Information Sheet on Ramsar Wetlands

Categories approved by Recommendation 4.7 of the Conference of the Contracting Parties.

NOTE: It is important that you read the accompanying *Explanatory Note and Guidelines* document before completing this form.

1. Date this sheet was completed/updated:

10.12.98

For office use only.

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10/03/78	7IT020
Designation date	Site Reference Number

2. Country:
Italy

3. Name of wetland:
Cavanata Valley

4. Geographical coordinates:
45° 43’ North; 13° 28’ East

5. Altitude: (average and/or max. & min.). 0 m a.s.l.

6. Area: (in hectares) 243 ha

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

The area encloses a former fishing and hunting valley, the remains of the eastern-most part of the Grado lagoon. After reclamation it was completely surrounded by embankments and regulating weirs were installed which lead to the open sea. Various habitats host rich flora typical of lagoon environments: sandbanks with halophyte vegetation, submerged meadows with *Ruppia maritima*, fresh water reed beds and forest cenosis as well as a stretch of beach with psammophyle vegetation. The rich and varied birdlife represents the most important naturalistic element. 232 bird species have been sighted during the past 20 years of regular observations and census, of which 60 regularly nesting. There are about 15,000 acquatic birds present during the migratory season.

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** - I - **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

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

1a - lb - **lc** - 1d / 2a - **2b** - 2c - 2d / 3a - 3b - 3c / 4a - 4b

Please specify the most significant criterion applicable to the site:

10. Map of site included? Please tick *yes* X- 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:
Dr. Rolando Marini (Director of nature preservation of the regional parks and forests agency), Via Manzini, 41, 33100 Udine.

Please provide additional ínformation on each of the following categories by attaching extra pages (please limit extra pages to no more than 10):

12. Justification of the criteria selected under point 9, on previous page. (Please refer to Annex II in the *Explanatory Note and Guidelines* document)

The Cavanata valley:

- hosts an number of combinations of rare, vulnerable or threatened species of flora and fauna, with a significant number of specimens of each species;
- is of particular value as a habitat for flora and fauna during critical phases of their biological cycles (especially during the migration and wintering of aquatic birds);
- is a regular host to a substantial number of specimens of particular groups of aquatic birds indicative of the value of the wetland and its biodiversity;
- is considered in Criteria 1 due to its exceptional role in natural, biological and ecological systems. The following groups present in the area confirm the wetland values and biodiversity of Criteria 3b): Gaviidae, Podicipidae, Phalcrocoracidae, Pelecanidae, Ciconiiformes, Ardeidi, Anatidae, Accipitriformes, Falconiformes, Gruiformes, Charadriiformes, Sternidae.

13. General location: (include the nearest large town and its administrative region)

The area is located in the Region of Friuli-Venezia Giulia at approximately 25 km north of the city of Trieste (regional capital, 250,000 inhabitants), in the coastal teritory to the east of the Grado lagoon.

14. Physical features: (e.g. geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth; water permanence; fluctuation in water level; tidal variations; catchment area; downstream area; climate

Physical environment

The valley is a wide expanse of lagoon separated from the sea by embankments. Three weirs allow regulation of the water level and link the valley with the sea. Fresh water is not discharged into the area from the hinterland but comes only from rainfall and five artesian wells. The principal environmental aspect is that of a brackish wetland with the exposed soil covered with low halophyte vegetation. The central islands, formed by the deposit of material from the channel excavations, are characterised by halophyte plants such as *Halimione sp. Salicornia sp.* and *Arthrocnemum sp*.. The original sand banks, situated between the Averto canal and the valley and between the latter and the Primero canal, are covered mainly by *Juncus maritimus*. In these zones, besides stretches of shrubs, there are small expanses of reed beds with *Phragmites australis* and *Scirpus maritimus*, encouraged by stagnant rainwater. Some areas are covered with *Robinia pseudacacia* partly mixed with *Rubus ulmifolius*. The expanses of water in the valley and the last stretch of the Averto canal constitute the aquatic part of the valley and are characterised by dense populations of submerged *Ruppia maritima*, whilst the areas where algae grow are more limited (*Chaetomorpha sp.*). Mud flats, areas which emerge periodically and are submerged by the tides and are characteristic of lagoon

