Designation date: 09/07/74 Ramsar Site no. 13.

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:

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DD MM YY

Designation date | Site Reference Number

2. Date this sheet was completed/updated:

January 2012

~~October 2010~~

3. Country:

Norway

4. Name of the Ramsar site:

Åkersvika
(International No. 13, National No. 1)

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:

As a Ramsar site close to a city and major communication infrastructure (roads, railway), as well as nearby agricultural activities, Åkersvika is almost under continuously pressure.
The amount of nutrients running into the reserve via the rivers has been reduced due to better control of agricultural drainage in the last 20-30 years. This has resulted in a reduction of available biomass in the form of food species for waders being reduced by over 50%. Standardised counts of passage water birds since the early 1970's have revealed that a number of species have declined dramatically in numbers during migration periods in the last 10-20 years. This applies to waders in particular. At the same time a reduction in the amount of pollutants from industry running into the reserve has had a positive effect on the ecosystem. (For more details see also points 12, 20 and 26.)
However, no other major ecological changes have been identified the last years.

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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 the same as for the Åkersvika Nature Reserve.

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8. Geographical coordinates (latitude/longitude):

60° 48'N 11° 07'E

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9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

The reserve is on the east side of Norway's largest lake (Mjøsa) within the town of Hamar. The area lies in both Hamar and Stange municipalities. Hamar is the administrative centre in Hedmark county and has a population of 27500 people.

10. Elevation: (average and/or max. & min.)
119-130 m.a.s.l.

11. Area: (in hectares)
424 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.

Åkersvika includes the deltas of the rivers Svartelva and Flakstadelva and the adjacent shallow basin which form the rivers joint delta with the outlet into Mjøsa. Causeways built for roads and railway seal Åkersvika from Mjøsa itself. The two rivers drain an almost continuous layer of calcium rich morraine deposits with a high content of fine particles, which are the material forming the delta. Along the lower reaches the rivers meander over fine grained alluvial deposits. A number of banks and small islands have built up in the delta and between these the river has created many small channels and bays. During periods of low water in spring, and occasionally also in autumn, large areas of sandbank and mudbank are exposed. Under normal summer water levels about 2/3 of the reserve is open water.

The reserve is one of the most important staging sites for wetland birds following inland migration routes in Norway, and was the first area in Norway to be designated as a Ramsar site (in 1974). A total of 218 bird species are recorded in the area, which is a very high total for an inland site in Norway. Large numbers of ducks and waders rest in Åkersvika, both in spring and in autumn. Numbers are normally highest during spring passage, but can also be high if there is much exposed mud in autumn. Over 1000 duck are regular during both spring and autumn, whereas numbers of waders are now fewer; there were higher numbers of several wader species in the period 1960's to the 1980's. Large numbers of Pink-footed Geese *Anser brachyrhynchus* have rested in recent years during autumn. Standardised counts of passage water birds since the early 1970's have revealed that a number of species have declined dramatically in numbers during migration periods in the last 10-20 years. This applies to waders in particular. The reason for the decline is that the biomass of benthic organisms has been reduced, as a result of reduced transport of nutrients along the two rivers that make up the delta. The area is also of some importance for nesting waterfowl, although large variations on water levels mean that many nesting attempts fail.

Åkersvika has also interesting water and bog vegetation and many rare and red-listed species occur, both among higher plants and mosses. In particular the vegetation on the mudbanks and the channels bogs that are species rich and special. Here we also find threatened vegetation types such as rich freshwater shoreline vegetation and rich aquatic vegetation.

A total of 15 of Mjøsa's 19 species of fish use Åkersvika at various times. There are occasional records of *Astacus astacus*. The Mjøsa form of Trout *Salmo trutta,* the Mjøsa form of grayling and Lamprey *Lampetra fluviatilis/planeri* use Flakstadelva, Svartelva and Finsahlbekken as reproduction area and pass Åkersvika both as spawning fish and as young fish.

The bat species Daubenton's bat *Myotis daubentonii* and Northern Bat *Eptisicus nilssonii* are common in the area, whereas Soprano Pipistrelle *Pipistrellus pygmaeus* is recorded at nearby Domkirkodden and few other sites in Hedmark.

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** • 9

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. Åkersvika is one of the largest and best developed freshwater deltas in Norway, where the rivers running into the delta are unregulated. The delta is varied with stretches of meandering river, islands, sandbanks, mudbanks, channels, old rivercourses, pools and meadows beside freshwater.

Criterion 2. The red-list species (National Red-List 2010) Spotted Crake *Porzana porzana* (EN) may previously have bred. The area is however more important as a staging site for nationally red-listed species such Greater Scaup *Aythya marila* (VU). In addition the reserve supports many red-listed plant species and mosses associated with waterside meadows and shallow waters. There are large areas of threatened vegetation types along the shoreline such as rich freshwater shore vegetation and rich aquatic vegetation. See also point 21 and 22.

Criterion 3. Åkersvika has well developed annual vegetation on exposed banks *(Nanocyperetalia)* and underwater meadows which are typical for river deltas under the marine boundary in southern Norway, as well as aquatic and bog vegetation associated with channels and old rivercourses. A number of rare and threatened species are found in the vegetation communities and it is important to preserve these and their habitats. The wetland fauna of Åkersvika includes both threatened species (see e.g. justification of criterion 2) as well as species which are typical/representative for the biogeographical region like Northern Lapwing *Vanellus vanellus (NT)*, Common Moorhen *Gallinula chloropus*, Whooper Swan *Cygnus Cygnus* (See also point 22).

Criterion 4. The most important function for Åkersvika is as a staging site for wetland birds both during spring and autumn. Ducks are most numerous, but also some waders occur in good numbers. For more information see point 22.

Criterion 6: In autumn 2005 up to 1200 Pink-footed Goose (*Anser brachyrhynchus*) were recorded in the area (1% of the Svalbard population is 430 birds according to Waterbird Population Estimates 4rd Ed. 2006), although previous maximum have been around 200 individuals. There is a trend towards increasing numbers of Pink-footed Goose in recent years, and numbers between 500-1000 is seen yearly (12.4.2007 – 700 ind, 14.10.2008 – 520 ind, 4.10.2009 – 1100 ind, 15.4.2010 – 900 ind. according to artsdatabanken.no). The highest numbers occurs in autumn.

Criterion 8: Sixteen species of fish is registered in Åkersvika, this is considered to be a high number of species in fresh water in Norway. Trout *Salmo trutta*, Greyling *Thymallus thymallus* and Lamprey *Lampetra fluviatilis/planeri* uses the nearby rivers as reproduction area and pass Åkersvika both as spawning fish and as young fish. Pike *Esox lucius,* Perch *Perca fluviatilis*, Ruffe *Gymnocephalus cernuus*, Ide *Leuciscus idus*, Common Roach *Rutilus rutilus*, *Freshwater Bream Abramis brama,* Common Bleak *Alburnus alburnus,* Common Minnow *Phoxinus phoxinus* Alpine Bullhead *Cottus poecilopus*, Ninepines Stickleback *Pungitius pungitius* uses the Åkersvika and nearby rivers both as spawning area and for young fish. Common Whitefish *Coregonus lavaretus* and Burbot *Lota lota* uses Åkersvika for feeding. See also point 22.

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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. Boreonemoral vegetation zone, transitional section (Bn-OC).
2. Boreal

b) biogeographic regionalisation scheme (include reference citation):

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

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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	Under the alluvial deposits and morraine material the bedrock is made up of limestone and schist from the Ordovician and Cambrian periods. These are locally exposed in the outer parts of the delta. Loose matter is alluvial, dominated by silt. Sparagmite and quartz dominated morraines are also common, and locally there are morraines dominated by Cambrosilurian material.
Geomorphology	The two rivers form a classic delta into the lake Mjøsa. The outflow form the Svartelva river is the main delta within the wetland, whereas the outflow from the Flakstadelva river lies north of Åkersvika itself and runs into the area via a small river channel. The area is rich in formations associated with a classic delta.
Substrate / Soil type	The delta is built up of fine-grained material, dominated by silt and fine sand, which has been transported by the rivers. The mud banks have increasingly become transformed to sand and gravel banks after transport of nutrients from housing areas and agriculture has been reduced. Along the shore there are large areas of boggy ground with an accumulation of organic material.
Water quality	Pollution from nutrient salts and organic matter directly into Åkersvika has been reduced in recent decades. This is due to better sewage treatment and better monitoring of agricultural run-off as well as the closure of local sawmills. The area is affected by heavy metals, oil products and chlorinated hydrocarbons.
Water depth / fluctuations	Mjøsa has, since 1965, a regulating level of 3.61 metres. Water levels are lowest late in winter and early spring, although they are normally high during summer and autumn. During periods of little water transport then levels may also be low during autumn. Large areas of mudflats are exposed during low water levels.
Climate	The climate is slightly continental with relatively little precipitation (500 mm p.a.), relatively warm summers and cold winters (average annual temperature is + 4.1^0 C).

