Designation Date: 24/07/85 Ramsar Site no. 305

Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

- 1. The RIS should be completed in accordance with the attached Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands. Compilers are strongly advised to read this guidance before filling in the RIS.
- 2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
- 3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

	1. Name and address of the compiler of this form: FOR OFFICE USE ONLY.
	Miljøfaglig Utredning AS commissioned by Norwegian DD MM YY
	Directorate for Nature Management, Tungasletta 2, 7485
	Trondheim
	Tlf +47 73580500
	Fax: +47 73580501 Designation date Site Reference Number
	E-mail: postmottak@dirnat.no
_	
	2. Date this sheet was completed/updated:
	March 2012
	3. Country:
	Norway
	4. Name of the Ramsar site:
	Øra
	(International No. 305, National No. 2)
	5. Designation of new Ramsar site or update of existing site:
	This RIS is for (tick one box only):
	a) Designation of a new Ramsar site \square ; or
	b) Updated information on an existing Ramsar site 🗹
	6. For RIS updates only, changes to the site since its designation or earlier update:
	a) Site boundary and area
	.,,
	The Ramsar site boundary and site area are unchanged: □
	or

If the site boundary has changed: i) the boundary has been delineated more accurately i) the boundary has been extended ☑; or iii) the boundary has been restricted** □								
and/or								
If the site area has changed: i) the area has been measured more accurately ii) the area has been extended ☑; or iii) the area has been reduced** □								
** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.								
b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:								
A minor oil spill accident winter 2006, but no major ecological changes known the last years								
7. Map of site: Refer to Annex III of the Explanatory Note and Guidelines, for detailed guidance on provision of suitable maps, including digital maps.								
a) A map of the site, with clearly delineated boundaries, is included as: i) a hard copy (required for inclusion of site in the Ramsar List): ☑;								
ii) an electronic format (e.g. a JPEG or ArcView image) \(\overline{\sigma}\) ;								
iii) a GIS file providing geo-referenced site boundary vectors and attribute tables \Box ;								
b) Describe briefly the type of boundary delineation applied: e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.								
The border of the Ramsar site is equal with the border of Øra Nature Reserve								
8. Geographical coordinates (latitude/longitude):								
59° 10" N 11° 00' E								
9. General location: Include in which part of the country and which large administrative region(s), and the location of the nearest large town.								
Øra is situated at the mouth of the river Glomma, near the town of Fredrikstad in Østfold county.								
10. Elevation: (average and/or max. & min.) 11. Area: (in hectares)								
0 m.a.s.l. 1676 ha								

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Øra is a shallow area of brackish water with numerous small islands and skerries surrounded by fluvial sediments. The sediments are deposited where Norway's largest river, Glomma, flows into the sea.

Glomma drains an area with a diverse geology and climate and the southern part of the river's catchment area is dominated by soils rich in clay. In periods with large amounts of water in the river a large amount of eroded material carried by Glomma runs out into the sea at Øra and a fan of muddy water is noticeable some distance from land. Freshwater and saltwater meet within the reserve and brackish conditions influence the flora and fauna of the area. Where the water is less than 0.5 m deep the vegetation is dominated by *Phragmites australis, Schoenoplectus tabernaemontani* and *Schoenoplectus maritimus* which often form colonies. *Potamogeton perfoliatus* was the most important water plant, in particular as winter food for whooper swans, although this pondweed has declines in recent years. *Zostera marina* and *Fucus vesiculosus* are found in the outer parts of the reserve.

The area is an important site for breeding, staging, wintering and moulting waterbirds. The most abundant nesting species at present is great cormorant of the subspecies *sinensis*, with 992 pairs in 2004. Øra was also the first site where both mute swan *Cygnus olor* (1937) and Caspian tern *Sterna caspia* were known to have bred in Norway. Øra is also an important site for moulting wildfowl. A total of around 250 bird species are recorded in the area, around 90 of which are known to breed.

Both freshwater and saltwater fish species are found. In general saltwater species dominate in winter, and freshwater species in summer.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the Explanatory Notes and Guidelines for the Criteria and guidelines for their application (adopted by Resolution VII.11).