basins, are not present in this valley. The average depth of the valley is 10-40 cm, although the Averto canal reaches depths of 10 m due to the flow of water and the tides. Other relatively deep areas have been man-made for aquaculture.
Outside the valley proper, various biotypes exist which further enrich the environment and the birdlife of the area. The side nearest the sea is covered with bushes and trees and leads to small dunes and the beach which is presently subject to erosion. Large coastal areas emerge at low tide and are covered with *Zostera noltii* and *Cymodocea nodosa*. To the west the valley borders with the Primero canal which constitutes the most eastern of the mouths of the Grado lagoon. The rest of the valley is surrounded by agricultural areas. Next to the bridge crossing the Primero canal there is a fresh water basin, only a few centimetres deep (flooded 1985), which borders with some meadows (1993). Other fresh water environments comprise the drainage channels from the surrounding fields and the northern portion of the Averto canal which collects part of the waters coming from the land drainage which are then discharged to the Fossalon pumping station. Reed beds of *Phragmites australis* are present in these areas as well as submerged and floating vegetation such as *Potamogeton sp*. Artificially planted woods along the Averto are host to a large number of bird species.

Evolution of the area

Early 1800s: Averto canal, western branch of the delta of the Isonzo-Isonzato complex which discharges, together with the Primero canal, into the Adriatic (Porto Primero);

Late 1800s: with the migration of the Isonzo estuary towards the east, the Averto canal is no longer supplied with water and the area is naturally modified, becoming the eastern-most part of the Grado lagoon and is not subject to important environmental charges;

Early 1900s: first land reclamation works with embankments and digging of channels. The first delimitation of the internal basin is carried out;

1930s: Vittoria Land Reclamation. The territory to the east of the basin is reclaimed and transformed into agricultural land. Embankments are built around the basin and the weir on the Aveto canal is built (1935) which no longer connects directly with the sea. The lacustrine basin, with a surface area three times the present one, is used for fishing and hunting activities. The embankment is built which will cut through the fishing valley.

1950s: the land reclamation works are completed. The surface area of the valley is drastically reduced and the entire northern part transformed into agricultural land.

1960s-1970s: the new embankments constructed after the floods of 1965 and 1966 eliminate the Cavanata canal and the area is transformed into an artificial beach.

Climate

The area falls within the Friuli lowlands plain where the climate is characterised by mild temperatures for more than 7 months in the year, a short dry summer season and relatively few hailstorms. The winter is mild and only a few nights are icy. There is little rain and it rarely snows. Exceptionally icy winters have been observed (1984-85). The springtime is cloudy and variable and rainfall doubles between January and May. The temperature is pleasant in March and in May it can become hot. The summer rains arrive first in June and then give way to a period of Mediterranean drought. However, from August to September the

rainfall doubles and it remains at an almost constant level (from 100 to 130 mm) in each of the autumn months.

Vittoria meteorological station (Fossalone):
- annual average temperture 9.07 C° (July 12.04 C° - December 6.42 C°)
- average rainfall 1033 mm

15. Hydrological values: (groundwater recharge, flood control, sediment trapping, shoreline stabilisation etc.)
The area is of no particular importance from a hydrological point of view.

16. Ecological features: (main habitats and vegetation types)
Vegetation
Eithin the valley there are sand banks with three typical classes of halophile vegetation: *Thero-Salcornietea; Arthrocnemetea fruticosae* and *Junctea maritimi*; submerged meadows of *Ruppia maritima*, several fresh water marshes and limited sections of meadow or woods. The zone comprises an area of beach with three classes of vegetation: *Cakilitea maritimae*; *Ammophiletea*, with association of *Echinophoro spinosae-Ammophiletum arenariae* and *Molinio-Juncetea*. The presence of reed beds of *Phragmites australis* interbedded with *Amorpha fruticosa* and *Tamarix* sp. is to be noted.

17. Noteworthy flora: (indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc.)
Among the rare species, the following are to be noted: *Trachomitum venetum, Erianthus ravennae, Limonium densissimum, Limonium serotinum* and *Cyperus kalli*.