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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 two rivers Svartelva and Flakstadelva drain the wide areas of farmland east of lake Mjøsa. These rivers are running through rich soils on top of impressive moraines. The farmland is broken up by small areas of coniferous woodland and deciduous woodland along the watercourse as well as small settlements. Much of the town of Hamar is situated within the catchment of Flakstadelva and/or into the reserve itself. In the extreme east there are vast areas of coniferous forest on basement rock, where the morraine layer is thinner. The climate is similar to the reserve itself, but with slightly higher annual precipitation and lower winter temperatures in the eastern part.

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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 Flakstadelva and Svartelva are responsible for the making of the delta at Åkersvika. 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). Due to a large watershed the river plays an important role in reducing flooding, although extensive ditching along the low lying areas allows water to flow faster into the main rivers which results in frequent flooding, especially during snow melt in spring. The remaining, unexploited marsh and wetland areas are therefore important to reduce flooding elsewhere along the watercourse. Vegetation within the reserve is important for stabilising the shoreline of Åkersvika.

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.

O, L, M, Xf, Tp, 4, Ts, U

20. General ecological features:

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

The reserve receives large amounts of nutrients from the surrounding fertile farmland which is on nurtient rich bedrock and has therefore a high biological production. The vegetation is composed of various bog, meadow, scrub and woodland communities. For large parts of the reserve the vegetation is unstable due to the dynamic processes within the delta. Around 300 higher plants are recorded in the area.

The mudbanks have a rich freshwater shoreline vegetation with annual vegetation on exposed banks (*Nanocyperetalia*). The channels, pools and backwaters are dominated by aquatic vegetation, of which the most important species is the nationally red-listed *Myriophyllum verticillatum* (NT). Previously there were large areas of sedge meadow (with *Carex vesicaria* in the outer part and *C. nigra* spp. *juncella* on more solid ground), although these areas are being taken over by meadow communties and *Salix*-scrub, following cessation of burning and grazing in the late 1970's/early 1980's. Regulation of Lake Mjøsa has also accelerated this process. Management measures are now implemented to stop overgrowing. Alder/bird-cherry woodland grows along the riverside, whereas on higher ground – mainly around Kråkholmene in the Svartelva delta – there are wooded meadows dominated by Pine *Pinus sylvestris*.

The benthic fauna in Åkersvika has altered in recent years following reduced amounts of nutrients. Several species which are sensitive towards pollution have re-colonised the area, whereas species which are more tolerant of pollution and which previously had large populations have declined. In sum the biomass of benthic fauna has been reduced by 50-60% since the 1970's, and this has resulted in a

reduction in the amount of food available to waders. Several *Chironomidae* species which are found in the area are not previously recorded in Norway.

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*.

A number of geographically interesting higher plant species are recorded in the reserve. This includes easterly species such as *Cinna latifolia* (NT) and *Iris sibirica* and southern species such as, *Carex hirta*, *Inula salicina* and *Quercus robur*. In addition several nationally red-listed species grow within the Ramsar site in particular those associated with aquatic habitats and meadows and woodland beside freshwater. This includes *Elatine triandra* (NT), *Lemna trisulca* (NT), *Myriophyllum verticillatum* (NT), *Stellaria palustris* (EN), *Veronica anagallis-aquatica* (NT). *Viola persicifolia* (VU), *Chara contraria* (VU), *Stuckenia pectinata* (NT)
Redlisted mosses recorded include *Amblystegium fluviatile* (NT),
On the inner part of the mudbanks are local patches of rich freshwater shore vegetation, an endangered vegetation type in Norway. In the backwaters, flood channels and old rivercourses one finds rich aquatic vegetation with the red-listed *Myriophyllum verticillatum (NT)* being the dominant species.
It is referred to the national red list 2010.

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*.

Birds:

The most important function for Åkersvika is as a staging site for wetland birds both during spring and autumn. Ducks are the most numerous, and the following maximum counts are worthy of mention - 1944 ind. Mallard *Anas plathyrhynchos*, 1333 ind. Common Teal *Anas crecca* and 169 ind. of Eurasian Wigeon *Anas penelope*. In recent years numbers of staging Pink-footed Geese *Anser brachyrhynchus* have increased, and there are often flocks of over 200 geese in autumn. Numbers of waders have, as stated previously, declined, with the highest numbers being recorded in the 1960's and 1970's. In particular Ruff *Philomachus pugnax* (VU) were more plentiful with maxima of 1000 individuals in spring and 905 in autumn. Several other wader species have been recorded in large numbers during spring migration such as Northern Lapwing *Vanellus vanellus (NT)* (366 individuals), Eurasian Curlew *Numenius arquata (NT)* (340 individuals), Greenshank *Tringa nebularia* (200+ individuals), Wood sandpiper *Tringa glareola* (175 individuals) and Common Snipe *Gallinago gallinago* (250+ individuals). Numbers in autumn are normally much lower, although in years with low water levels in August and September there are records of over 200 Dunlin *Calidris alpina*, about 50 Little Stint *C. minuta* and 15 Curlew Sandpiper *C. ferruginea*.

