual monitoring of breeding and wintering waterbirds in Nordre Tyrifjorden, as well as recording of passage movements of pink-footed geese and great cormorants. Averøya Field Station is no longer in active use. See also RIS for individual sub-sites.
There are proposed management actions in order to remove invasive species.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Bane NOR & Statens Vegvesen. 2017. Fellesprosjektet Ringeriksbanen og E16 (FRE). Ringeriksbanen. Silingsrapport - potensielle areal for økologisk kompensasjon. (In Norwegian - Screening report - potential areas for ecological compensation in Norway)

Bane NOR & Statens Vegvesen. 2017. Fellesprosjektet Ringeriksbanen og E16 Høgkastet–Hønefoss. Statlig reguleringsplan med konsekvensutredning. Planprogram. (In Norwegian - Regulation plan for Ringeriksbanen and E16)

Direktoratet for naturforvaltning. 2012. Nasjonal plan for restaurering av våtmark - Utvalgelse av lokaliteter - høring. (In Norwegian - National plan for restoration of Wetland)

Fylkesmannen i Buskerud. 2016. Forvaltningsplan for Nordre Tyrifjorden og Storelva naturreservat - utkast. (In Norwegian - Management plan for Nordre Tyrifjorden and Storelva nature reserve - Draft)

Fylkesmannen i Buskerud. 1999. Forvaltningsplan for Averøya. (In Norwegian - Management plan for Averøya)

Fylkesmannen i Buskerud. 1997. Karlsrudtangen naturreservat i Ringerike kommune - Forvaltningsplan. Rapport nr. 5 1997. (In Norwegian - Management plan for Karlsrudtangen nature reserve)

Pritchard, D. 2015. Report of RAM No.79, Nordre Tyrifjord Wetland System, Norway.

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

<1 file(s) uploaded>

v. site management plan

<3 file(s) uploaded>

vi. other published literature

<4 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



The sub-site Juveren (Rådgivende Biologer AS, 31-08-2013)



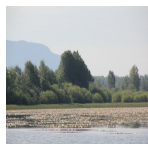
The sub-site Karlsrudtangen (Rådgivende Biologer AS, 24-07-2013)



Flood at the sub-site Lamyra (Ole Henrik Brekke, 24-05-2013)



Sandtangenøyene by the sub-site Averøya (Rådgivende Biologer AS, 24-07-2013)



The sub-site Synnøren (Rådgivende Biologer AS, 25-07-2013)

6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation