

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:

Miljøfaglig Utredning AS commissioned by Norwegian
Directorate for Nature Management, Tungasletta 2, 7485
Trondheim
Tlf +47 73580500
Fax: +47 73580501
E-mail: postmottak@dirnat.no

FOR OFFICE USE ONLY.

DD MM YY

--	--	--

Designation date

--	--	--	--	--	--

Site Reference Number

2. Date this sheet was completed/updated:

March 2012
~~March 2011~~

3. Country:

Norway

4. Name of the Ramsar site:

Tufsingdeltaet
(International No. 1199, National No. 37)

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 ; 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 ; or
- 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 ; or
- 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:

Ecological changes have not been reported.

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)
- iii) a GIS file providing geo-referenced site boundary vectors and attribute tables

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 Ramsar site border is similar the border of Tufsingdeltaet Nature Reserve

8. Geographical coordinates (latitude/longitude):

62° 12'N 11° 49'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.

Tuftingsdelta is situated in Os municipality in the county of Hedmark in south-east Norway. The reserve is in the north-western part of Femunden, which at 203 km² is Norway's third largest lake. The nearest town is Innbygda with around 3000 inhabitants, 22 km to the west.

10. Elevation: (average and/or max. & min.)

662-670 m.a.s.l.

11. Area: (in hectares)

895 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.

The river Tufsinga has created a delta in Femunden with a number of small islands which are covered in mire and willow scrub *Salix* with belts of sedge *Carex* and surrounding shallow waters. There is a special development of the mires with overgrowing of pools in the outer part of the delta. Land areas along the slow flowing river are dominated by large, dry and open mires. On these mires there are several dystrophic pools and ponds. The aquatic vegetation is relatively rich- The river banks are surrounded by dense birch *Betula* woodland.

The reserve has a wide diversity of wetland species (bird species), in particular considering its proximity to mountainous areas (49 wetland species are recorded). The wide variation in nature types mean that main groups of birds are represented. A number of waterbirds breed, yet others stage and wait for nesting sites on higher ground to become free of snow and ice. The most important parts for birds are the shallow waters and the pools on either side of where Tufsinga flows into Femunden. The vegetation in these areas is inundated by water during spring and is used by feeding ducks.

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).

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

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. A large and varied delta with intact rivers flowing into the site is unusual in upland areas of southern Norway, In the Norwegian red list on habitat (2011) this kind of wetland is considered as vulnerable (VU). The delta is considered as a “birds foot delta”

Criterion 2. . Greater Scaup *Aythya marila* (VU) uses the site during migration. Ruff (VU) *Philomachus pugnax* uses the site during breeding season and for lekking in the spring. Otter *Lutra lutra* (VU) is recorded in the reserve. We also find *Carex laxa* (VU) by the river mouth. It is referred to the National Red List 2010.

Criterion 3. Tufsingdelta has a unique waterbird fauna which includes both northern/eastern upland species and southern more warm-loving species. The latter is rare in an area close to the mountains such as Femunden. See also point 22.

Criterion 4 The area is rich in breeding and staging species considering its close proximity to upland areas. This includes in particular ducks, waders and gulls all of which breed as well as other bird groups such as divers, swans, geese and grebes mainly on passage. See 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. Alpine
2. Northern boreal vegetation zone, transitional section (Nb-OC).

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	The area lies in a sparagmite formation, and loose matter which enters the delta has its origin there.
Geomorphology	Tufsingdelta is of geomorphological interest. The river meander flows into the outer part of the delta. A long, narrow tongue of sand has been formed 2 km out into the lake Femunden. There are several low islands composed of alluvial sediments in the bay, which are now largely covered in mire or have become boggy. This is perhaps the most characteristic and well developed "birds-foot delta" in Norway.
Substrate / Soil type	Mainly peaty soil in the reserve, although there are mineral soils on the small solid ridges in the inner parts, as well as along the river banks.
Water quality	No data is available on water quality.
Water depth / fluctuations	The lake Femunden is regulated by a dam at Gløten. Water levels are lowest in late winter and spring, but are normally high during summer. Most of the delta is inundated during spring floods. During periods with little water transport, levels can sometimes be low in autumn. Large areas of mud are exposed when water levels are low.
Climate	The climate is slightly continental with relatively little precipitation (500-700 mm p.a.) and relatively warm, but short, summers and extremely cold winters.