14. Justification for the application of each Criterion listed in 13. above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

- Criterion 1. Norway's largest estuary with large brackish areas and large areas of *Phragmites australis*, *Schoenoplectus tabernaemontani* and *Schoenoplectus maritimus*, as well as islands and beaches with salt marsh. Formed by Norway's largest river (Glomma) which drains 13% of the total area of the country. Despite the closeness to a large major town and important industrial areas large areas are barely exploited. Large variations in water levels, as well as tidal currents and the effects of the wind pushing saltwater from the south and south-west, result in large variations in water salinity.
- Criterion 2. The area is important during migration for national red-listed species such as Shoveler Anas clypeata (VU) and Greater Scaup Aythya marila (VU). Important for wintering Water Rail Rallus aquaticus (VU). Nationally Red-listed vascular plants found in the area include Radiola linoides (EN), Centaurium pulchellum (VU), Centaurium littorale (EN), Carex hartmanii (VU), Stellaria palustris (EN), Gentianella uliginosa (EN), Potamogeton pusillus (EN), Rumex hydrolapathum (VU), Odontites vernus ssp. litoralis (VU) and Ophioglossum vulgatum (VU) It is referred to the National Red List 2010. See also points 21 and 22.
- Criterion 4. The area is an important site for breeding, staging, wintering and moulting waterbirds. Øra includes several small islands and skerries and is surrounded by rich littoral areas, such that in sum Øra is an area rich in a number of species. During spring and autumn migration hundreds of waterbirds gather and the area is important as a foraging site, such as for over 1000 common Goldeneye *Bucephela clangula* in spring. Also species attracted to the saltmarshes and meadows may be seen in large numbers e.g. counts of over 5000 Sky Lark *Alauda arvensis* and 20000 Common Starling *Sturnus vulgaris*. The reedbeds are also important roost sites for migrating Barn Swallow *Hirundo rustica* with flocks of up to 2000 individuals being recorded. Common Starlings also roost in the reedbeds. Breeding population of Great

Cormorant *Phalacrocorax carbo sinensis* which numbers almost 1000 pairs. Together with Nordre Øyeren, Dokkadeltaet by Randsfjorden, Lågendeltaet and Åkersvika by Mjøsa, Øra is a major part of an important system of wetlands used by migratory birds inland in southern Norway. See point 22 for more details.

Criterion 7. Øra have one of the most species rich fish communities in Norway with 41 known species, including 18 of the 27 freshwater species known in Norway. The vegetation in the brackish areas is relatively species-poor as few can cope with large variations in salinity. See also point 22 for more details.

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

- 1. Boreal
- 2. Boreonemoral vegetation zone, slightly oceanic section (Bn-O1). The boundary of the marked oceanic section (Bn-O2) lies immediately east of the area.

b) biogeographic regionalisation scheme (include reference citation):

- 1. EU Habitat directive 92/43/EEC
- 2. 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).

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Geology	Impressive alluvial deposits (typical delta deposits with more or less fine-grained				
	material out in the delta) over Precambrian rocks, chiefly granite.				
Geomorphology	A wide estuary with several square kilometres of marsh and shallow waters with				
	an uneven surface and gulleys/holes formed by currents and tides.				
Substrate/soil type	Marsh and shallow water (estuary) with an accumulation if clay, silt, sand and				
	organic materials.				
Water quality	Water quality in the river is affected by the fact that Glomma flows through areas				
	of marine clay deposits, with problems of erosion during flood periods. Coupled				
	with the fact that many areas farther upriver which formerly acted as sediment				
	traps have now been cultivated, water clarity has been reduced.				
Water depth/	The brackish delta is very shallow, with a few deeper galleys.				
fluctuations					
Climate	Coastal climate. Winds in winter are mainly northerly, with predominately southwesterly winds in summer. Average temperatures in the period 1961-1990 were –				
	3,7°C in January and 16,0°C in July. Annual precipitation in the same period was				
	880 mm.				

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

Øra has a catchment area of around 41 770 km² in eastern Norway. The catchment stretches as far north as the county of Sør-Trøndelag. The catchment area stretches form the boreonemoral vegetation zone,

via the southern boreal, middle boreal and northern boreal zones to the alpine zone. Coniferous woodland covers most of this area, although in the northern parts there are areas of upland birch woodland, mires and bare mountain. Along the lower reaches of Glomma there are large areas of farmland, towns and other settlements. The catchment is within the Caledonian thrust-sheet zone and this has resulted in a great geological variation. Moraine material which is thick in places covers most of the catchment area, and there are impressive alluvial deposits along the valleys, in particular in the lower parts. There are also areas of moraine soils and peaty soils in areas of mires. The climate in the catchment area is generally continental.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Transportation of sediments from Glomma (Norway's longest river) are responsible for the formation of the estuary. The area acts as a sedimentation trap for muddy water from Glomma, although this function has been reduced following the filling in of the area at Øratangen.

19. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the Explanatory Notes & Guidelines.