The reserve is also a staging site for several nationally rare and red-listed species including Whooper Swan *Cygnus cygnus*, Bean Goose *Anser fabalis*, Northern Pintail *Anas acuta* (up to 13 individuals in spring), Northern Shoveler *Anas clypeata*, Greater Scaup *Aythya marila,* Common Scoter *Melanitta nigra*, Velvet Scoter *Melainita fusca,* Smew *Mergus albellus*, Common Crane *Grus grus* and Broad-billed Sandpiper *Limicola falcinellus* (rare and in small numbers). National and regionally rare and/or threatened species which nest or have nested include Great Crested Grebe *Podiceps cristatus* (NT) (0-1 pair, irregular due to variations in water levels), Garganey *Anas querquedulla (EN)* (nested in the 1960's), Common Coot *Fulica atra* (2-4 pairs), Moorhen *Gallinula chloropos* (1-2 pairs), Oystercatcher *Haematopus ostralegus* (1-3 pairs), Little Ringed Plover *Charadrius dubius* (1-2 pairs), Common Tern *Sterna hirundo* (VU) (1-3 pairs) and Lesser Spotted Woodpecker *Dendrocopos minor* (1-2 pairs). Several pairs of Osprey *Pandion haliaetus* hunt in the reserve (these nest on nearby hillsides).

Fish: A total of 15 of Mjøsa's 19 species of fish use Åkersvika at various times. The Trout *Salmo trutta* population in Mjøsa swims up the rivers Svartelva and Flakstadelva to spawn in autumn. This population

so considered both valuable and at risk. The Mjøsa form of Grayling *Thymallus thymallus* and Lamprey *Lampetra fluviatilis/planeri* use Flakstadelva, Svartelva and Finsahlbekken as reproduction area. Mentioned species pass Åkersvika both as spawning fish and as young fish. See also point 14.

Mammals:
The bat species Daubenton's Bat *Myotis daubentonii* and Northern Bat *Eptisicus nilssonii* are common in the area, whereas Soprano Pipistrelle *Pipistrellus pygmaeus* is recorded at nearby Domkirkodden and few other sites in Hedmark.

Crustaceans:
European crayfish *Astacus astacus* (EN) is occasionally recorded within the reserve.

Invertebrates:
Ruddy Darter *Sympetrum sanguineum* (NT), Vagrant Darter *Sympetrum vulgatum*, *Ecliptopera capitata* (VU), *Enochrus melanocephalus*, *Ilybius guttiger* (NT)

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:

Due to the communication network which is built within the reserve, both before and since it was designated a nature reserve, mean that everyone in the local community knows the area. Previously Åkersvika was used to pump out waste from the cellulose factory at Klevfoss, but the factory is now closed. Åker farm, which is adjacent to the reserve, was the royal farm in Hedmark in viking times until Harald Hardråde moved the market from Åker to Storhamar in 1046, and thus established Hamar-kaupangen as the new centre of power in the district. The landscape is rich in archeological sites, over 125 in total. Over 90% of these there are burial mounds and graveyards situated between Flakstadelva and Svartelva.

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: Partly private, partly municipal.
(b) in the surrounding area: Partly private, partly municipal.

25. Current land (including water) use:

(a) within the Ramsar site:
Sport fishing is popular during periods when fish pass through Åkersvika in spring. There is little boating, due to the large variations in water levels in Mjøsa.

There is some cultivated farmland within the reserve, east of the E6 trunk road in the Flakstad delta, between Åkersaga and the Rørøs railway line, as well as small cultivated areas in the inner part of Svartelva delta. The reserve bye laws permit this type of farming within the site. Waterside meadows in the area were previously burned or grazed, but this has now ceased. However, a small area by Svartelva delta has been grazed during the last 5-7 years as part of the management plan for the site. Forestry operations are not permitted, although permission was granted to cut an area of cowberry woodland at Ulvstuodden in 1988.

(b) in the surroundings/catchment:
Åkersvika is adjacent to the town of Hamar, and the reserve is surrounded by several housing estates and industrial areas. Along the two rivers that flow into the reserve are vast areas of agricultural land in the lower reaches and coniferous woodland in the upper reaches. Agricultural run-off plays a major role in the build up of the delta and supply of nutrients to Åkersvika.

