

1. Date this sheet was completed/updated: 1/6/1998

2. Country: Greece

3. Name of wetland: Evros Delta

4. Geographical co-ordinates: lon: 26⁰ 04' 01'' lat: 40⁰ 50' 09''

5. Altitude (average and/or max. & min.): 0

6. Area (in hectares): 9,267

7. Overview (general summary, in two or three sentences, of the wetland's principal characteristics):

The site is composed of shallow sea waters, brackish lagoons and smaller freshwater lakes and channels, sandy beaches and islets, temporarily flooded mud flats, salt marshes and to a lesser extend freshwater marshes. Around the site there are remnants of gallery forests alongside the main course of the Eros river bed and the courses of smaller rivers/torrents flowing in the area; also many draining and irrigation channels exist in the adjoining pastures and agricultural lands.

8. Wetland type (please circle the applicable codes for wetland types as listed in Annex I of the Explanatory Note and Guidelines document):

marine-coastal: A · B · C · D · E · F · G · H · J · K

inland: L · M · N · O · P · Q · R · Sp · Ss · Tp

Ts · U · Va · Vt · W · Xf · Xp · Y · Zg · Zk

man-made: 1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9

Please now rank these wetland types by listing them from the most to the least dominant: F, J, K, H, 9, 6, 1

9. Ramsar Criteria: (please circle the applicable criteria; see point 12, next page)

1a · 1b · 1c · 1d | 2a · 2b · 2c · 2d | 3a · 3b · 3c | 4a · 4b

Please specify the most significant criterion applicable to the site: 3

10. Map of site included? Please tick yes or no

(Please refer to the Explanatory Note and Guidelines document for information regarding desirable map traits)

11. Name and address of the compiler of this form:

HELLENIC MINISTRY OF ENVIRONMENT, PHYSICAL PLANNING
AND PUBLIC WORKS
ENVIRONMENTAL PLANNING DIVISION

NATURAL ENVIRONMENT MANAGEMENT SECTION
 36, TRIKALON STR. / GR-115 26 ATHENS
 TEL +30 1 69 18 202, 69 17 620 / FAX: +30 1 69 18 487

With the collaboration of:

THE GOULANDRIS NATURAL HISTORY MUSEUM
 GREEK BIOTOPE / WETLAND CENTRE (EKBY)
 14th KILOMETRE THESSALONIKI - MIHANIONA / GR-57001 THERMI
 TEL. +30 31 473.320, +30 31 475.604 / FAX: +30 31 471.795

12. Justification of the criteria selected under point 9, on previous page

Criterion 1: see sections 13, 14, 15, and 16

Criterion 2: see sections 17 and 18

Criterion 3: see sections 18

Criterion 4: see sections 18

13. General location: The site is located at the north-eastern part of Greece known as Thraki (Thrace), in close proximity to the Greek-Turkish border. Alexandroupolis is the nearest large town to the wetland; it is located 15 km west of the site, it has 344,025 inhabitants and is the administrative centre of the Prefecture of Evros.

14. Physical features:

Geology and geomorphology: Evros Delta is a typical Mediterranean delta formed over millennia by the alluvial deposits (of calcareous origin) of the Evros river itself and shaped by their interaction with the sea. During the rainy seasons, the torrent Loutros also contributes small amounts of fresh water to the delta, without affecting the area's topography.

Origins: It is a natural ecosystem, modified by human activities since 1950.

Hydrology: The water balance model estimates 151mm/year deep percolation. This amount of fresh water in correlation with the amount of the river water discharge, benefits the aquifer.

Soil type and chemistry: The dominant soils are silt and clay with high percentage of salts and low porosity.

Water quality (physico-chemical characteristics): Waters of the Evros river show a high nitrates load, possibly as a result of fertiliser runoffs from crop cultivation of the catchment area, in all 3 countries that share it (Bulgaria, Turkey, Hellas)

Tidal variations: Although in eastern Mediterranean the tidal range is very narrow, Evros delta is normally flooded by sea tides because it is formed lower than the sea level.

Catchment area: Its total catchment area is 52,500 km² of which the 66% lies in Bulgaria, the 27.5% in Turkey and the 6.5% in Greece. Its tributaries in the Greek territory are the Ardas river and the Erythropotamos.

Climate: It is humid, mesothermic Mediterranean. The average annual precipitation is 561,3 mm (1951-1990). August is the driest month and December is the wettest month. The average annual maximum temperature is 30,3⁰C, and the average minimum is 1,3⁰C. The average annual temperature range is 20,4⁰C. The winters are often very cold with frost and strong NE winds.

15. Hydrological value: Evros delta provides water for fisheries and for irrigation; it works as a natural filter cleaning pollutants from water; it prevents sea water going inland and attenuates floods.

16. Ecological features: Despite its relatively small area, the site hosts an important diversity of habitats and a great variety of species of birds and. In the delta of Evros all the characteristic plant communities associated with Mediterranean wetlands can be found. Sand dune vegetation is found mainly in the western part of the Delta, along the coast and on the small islands. Saltmarshes are extended in most of the area and consist important habitats for both fish and birds, playing a major role in controlling flooding when the sea level is high. They retain sediments, salts, and toxic substances and help stabilise the surface terrain. In the salt and brackish water grow submerged beds of *Ruppia* and *Zostera*, providing the major source of food for many kinds of birds (ducks, swans). The aquatic vegetation in shallow freshwater ponds and canals, is dominated by rooted aquatic plants with floating leaves or submerged plants with often emerging flower spikes (*Nymphaea alba*, *Trapa natans*, *Ranunculus fluitans*, *Potamogeton crispus*, *P. pectinatus*, *Myriophyllum spicatum*, *Ceratophyllum sp. etc.*). Freshwater marsh vegetation mainly consisted of reeds (*Phragmites australis*, *Scripus maritimus*, *Typha angustifolia*, *T. latifolia*, *Schoenoplectus lacustris* etc.) and rare species such as Water chestnuts (*Trapa natans*) grow in the fresh water channels and flooded areas along the full length of Evros River. Rushes and tamarisks grow in the transitional areas between salt and fresh water. In the wider area of the site, along the river and in the upper area of the Delta there are remnants of a formerly extensive riparian forest of poplar, willow, alder, and elm which protect the banks of the river from erosion and attracts many animal species. The adjoining land is mainly agricultural. The hilly area north of the delta is covered by phrygana, low open oak forest and pine forest.

17. Noteworthy flora: More than 350 plant species have been identified in the Evros Delta itself and along the river. Of them, 15% are strictly halophytic covering about 60% of the total area. The occurrence of 6 taxa indicates a high conservation value of the wetland. Among them *Trapa natans* is included in the WCMC database and/or European Red Data list, *Iris spuria ssp. ochroleuca* and *Pancratium maritimum* are protected by the Greek Presidential Decree (67/1981), *Cenchrus incertus*, *Heliotropium curassavicum*, *Leymus racemosus ssp. sabulosus* are considered rare in Greece and/or reach their extreme distribution limits in Northern Greece.

18. Noteworthy fauna: Evros Delta is known mostly for its ornithological significance. It supports a diverse avifauna serving not only as a wintering or intermediate station for migratory birds but also as a breeding site for rare and endangered bird species. Of the total of 407 species of birds in Greece, at least 304 have been recorded in the area. Although the number of birds which once nested in large numbers has declined dramatically since the 70's, the following species continue to nest in the area: *Phalacrocorax carbo*, *Ixobrychus minutus*, *Ardea purpurea*, *Tadorna ferruginea*, *Aythya nyroca*, *Circus aeruginosus*, *Glareola pranticola*, *Hoplopterus spinosus* etc. There are also tern colonies, such as *Gelochelidon nilotica*, *Sterna sandvicensis*, *Sterna hirundo*, *Sterna albifrons*. In addition, the Delta is used as a feeding area from many species of birds of prey which nest north of the wetland, in the Dadia Forest and the surrounding hills. The rarest species of these birds are *Falco peregrinus*, *Aquila pomarina*, *Circaetus gallicus*, *Aquila chrysaetos*, *Aquila heliaca*, *Haliaeetus albicilla*.

The Delta remains one of the most important wintering areas in the Mediterranean for large numbers of ducks, geese, and other waterfowl. Their numbers vary between 30,000 and 150,000 birds; the average number in recent years has varied between 50,000 and 60,000

birds. The most common are: *Anas penelope*, *A. acuta*, *A. crecca*, *A. strepera*, *A. platyrhynchos*, *Cygnus olor*, *Fulica atra*, *Anser albifrons*, *Phalacrocorax pygmeus* and *Egretta alba*. Many species stop to rest and feed during the spring and autumn migrations: *Pelecanus onocrotalus*, *P. crispus*, *Phoenicopterus ruber* which have almost become full-time residents, *Ciconia ciconia*, *Ciconia nigra*, *Platalea leucorodia*, *Plegadis falcinellus*, herons, cranes, waders, gulls and terns as well as many passerines. Finally, because of its favourable geographical position between Europe, Asia, and Africa, many birds which are seen only rarely or not at all in the rest of Europe occur here. These species include *Anser erythropus*, *Branta ruficollis*, *Numenius tenuirostris*.

The ichthyofauna of the river is quite important. Among the 46 fishes that have been recorded, *Alosa fallax*, *Aspius aspius*, *Rhodeus sericeus amarus*, *Cobitis taenia*, and *Aphanius fasciatus* are included in Annex II of Council Directive 92/43/EEC. The invertebrate *Araschnia levana* is at the southern edge of its distribution, and *Lycaena dispar* is included in Annex II of Council Directive 92/43/EEC. 8 amphibians and reptiles of the 28 species recorded in the area (*Triturus cristatus*, *Bombina bombina*, *Testudo hermani*, *Testudo graeca*, *Emys orbicularis*, *Mauremys caspica*, *Elaphe quatuorlineata*, *Elaphe situla*) and two mammals out of the 40 species recorded in the area of the Delta (*Lutra lutra* and *Citellus citellus*) are also included in the same annex.

19. Social and cultural values: (e.g. fisheries production, forestry, religious importance, archaeological site etc.)

The coastal zone and the lagoons are particularly valuable for fisheries and specific measures are taken to ensure the sustainable use of these habitats and the conservation of fish stocks.

Grazing is of high social value and an annual periodical grazing management program, based mainly on bird protection and conservation, has been put in operation since 1997. Besides that, the expansion or establishment of new livestock facilities are not permitted inside the site.

Hunting also constitutes an important social value and hunting areas have been delineated on the basis of game species population variation and seasonal distribution, conservation requirements of endangered species, topography of the area, existing warding potential.

Since 1990, the local society has gradually attributed value to the protection status of the site, with a particular emphasis on the development of eco-tourism, environmental education and bird watching, although there are few relevant facilities.

Another social value of the area is related to scientific research regarding fauna, flora and abiotic features of the wetland ecosystem.

20. Land tenure/ownership of:

(a) site: State owned.

(b) surrounding area: State (river beds, channels etc), Private / Community owned agricultural land .

21. Current land use:

Site: No people are living inside the Ramsar site. Grazing is applied to about 37% of the site with a total number of 500 - 600 cattle and 12,000 sheep. Agricultural activities are also present although restricted due to unfavourable soil conditions. Fishing is occurring in the lagoons and marine parts of the sea and 2-3 terrestrial aqua-culture units are in

operation. Hunting is also allowed in parts of the site. A network of irrigation and drainage channels is also maintained .

Surroundings/ catchment: At the wider area the population reaches 44,266 people (33,2% of the whole population of the Evros Prefecture). Main land uses are agriculture (98% arable land) and grazing. Fish production is also high.

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

Drainage works carried out between 1950 and 1970 (including channel construction and embankment of the river) caused major hydrological and land use changes in the Delta and as a result, parts of wetland habitats have been lost and others have been seriously modified. In addition, fresh water from Evros has been increasingly consumed for irrigation in Greece as well as in Bulgaria and Turkey. The present hydrological state of the site is characterised by low freshwater supplies in the lagoons, seasonal flooding incidents in areas neighbouring main channels and seasonal intrusion of salt water to the inland. Efforts are made to manage the water resources in the best possible way, including (a) re-flooding of Drana lagoon which had been drained in the late 80's, with the result of losing the large colony of *Larus melanocephalus*; (b) controlling the direct outflow of the river to the sea by operating gates and redirecting it to salt and fresh water marshes through existing channels.

The quality of surface and underground water of the site is affected mainly by industrial and domestic wastes, mostly coming from the neighbouring countries as in the Greek part industrial activity is low. Incidents of transboundary pollution are always a threat to the ecosystem and multilateral discussions have been held to deal with such issues. On-line monitoring of water quality is being conducted at seven points in Evros river and any exceeding values are automatically communicated to the Prefecture and the Ministry of Environment. Agricultural runoffs within the site are practically very limited but fertilisers and pesticides from agricultural land at the surrounding area end up in the delta.