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).

The catchment area includes woodland and farmland in the valley Tufsingdalen and along the lakes Siksjøen and Korssjøene, as well as neighbouring mountain areas. The catchment area is mainly made up of hard and nutrient poor basement granites, in addition to areas of amphibolite in the western and upper parts.

Moraine ridges are a dominant feature of the landscape around the delta. The reserve is also surrounded by dry pinewoods and open water towards Femunden. Forestry is an important source of income, including the area adjacent to the reserve.

18. Hydrological values:

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

The transport of sediment the Tufsinga river is responsible for the building up of the delta in Femunden. The area functions as a sediment trap and is important for fixing of nutrients (in particular those containing phosphorus and nitrogen). Together with other areas of mires in the watershed the mires in the delta help to reduce flooding.

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*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U • Va •
Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

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.

L, U, O, Xf, Tp, M, Ts

20. General ecological features:

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

Tufsingdelta is situated in the boundary between areas of pinewood *Pinus sylverstris* and more alpine areas with dwarf birch *Betula nana*. The important nature types in the delta are shallow bays with rich vegetation and pools. There is a mixture of large, open mires and small knolls with pine trees. Birch woodland grows along the river banks, and sections of wet woodland dominated by birch and pine are also common.

The reserve has a varied vegetation of sump and mire. The large mires are mostly flat with various forms of string-mires with undemanding vegetation. Along the river towards the river mouth willow scrub dominates. Species such as *Salix hastata* and *Carex aquatilis* grow here.

The shallow waters are dominated by large sedge bogs with species such as *Carex rostrata*, *Carex aquatilis* and *Equisetum fluviatile*. The aquatic vegetation is also relatively rich.

The area is rich in breeding and staging species considering its close proximity to upland areas. This includes in particular ducks, waders and gulls all of which breed as well as other bird groups such as divers, swans, geese and grebes mainly on passage.

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.*

Interesting botanical find is of *Carex laxa* by the river mouth. This species is listed as rare (VU) in the National Red List 2010 and has a northern distribution in Norway. There is also one registration of *Nitella flexilis* (NT).

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.*

Mammals:

Casual observations are made of wandering Otter *Lutra lutra* (VU). Muskoxy *Ovibos moscatus* is recorded once in the reserve.

Birds:

Several red-listed species breed or have bred on the reserve, in addition to other threatened species which utilise the area during spring passage. Osprey *Pandion haliaetus* breed with one pair in the delta. Common Crane *Grus grus* previously bred in the area (1-2 pairs). Lesser Spotted Woodpecker *Dendrocopos minor* has

nested as has probably also Wryneck *Jynx torquilla*. More common species include Mallard *Anas platyrhynchos* (5-10 pairs), Tufted Duck *Aythya fuligula* (10-20 pairs), Eurasian Wigeon *Anas penelope* (2-5 pairs), Common Goldeneye *Bucephala clangula* (2-4 pairs), Greenshank *Tringa nebularia* (5 pairs), Common Snipe *Gallinago gallinago* (in 1972 there were registered 25-30 lekking birds), Ruff *Philomachus pugnax* (19 individuals registered in 1997) and Wood Sandpiper *Tringa glareola* (10-15 pairs). Shy species including Black-throated Diver *Gavia arctica*, Whooper Swan *Cygnus cygnus* and Northern Pintail *Anas acuta* have been recorded in suitable biotopes until canoeing begins in the area in June/July. Up to 1997 a total of 12 duck species and 16 waders have been observed. Of biogeographic interest are records of southern/eastern lowland species such as Marsh Harrier *Circus aeruginosus* (VU) and Little Gull *Larus minutes*. It is referred to the National Red List 2010.

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:

Canoeing is an important recreational activity in Femund and many paddle along the delta in June/July. Berry picking occurs within the reserve (in particular for cloudberry *Rubus chamaemorus*) and there is also hunting and fishing. The rich plant production gave rise to the extensive hay cutting in the delta from the 1700's until after the 2nd world war.

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 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:
- iii) 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: Private
- (b) in the surrounding area: Private

25. Current land (including water) use:

(a) within the Ramsar site:

Hobby fishing and hunting occur in the area. Tufsinga is rich in fish and there is a long tradition of fishing for whitefish *Coregonus lavaretus* in the river. Livestock graze the area, mainly sheep and cattle.

(b) in the surroundings/catchment:

Fishing for freshwater fish takes place in Femunden, and canoe hire is an important source of income along the lake. Forestry is important in the region, whereas farming and livestock management are important in the valley of Tufsingdalen. Dwelling places are scattered, and there are no major settlements within the catchment area.

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:

The cessation of hay cutting after the second world war has led to overgrowing in the mires, in particularly the outer parts which were most extensively used. Grazing intensity from livestock has little or no effect on the vegetation of the area.

(b) in the surrounding area:

None are known.

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.

Tufsingdeltaet was designated as a nature reserve on 18th December 1981. The Ramsar site border is the same as the border of the nature reserve.

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

Ia Ib ; II ; III ; IV ; V ; VI

c) Does an officially approved management plan exist; and is it being implemented?:

No

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.

A management plan is being developed by the management authority.

29. Current scientific research and facilities:

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

None are known.

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.

None.

31. Current recreation and tourism:

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

The area is mainly used for canoeing, as well as for hunting and for fishing, in particular for whitefish in Tufsinga.

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), Tungasletta 2, 7485 Trondheim

Ph +47 73580500

Fax +47 73580501

Email: postmottak@dirnat.no

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 Hedmark, which is under the instruction of DN.

Address: County Governor of Hedmark, Postboks 4034, N-2306 Hamar, Norway. Phone +47 62551000.

E-mail: postmottak@fmhe.no

34. Bibliographical references:

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

Limnology / hydrobiology:

Braanaas, T. 1971. Hydrobiologiske undersøkelser i Tufsingdeltaet sommeren 1971. NIVA-rapport. (In Norwegian - on Hydrobiology of the Tufsingdelta).

Norsk Institutt for Vannforskning 1973. Vern av naturlig næringsrike innsjøer i Norge. Økologiske undersøkelser av innsjøer og dammer i Femund-området 1972. NIVA-rapport O-70/88 (In Norwegian – description of naturally eutrophic lakes).

Botanical and management plans:

Elven, R. 1974. Botaniske undersøkelser i Tufsingdeltaet. Universitet i Oslo, Botanisk Institutt, Bot. nr. 90. (In Norwegian – on Botanical studies in the Tufsingdelta).

Wolden, T. 1976. Botanisk rapport over Tufsingdeltaet og Floene i Os kommune, Hedmark. Upubl. rapport. 42 pp. (In Norwegian – on Botany of Tufsingdelta and Floene).

Birds:

Bekken, J. 1987. Ornitologiske registreringer i 11 våtmarksreservater 1985-86. Fylkesmannen i Hedmark, Miljøvernavd. Rapport nr. 13: 1-43. (In Norwegian – bird observations in 11 wetland reserves in Hedmark county)

Bekken, J. 2001. Fugler og pattedyr i 18 våtmarksreservater i Hedmark. Fylkesmannen i Hedmark, Miljøvernavd. Rapport nr. 8/2001: 1-122. (In Norwegian – bird observations in 18 wetland reserves in Hedmark county)

Geology:

Sollid, J. L. & Kristiansen, K. 1982. Hedmark fylke. Kvartærgeologisk verneverdige områder.

Universitetet i Oslo, Geografisk institutt. Notat, 65 pp. (In Norwegian – on important geological sites).