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

5 • 6 • 7 • 8 •

A, F,G,D,E

20. General ecological features:

Human-made: 1 • 2 • 3 •

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the

The area is within the boreonemoral zone, and the aquatic habitats range from shallow eutrophic vegetation communities with beds of reed and club-rush in areas with low salinity, to areas of sea water dominated by communities of bladder seaweed. *Potamogeton perfoliatus* was one of the characteristic species but has declined dramatically. The islands are either wooded or composed of saltmarshes and pastures as the result of many years of farming. The invertebrate fauna is relatively species-poor, as is usual in brackish areas, yet has remained stable in recent decades. The fish fauna is affected by the brackish conditions, and both freshwater and saltwater species are present. The area has a rich birdlife, and about 250 species are recorded, of which around 90 species breed.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

Potamogeton perfoliatus was one of the characteristic species for Øra, but has declined dramatically in recent decades. As a result, Øra's importance for wintering Whooper Swan has declined. Several nationally red-

listed plants have been recorded in the area, many of these are small species which are easily outcompeted by other species, and others have only small populations or are declining. Se point 14 criterion 2. Some of these species have not been found in the reserve for a number of years, mainly due to reduced water clarity.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.

Fish:

None of the 41 species of fish recorded can be classified as threatened, although with 23 freshwater species and 2 saltwater species Øra is one of the most species-rich sites in the country. Dominant saltwater species are Saithe Pollachius (Gadus) virens, Herring Clupea harengus and Whiting Merlangius merlangus (Gadus merlangus), and also common are Cod Gadus morhua, Flounder Platichthys (Pleuronectes) flesus, Plaice Pleuronectes platessa and Sprat Sprattus sprattus. As for freshwater species whitefish Coregonus lavaretus dominates whereas other common species include Roach Rutilus rutilus, Dace Leuciscus leuciscus, Orfe Leuciscus idus, Bream Abramis brama, Perch Perca fluviatilis and Pikeperch Stizostedion lucioperca.

Birds:

Øra is known in particular for its birdlife. Depending upon ice conditions, varying numbers of waterbirds spend the winter. The most common are Mute Swan Cygnus olor, Goosander Merganser merganser, Common Goldeneye Bucephala clangula, Mallard Anas platyrhynchos, Tufted Duck Aythya fuligula and Canada Goose Branta canadensis. Unusual winter guests include Bewick's Swan Cygnus colombianus and Red-necked Grebe Podiceps grisegena. The reserve is important during passage periods in spring and autumn. The site is strategically placed along a major migration route in southern Norway. Large numbers of wildfowl and waders gather on migration, most common are Greylag Goose Anser anser, Mallard Anas platyrhynchos, Lapwing Vanellus, Common Shelduck Tadorna tadorna, Starling Sturnus vulgaris, Eurasian Curlew Numenius arquata among others.. Mute Swan, Mallard, Common Teal Anas crecca, Common Shelduck Tadorna tadorna, Northern Pintail Anas acuta, Northern Shoveler Anas clypeata, Red-breasted Merganser Mergus serrator and Common Eider Somateria molissima are confirmed as breeding on the reserve. Also Graylag Goose Anser anser, several rail species, and many wader species nest at Øra. Norway's first breeding record of Caspian tern Sterna caspia was from Øra, and Marsh Harrier is almost an annual breeder. Osprey Pandion haliaetus is regularly seen in summer. Breeding passerines include the flava race Yellow Wagtail Motacilla flava, Sedge Warbler Acrocephalus schoenobaenus, Reed Warbler Acrocephalus scirpaceus, Meadow Pipit Anthus pratensis and Reed Bunting Emberiza schoeniclus. Øra is also an important moulting site for wildfowl. A total of 250 bird species are recorded in the area. Maximum counts for many species are rather low, although this may partly be explained by the fact that counts are not carried out systematically.

Invertebrates:

The benthic fauna has, with few exceptions, remained unchanged since the 1970's and is dominated by King Rag-worm *Nereis diversicolor* and Sandhopper *Corophium volutator*. Rare species include *Alkmaria romijni* (VU) which has not been recorded elsewhere in Norway. Average density of benthic organisms is 3200 per m².

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

The saltmarshes and natural meadows in the area have formerly been grazed and cut. Overgrowing has resulted in a reduction in breeding birds preferring managed meadows and open landscapes. The

management authorities have therefore restarted management by cutting and grazing in recent years, in order to recreate the hay meadows and to prevent further overgrowing. A bird observation tower has been erected in the north.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box \square and describe this importance under one or more of the following categories:

- i) sites which provide 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) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where 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:

24. Land tenure/ownership:

(a) within the Ramsar site:

Mainly municipal, some private and state.

(b) in the surrounding area:

Partly private, partly municipal.