Grazing has been considered as another source of pressure, which was temporarily removed in 1997, after an epizootic on the local cattle. Despite the fact that all animals have been since removed, a management plan concerning grazing is being prepared in order to define habitat management practices through grazing.

Concerning fishing activities, in the recent years the size of the catch has decreased, mainly due to over-fishing over the years. Since 1998 regulations for fishing have been applied and since 1995 proposals for aqua-culture within the site are turned down. Hunting pressure is high during the allowed period and incidents of breaking the hunting regulations have been gradually reduced .

A procedure for approval of Environmental Terms for a number of works and activities through Environmental Impact Assessments/ Studies has been established in Greece in 1990. Aiming to holding back the further loss and degradation of the site, all relevant planned works have since been examined under this procedure by the Environmental Authorities. The majority of projects concerning animal farms, drainage and/or agricultural improvement was rejected whereas only the absolutely necessary and less disturbing maintenance works have been permitted.

23. Conservation measures taken: (national category and legal status of protected areas - including any boundary changes which have been made: management practices: whether an officially approved management plan exists and whether it has been implemented)

A set of management / protection measures and delimitation of zones were established in April 1998 by the Ministries of Agriculture, Environment, Energy and Merchant Marine. A short description of the zones and measures is as follows.

Zone I includes coastal waters, wet meadows and drained land

In this zone, permitted activities (under specific spatial/ temporal or other terms) are: scientific research; daily visits for nature observation (camping is prohibited); environmental education and construction of relevant facilities; maintenance of the existing country road network (extension is prohibited); conduction of works and projects for the conservation and protection of the ecosystems; professional and game fishing and use of the lagoons as natural aqua-culture areas; modernisation of the existing aqua-culture; hunting according to regulations; agriculture; works for the sustainable management of water; use of the existing drills and grazing.

Zone II includes wetland areas, islets and shallow coastal areas

In this zone professional fishing; sailing of leisure boats and game fishing boats and passage of pedestrians or vehicles are allowed. Hunting is prohibited.

Zone III includes lagoons, wetlands, grassland and agricultural areas.

In this zone shell farming; grazing of cattle as it stands today and animal farming; operation and preservation of irrigation networks; passage of vehicles; construction of warden houses and observation towers; sailing and harbouring in the old harbour are allowed under terms.

Zones I, II and III comprise the Ramsar site. The same zones have been proposed for inclusion in the NATURA 2000 network under the code GR1110001 and are already an SPA under the same code. The site is a game refuge.

In addition to the above Zones, several important neighbouring natural features have been identified as Zones A, B, C, D, E including parts of channels, natural formations, small wetlands and shallow coastal areas. In this zones, permitted activities under terms are: scientific research; daily visits for nature observation (camping is prohibited); constructions for environmental education and nature observation; use and maintenance of the road network; management works for the conservation, protection and rehabilitation of the natural environment; apiculture; maintenance of channels; grazing and operation of the existing farms; professional and game fishing according to existing regulations and hunting according to existing regulations.

A buffer zone has also been identified as a Zone of controlled activities, which includes agricultural area and grassland. In this zone, agricultural, cattle raising and aqua-culture activities are allowed under terms as well as constructions and works related to these uses and activities.

A Preliminary Management Scheme has been operating since 1997 on the site, established by Programme Agreement signed by the Ministers of Environment and Agriculture, the Regional Environmental Services and Local Authorities. It comprises a Joint Committee for the steering of the implementation, it has a flexible administration and the required secretariat /co-ordination support is provided by a Local Development Institution named EVROS LTD. The Programme Agreement has an Annex with the planned works and activities, their time-table (1997-1999) and budget. Priority actions include small scale management works, training of the personnel, construction of facilities

for fisheries, farming management practices, grazing management practices, visitor management (placement of signs, construction of warden houses, observation towers), operation of the information centre and warding of this site (access to some parts of the site is controlled by military police services).

Preliminary Management Schemes have a three fold aim: 1) to respond quicker to the matters that arise concerning the every day management problems of the sites, 2) to carry out projects concerning awareness, infrastructure, monitoring and management., and 3) to co-ordinate relevant authorities in working out the further priorities for the management of the sites.

The Red Alert Programme, undertaken by WWF- Greece from 1990-1997, had a positive influence in local attitudes. The project had as an Works for flood attenuation are planned objective to arrest further degradation of this internationally important wetland, through the collaboration of users, conservation and management bodies, decision-makers, and NGOs. Scientists permanently established in the area, monitored any activity that threatened the wetland directly or indirectly, determined their causes and informed the relevant bodies about the dangers of degradation, but also about wetland functions and values.