18. Noteworthy fauna: (indicating, e.g., which species are unique, rare, endangered, abundant or biogeographically important; include count data, etc.)
Bird wildlife is particularly conspicuous during the wintering period and the spring and autumn migration periods. Large flocks of ducks and coots may be seen on the expanses of water from October to March whilst groups of cormorants and heron are seen at traditional sites. Many species use the valley for resting during the day and venture forth at night to search for food. The nesting birdlife is less abundant except for the colony of royal seagulls. The number of species which breed is actually quite high but the low number of pairs per species and their timid behaviour makes it difficult to count them. Some colony species, for example the common tern and the little tern have abandoned the valley as a nesting site (last nestings in 1977-78) probably because of the flooding of particular islands where they used to nest. Breeding of the royal swan and wild goose has been encouraged by the release of specimens which had been formerly held in captivity. The creation of a limited fresh water marsh has also permitted breeding of other species such as bittern and little bittern, and various other species typical of reed beds. The Fossalon complex which comprises the nothern Averto canal as well as the valley, with woods and agicultural areas, is particularly well-populated with breeding birds with about 60 species present.

Confirmed nesting species: Among the species observed having definite nesting sites: *Tachybaptus ruficollis* (2-4 pairs); little bittern (1-2 pairs); *Ardea purpurea* (since 1995: 2 pairs); spoonbill; royal swan (since 1995: 5-7 pairs); grey or wild goose (30 pairs); Anas platyrhyncos (since 1991: 40pairs); *Anas querquedule* (2-5 pairs); marsh harrier (3-4 pairs since 1992); hawk (2 pairs); buzzard; kestrel (3-5 pairs); common pheasant; water-rail; *Gallinago gallinago*; bald-coot (10 pairs); stilt plover (5 pairs); lapwing; *Larus argentatus*;

(600 pairs in 1993, 850 in 1997); common tern (up to the end of the 1970s); shear-water (up to the end of 1970s); wood-pigeon; *Streptopella decaocto*; turtle dove; cuckoo; horned owl; owl; common owl (4-8 pairs); swift; kingfisher; green woodpecker; red woodpecker; *Galeride cristata*; swallow; wagtail; *Moracilla cinerea*; nightingale; stonechat; blackbird; river nightingale; Cisticola juncidisreed warbler; great reed warbler; titmouse; tomtit; jay; magpie; starling; sparrow; goldfinch; reed bunting; *Acrocephalus arundinaceus*; blackcap; long-tailed tit; penduline; golden oriole; shrike; crow; green finch; corn bunting.

Main habitats

1. Frontal stretch of sea

The importance and number of species regularly present in this environment varies depending on the surface area considered. The sea is used as a daytime resting place during the winter for many ducks which feed in the valleys and the lagoon at night. Such a phenomenon is more evident during calm days, whereas most of the birds tend to remain in the valleys when the weather is windy. The wild duck, the pintail, the shoveller but especially the widgeon are the most easily and frequently sighted on the open sea. Other ducks regularly use the sea for food during the winter by feeding on molluscs. The garrot is the most common, followed by the "orco" and scooter. The presence of such species along the coast of Friuli-Venezia Giulia is of international importance given the shortage of these species in the Mediterranean environment. The razor-bill is, among the fish-eating ducks, the only one regularly present and is easily sighted from the embankments and in the Primero canal. Of the other fish-eating species which are numerous in the sea but scarce in the valleys, the diver, *Podiceps cristatus, Podiceps nigricollis* and the cormorant is important.

2. The flats

Vast muddy and sandy expanses emerge with low tide creating a typical feeding zone for various species of seagull and limicoli. Despite the short distance between the valley and this environment, many species are specific to tidal areas and may be seen in transit towards the interior. Among these are the curlew and the small curlew, which from the resting grounds at the Isonzo estuary spread out in search of food along the coast to the Mula di Muggia (in front of the Grado pine wood). The high presence of this species is strictly connected to the muddy intertidal zones typical of the coasts of northern Europe but which are scarce in Italy. The northern Adriatic coasts sustain a wintering population of about 3700 curlews, which correspond to more than 1% of the total in transit along the western migratory route which covering a large part of central Europe.