25. Current land (including water) use:

(a) within the Ramsar site:

The largest island – Hestholmen – and part of the shoreline nearby consists of saltmarsh and grazing land. Here some management in the form of grazing and cutting takes place. The area is used for recreational purposes including birdwatching. Fishing with potentially damaging equipment such as nets is not permitted within the reserve. Hunting is forbidden within the reserve.

(b) in the surroundings/catchment:

The area is bordered in the north and north-west by industrial areas and a waste disposal site. To the north-east and east are low wooded hills, as well as grazed and cultivated land. To the south and south-west there is sea. Filling in of shallow waters for future industrial purposes takes place in the inner part of the bay at Gansrødbukta, thus reducing the amount of shallow water which naturally makes up the estuary.

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

(a) within the Ramsar site:

Cessation of hay-cutting, grazing and tree-felling has resulted in an increase in overgrowing of nearby areas and islands within the estuary, with the result that some species of plants and birds have become rarer or even disappeared. Measures to reverse this trend have been implemented.

(b) in the surrounding area:

Extensive filling of the area between Glomma and Gansrødbukta in the inner part of Øra has altered the watercourse, and resulted in higher salinity and with consequences for *Potamogeton perfoliatus*, which is the

most important food plant for ducks and swans in the area. A channel has been created to lead fresh water into the northern part of Øra. This has had positive effects on the population of *Potamogeton perfoliatus*. Between the end of the 1960's to the 1980's many of the ravines were flattened, and farmland was mainly used for corn production. This resulted in an increase in eroded material and nutrient salts in the area, and consequently a reduction in water clarity, which may also have proved negative for *Potamogeton perfoliatus*.

27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

The area was designated as a nature reserve on 28th September 1979. The County Governor's office in Østfold is the responsible management body.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ☑ x;	Ib □;	II □;	III 🗖	: IV 🗖:	: V □:	VI 🗆
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- **c)** Does an officially approved management plan exist; and is it being implemented?: A <u>draft</u> plan exists
- d) Describe any other current management practices:

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

The management authority is about to finalise a revised management plan for the site. A minor expansion of the reserve is being considered, mainly to encompass more saltmarsh.

29. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

In connection with establishment of the nature reserve, a number of extensive scientific studies were carried out. Øra has also been used for smaller scale studies, and a great number of publications related to the area exist. The management plan currently being prepared recommends that a thorough ecological study be carried out, and that previous studies are followed up.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

A bird observation tower have been built on the outer part of Øratangen beside an artificial channel. An information brochure has been produced.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

The area is used by local residents, mainly for birdwatching, as well as some boating, rod-fishing and other recreational activities.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Norwegian Directorate for Nature Management (DN)

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

The site is managed by the County Governor of Østfold, which is under the instruction of DN. Address: County Governor of Østfold, P.b. 325, 1502 Moss. Phone +47 69 24 70 00. E-mail: postmottak@fmos.no

34. Bibliographical references:

scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

"Øraundersøkelsene" 1973-1977. 7 rapporter av Pethon, P., Hovde, H.R. & Gjelland, A. Zoologisk Museum, Norsk inst. for vannforskning og Universitetet i Oslo. (In English – Research at Øra (7 reports)).

Båtvik, J.I.I. mfl. 2001. Naturfaglige undersøkelser i Øra naturreservat 2001. Fylkesmannen i Østfold, miljøvernavd. rapp. 4-2001: (In English – Environmental studies at Øra nature reserve).

Båtvik, J.I.I. mfl. 2005. Naturfaglige undersøkelser i Øra naturreservat 2004. Fylkesmannen i Østfold, miljøvernavd. rapp. 3-2005: 1-58. (In English – Environmental studies at Øra nature reserve).

Krohn, O. (red.) 1990. Fuglelivet i Øra-området 1985-88. Østfold-Natur 29: 1-42. (In Norwegian – On Birdlife of Øra).

Viker, M & Bosy, R.G. (red.) 1986. Fuglelivet i Øra-området - Med en fullstendig litteraturoversikt. Østfold-Natur nr. 25:1-143. (In English – On the Birdlife of Øra, including literature list).

Viker, M. & Fredriksen, Å.S. 1995. Ornitologiske registreringer i Øraområdet 1989-1992. Fylkesmannen i Østfold, miljøvernavd. rapp. 10-1995: 1-64 (In English – On Bird observations at Øra 1989-1992).

Viker, M. 2002. Ornitologiske registreringer i Øraområdet 1993-1997. Fylkesmannen i Østfold, miljøvernavd. rapp. 4-2002: 1-67. (In English – On Bird observations at Øra 1993-1997).

Fylkesmannen i Østfold (in prep.). Forvaltningsplan for Øra naturreservat. Fylkesmannen i Østfold, miljøvernavd. (In English – Management plan for Øra nature reserve).

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