The rehabilitation of lake Drana is being carried out by the Prefecture Services, based on the technical proposals submitted by WWF - Greece in 1995.

The site is included in the Montreux Record since 1990. Under the Management Guidance Procedure a mission visited the site in 1989 and reported on the status of the area.

24. Conservation measures proposed but not yet implemented: (e.g. management plan in preparation; officially proposed as a protected area etc.)

The site is proposed for the category of National Wetland Park, according to the Law 1650/86 (legal text under preparation, in form of a Presidential Decree).

Further management proposals not yet officially approved have been elaborated for many aspects of the management of the site, as part of the documentation required for the establishment of the National Wetland Park, including the establishment of a permanent Management Scheme. The conservation actions proposed are in accordance with the "Guidelines on Management Planning for Ramsar sites and other Wetlands" and include *inter alia* : training of farmers on sustainable use of pesticides, development of eco-tourism, management of cattle raising, development of a model for the management of water, works for flood attenuation.

A project of incentives for the voluntary implementation of management measures in agricultural land (using the agri-environmental regulation 2078/92) is to be submitted for approval. The project includes promotion of biological cultivation, reduction of grazing, long-term pause of cultivation and reduction of the amount of fertilisers used.

An additional wetland surface in the vicinity of the area (the riverine formations) has been proposed for protection under the national legislation.

In addition to the operating Sewage Treatment Station of Alexandroupolis, the construction of sewage treatment plants is planned for the other surrounding towns.

25. Current scientific research and facilities: (e.g. details of current projects; existence of field station etc.)

A project co-funded by the European Commission and the Ministry of Environment is in progress for *Phalacrocorax pygmaeus* and *Anser erythropus*, undertaken by WWF and the Hellenic Ornithological Society. The project includes site monitoring for these species and small scale management measures for their populations.

A program for monitoring *Numenius tenuirostris* is being carrying out by the General Secretariat of Forests and Natural Environment of the Ministry of Agriculture in co-operation with the Hellenic Ornithological Society.

The Greek Biotope / Wetland Centre (EKBY), in co-operation with WWF, has recently studied the suitability of soil for agricultural purposes, in the surrounding area of Drana Lagoon.

26. Current conservation education: (e.g. visitors centre, hides, information booklet, facilities for school visits etc.)

A fully equipped Information Centre is established in one of the two entrances to the site in Loutro village. An Eco-tourism centre is established in the other entrance, the town of Ferres. Within the site there are facilities for bird watching, guardhouses and a Research Station. This infrastructure supports the activities of information - public awareness, environmental education, monitoring etc. Specific actions of information and public awareness include special publications, video tapes, CD Roms, organisation of workshops and guided tours of visitors and schools. As a result, many Greek schools, researchers from national or foreign institutes and universities have visited the Delta in the last years.

27. Current recreation and tourism: (state if wetland is used for recreation/tourism; indicate type and frequency/intensity)

The wetlands in the site are not used for tourism or recreation. The only visitors except the local users of the site are groups interested in observing nature, which can hire a boat and a guide or just walk on the dikes in the designated paths. A camp site is operating in Loutros village and hotels are available in the near by towns of a potential of about 1400 beds. There are important archaeological sites and spring baths very close to the site, which attract several visitors in addition to nature lovers. Even though no definite numbers are available, the numbers of people visiting the site has dramatically increased since 1994-95, when local communities started getting interested in eco-tourism.

28. Jurisdiction: (territorial e.g. state/region and functional e.g. Dept of Agriculture/Dept. of Environment etc.)

Territorial jurisdiction over the site lies with the Region of Anatoliki Makedonia & Thraki. Concerning the functional (conservation) jurisdiction, co-ordination lies with the Ministry of Environment in collaboration with the Ministry of Agriculture, the Prefecture of Evros and Local Authorities.

29. Management authority: (name and address of local body directly responsible for managing the wetland)

No single body legally responsible for the direct local conservation of the wetland exists. The Preliminary Management Scheme is guided by a Joint Committee presided by the Head of the Municipality of Ferres. Secretarial assistance is provided by :

Information Centre of Evros

Loutros

681 00 Alexandroupolis

GREECE

Tel: +30-551-61333, Fax: +30-551-61111

30. Bibliographical references: (scientific/technical only)

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