3. Deep waters

This environment is constituted by the Averto canal in the valley with species which are not normally representative of the rest of the environment. Wintering of the dun-bird and to a lesser extent the pochard are the most noteworthy of these presences and the Averto canal is one of the most important areas at a national level for the dun-bird These ducks rest regularly in the area, from where they move only to protect themselves from the strong "Bora"wind. Many specimens leave the valley at dusk, probably in order to reach feeding areas which are not suitable during the day. The Averto canal is often host to aquatic birds typical of the coast. diver, grebe and various species of "marine" duck have been periodically sighted, whilst dabchick cormorant can be seen regularly and in great numbers. The latter feeds and

rests during the day on the central islands and a "dormitory" has existed since 1994 which is considered to be the most important in the region, with a peak of 981 birds.

4. Shallow waters

Most of the valley is covered by large, shallow sheets of waters which constitute the favourite environment for ducks and wintering coots. The former also use the central islands for resting and cleaning their plumage. At the edges of the waters there are various areas only a few centimeters deep or with slightly emergent mud flats. 5 pairs of black-winged stilt nested here in 1997. The size of the area varies according to the depth of water considered suitable for fish breeding, depending on the various periods of the year. On average, relatively large areas emerge during the winter while in the summer most of the mud flats are submerged. The birds belonging to the order of the Caradriformi, normally defined as Limicoli, due to their method of searching for food on the emerging beds, are poorly represented given the limitation of this environment, but are continually increasing since the water level has been kept sufficiently low in the past years. The area defined as "sandy" in the valley is that which hosts the largest flocks of various species of Limicoli, particularly during the migratory periods. The same areas with very shallow waters are suitable for feeding wintering teals and *Anas querquedule* during spring migration.

5. Central islands

These emerged zones, of an artificial origin, are very important breeding grounds for several characteristic species. The large colony of royal seagulls covers almost all the small islands and part of the surrounding original sandbanks. Within the colony several pairs of royal mallards breed as well as an ever increasing number of wild ducks. Recent investigations have demonstrated a significant difference in the success rate of hatching eggs inside and on the edge of the colony. The greater success rate of the former is probably due to a lower incidence of predators. Repeated census have also shown that the wild duck is very slow in colonising newly emerged islands which are however rapidly used by an increasing number of *Larus argentatus*. At least five pairs of royal swans have been breeding regularly for several years on these islands or on the nearby sandbanks. The magpie and the wagtail also breed in these habitats. The first nesting of the spoon-bill in the Friuli-Venezia Giulia Region in 1997 was of great scientific interest, with one active nest and one nest abandoned (for unknown reasons). Large groups of cormorant and lap-wing are present on the islands during the winter as well as various species of ducks and geese.

6. Original sand banks

This environment is particularly important during the breeding season when many species nest amongst the thick vegetation. One pair of royal swans and several pairs of wild gees and royal mallard are regularly present. However, the most important presence is at least two pairs of marsh harriers which nest in sites characterised by small expanses of reed beds. The water fowl, the water-rail, kingfisher and various others are species which normally breed in this environment. There is another specific area within the "peschiera" which is traditionally used by groups of herons who rest here whilst awaiting the low tides on the mud flats.

7. Fresh water wetlands

The recently restored area (1985) and the Averto canal (northern stretch) constitute the only important fresh water areas. Many species breed there though many irregularly. The recent success for mating of two pairs of red herons should be noted. The nothern Averto canal is especially important for the nesting of the wil duck (about 15 pairs) of which up to 300 specimens have been observed in the post-reproductive period. Most of the mallards born in the interior between August and September are concentrated in the coastal areas as shown by the ringing operations and subsequent counts.
Similar summer concentrations occur in the recently restored flood area. Wild ducks are regularly present in the restored area where they succed in curtailing the advance of the reed beds which tend to invade the wide bodies of fresh, shallow water. An attempt of a pair of royal swans to nest was observed in 1990 and in 1992 one of the four pairs of marsh harriers managed to bred with success. The dabchich, bittern, coot, reed warbler and Acrocephalus arundinaceus breed exclusively, for the time being, in these areas. Various Limicoli have been observed on the mud flats in both zones, including the sandpiper "boschereccio", gadwit and the black-winged stilt. The later bred in the nearby Valley Panera in 1989, 1991 and 1992 and some specimens went back and forth between the nesting site and the reclaimed Cavanata valley.

8. The woods

The existing woods are not particularly suitable for nesting acquatic birds, but they host a large number of species. Nesting of buzzard, kestrel and common owl and probably the hawks and horned owls along the northern Averto canal is of great interest given the unsuitability of the adjacent, intensely cultivated plain. Within the valley, the wood near the builing known as "*Casa del Cacciatore*" (Hunter's House) shelters a wide area from the cold *Bora* wind and is valued by the *Anatidae* and coots.