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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 close proximity to Hamar means that the area is under hard pressure from developments such as roads, railway, infilling of industrial sites and not least building of sports facilities in connection with the winter olympic games in nearby Lillehammer in 1994. As part of the games a skating rink (The Viking Ship – Vikingskipet – or Hamar Olympiahall) was built, and in compensation an additional area between the Stange Bridge (Stangebrua) and the E6 highway received status as a nature reserve.

Cessation of burning, cutting and grazing of the waterside meadows has, together with the effects of the last regulation of Lake Mjøsa in 1964, led to a gradual overgrowing of damp meadows and boggy areas by tall grasses and willows *Salix*.

Extensive plans to expand the E6 highway, which run straight through the Ramsar site, from three to four lines are being debated. Several alternatives exist of which one could possibly affect the site negatively. A decision will probably be made in 2012. In this connection there have been made a mission report (Ramsar Advisory Missions – No. 64: Åkersvika, Norway)

(b) in the surrounding area:
The amount of nutrients running into the reserve via the rivers has been reduced due to better control of agricultural drainage in the last 20-30 years. This has resulted in a reduction of available biomass in the form of food species for waders being reduced by over 50%. At the same time a reduction in the amount of pollutants from industry running into the reserve has had a positive effect on the ecosystem.
The area is affected by heavy metals, oil products and chlorinated hydrocarbons.

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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.

Åkersvika was designated as a nature reserve on 26th July 1974. The nature reserve was expanded both in 1984 and in 1992. These new areas also have status as part of the Ramsarsite.

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?: Yes (1997)

d) Describe any other current management practices: -

As part of the management plan a small area at Vidarshovenga by Svartelva has been grazed (first by cattle and since by horses) during the past 5-7 years to prevent over-growing.

28. Conservation measures proposed but not yet implemented:
e.g. management plan in preparation; official proposal as a legally protected area, etc.

A new management plan will be worked out when the decision for road expansion has been made (see point 26 a)

29. Current scientific research and facilities:
e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The county governor of Hedmark organises systematic counts of staging waterbirds during spring and autumn. These counts have been carried out almost continuously since 1974, with a break between 1979-1983.

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.

There are two bird observation towers within the reserve – by the Svartelvadelta and by Flakstaddelta.

The area is used for educational purposes by schools from Hamar and from Stange. This includes schools at all levels from primary schools to colleges of higher education. The reserve is used for walks, projects and theme days/theme weeks to highlight conservation in general and in particular wetland conservation.

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

The close proximity to Hamar with 20 000 inhabitants' means that the area is much used for recreational purposes (mainly walking). The two bird observation towers are popular.

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

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

Kålås, J.A., Viken, Å., Henriksen, S. and Skjelseth, S. (eds.). 2010. The 2010 Norwegian Red-list for Species. Norwegian Biodiversity Information centre, Norway.

Botanical and management plans:
Fylkesmannen i Hedmark, miljøvernavdelingen 1997. Åkersvika naturreservat. Forslag til forvaltningsplan. 61 s. + vedlegg. (In Norwegian - management plan for Åkersvika).

Kjellberg, G., Solheim, R. & Wold, O. 1983. Forslag til kompensasjonstiltak i Åkersvika. Konsekvensutredning. NIVA-rapport, lnr. 31410: 1-36 + vedlegg (In Norwegian – an assessment of compensation measures in Åkersvika).

Hamarsland, A. T. 2003. Åkersvika naturreservat – etablering av ny minimumsvannstand. NVE Region Øst. Rapport, 13 s. + vedlegg. (In Norwegian - technical plan for water regulation in the reserve).

Wold, O. 1993. Åkersvika naturreservat – vegetasjon og flora. Fylkesmannen i Hedmark, miljøvernavdelingen. Rapport nr. 11/93: 1-46. (In Norwegian – vegetation and flora of Åkersvika).

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Kjellberg, G. 1992. Undersøkelse av bunnsedimenter og bunndyrforekomst i Åkersvika naturreservat i 1990-91. Sluttrapport. NIVA-rapport, lnr. 2783: 1-53. (In Norwegian – on sediments and benthic fauna in Åkersvika).

Birds:
Solheim, R. 1992. Sammenstilling av ornitologisk registreringsmateriale for Åkersvika naturreservat.

Fylkesmannen i Hedmark, miljøvernavdelingen. Rapport nr. 2/92: 1-23 + vedlegg. (In Norwegian – on changes in numbers of staging birds in Åkersvika).

Sonerud, G. A. 1973. Akersvika ved Hamar - en truet lokalitet. Sterna 12: 1-20. (In Norwegian with English summary, on the importance of Åkersvika for migrating and breeding birds).