9. Fields

The internal cultivated fields, adjacent to the valley and the restored area, are regularly used by wild geese for feeding. The presence of the flock attracts migratory birds belonging to the same sepcies or generis, and occasionally other birds. Large flocks of three species of geese spend the cold winters in these areas and in the nearby Dossi Valley.

19. Social and cultural values: (e.g. fisheries production, forestry, religious importance, archaeological site etc.)
Archeological findings of Roman vases and pottery are frequent not only in this area but in the entire lagoon zone and above all in the Aquileia territory.

20. Land tenure/ownership of: (a) site (b) surrounding area
a) The area is entirely publicly-owned: partly by the Friuli-Venezia Giulia Region and partly by ERSA, a Regional Agency.
b) maritime property, public property, private property, public waters

21. Current land use: (a) site (b) surroundings/catchment
a) regional nature reserve; no productive activity; since 1995 all operations connected to fish farming in the valley have been suspended, since the water levels are regulated to encourage the resident and migratory birdlife.
b) intense agricultural activity; summer tourism (bathing, sailing); professional fishing

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

a) The main negative factors for evolution within in the area are the land reclamation and embankment works which have drastically changed the ecosystems. These activities are considered completed at present and no further danger is foreseen from these factors.

b) various pastimes carried out in the immediate vicinity of the area, such as mollusc harvesting, swimming, sailing boats and motor boats.

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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)

Cavanata Valley Regional nature reserve (Art. 46 of Regional law dated 30.09.96 No. 42). Hunting has been prohibited in the area since 25.07.79 with the institution of the oasis for protection of fauna, set up by the provincial hunting committee of Gorizia. Infact, hunting had already stopped in 1970 following the expiry of the private hunting reserve license and the declaration of a "refuge area" by the local Hunting Reserve Authority.

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

The Plan for Preservation and Development of the Natural Regional Reserve is being prepared in accordance with regional law No.42/96.

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

Quantitative and qualitative census are being carried out regarding the nesting birdlife, in addition to in-depth studies of the biology of the wild duck, wild goose, royal swan and marsh falcon. Ringing operations are being carried out and a radio-tracking monitoring programme for several species of acquatic birds. A survey of cormorants is also in progress.

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

Financing has been allocated for restructuring an existing building to be used as a visitors' centre. Further financing has been obtained for the construction of footpaths for eductional purposes.

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

A screened footpath is planned which permits part of the area to be viewed from the outside, until completion of the footpaths and visitors' areas inside the area.

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

Region: Friuli-Venezia Giulia; Regional Parks and Forestry Agency.

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

Region of Friuli-Venezia Giulia
Regional Parks and Forestry Agency – Viale Manzini 41 – 33100 Udine

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30. Bibliographical references: (scientific/technical only)

- Parodi R., Perco F., Utmar P. 1993. *L'avifauna della Valle Cavanata*. (Birdlife in the Cavanata Valley) Fauna n°3 Bollettino degli Osservatori faunistici del Friuli-Venezia Giulia Udine.
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Lagoon and geomorphological map) Gortania n°14 Atti del Museo friulano di Storia naturale Udine.

- Ceschia G., Giorgetti G., Simonutti T. 1982. *Valli da pesca della laguna di Grado. Indagine sulle condizioni ambientali di alcune valli da pesca e sullo stato sanitario delle specie ittiche presenti* (Fishing valleys in the Grado lagoon. Investigations regarding the environmental conditions of some fishing valleys and the conditions of the fish species present) Gortania n°4 Atti del Museo friulano di Storia Naturale, Udine.
- Lanari D., Parodi R., Amirante G., Gobbo M., Orel G. 1991. *Progetto di massima di sistemazione della Val Cavanata* (Preliminary project for works in the Cavanata Valley) Notiziario ERSA. Gorizia
- Utmar P. 1998. *Prima nidificazione di spatola (Platalea leucorodia) in Friuli-Venezia Giulia – brevi note* (First nesting of spoonbill, *Platalea leucorodia,* in Friuli-Venezia Giuklia – brief notes) in Rivista italiana di Ornitologia anno 68. Milano

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