

Final version

Ramsar Advisory Mission No. 40

Italy

Ramsar sites of: Laguna di Orbetello
Palude della Diaccia Botrona
Torre Guaceto

With additional recommendations on the implementation of the Ramsar Convention in Italy,
and an Appendix on wetlands in the area of Manfredonia (Puglia)

Michael Smart
Consultant to the Ramsar Convention Bureau
December 1998

Executive summary

1. A Ramsar Advisory Mission to Italy was carried out in November 1998, with the object of advising the Ramsar Convention Bureau and the Government of Italy on conservation and wise use of three Ramsar sites: Laguna di Orbetello (Toscana); Palude della Diaccia Botrona (Toscana); and Torre Guaceto (Puglia). The consultant was requested to advise on the possible removal of these three sites from the Montreux Record, and on additional measures for the implementation of the Convention in Italy. The consultant visited the Nature Conservation Service (NCS) of the Ministry of Environment in Rome and, in the company of NCS officials and provincial officials, the three sites (paragraphs 1-4).
2. The report reviews the general implementation of the Ramsar Convention in Italy, pointing out the leading role played by Italy in hosting the first Conference of the Parties in Cagliari in 1980, the 1991 Grado Conference, and the 1996 Venice Conference on Mediterranean Wetlands (paragraphs 8-10). Italy's approach to designation of Ramsar sites is reviewed, with emphasis on the many additions to the List between 1977 and 1991 (bringing the number of listed sites to 46), the change of emphasis from reclamation for agriculture to habitat conservation, and on the possibility of additional site designations (paragraphs 11-13). Since 1991, greater emphasis has been placed on management of existing sites (paragraphs 14-17), and five sites have been placed on the Montreux Record.
3. The Ramsar site of Laguna di Orbetello is described, with notes on the criteria for international importance which it meets, its protected status, and the problems which led to its inclusion in the Montreux Record – an algal bloom in 1992 and 1993 caused by inflow of nutrients and lack of oxygen in the water (paragraphs 18-22). The site's position as part of the Maremma wetland complex is emphasized (paragraph 20). The report notes the success of the remedial measures taken to restrict inflow of nutrients and to improve water circulation, and **RECOMMENDS** the site be removed from the Montreux Record (paragraphs 23-25).
4. The Ramsar site of Palude della Diaccia Botrona (another part of the Maremma complex) is described, with notes on the criteria for international importance which it meets, its protected status, and the problems which led to its inclusion in the Montreux Record – incertainties in legal status and management policies, and consequent salinization and degradation of the fresh water marsh (paragraphs 26-30). The report notes administrative measures recently taken to clarify the legal status, and the development of a major restoration plan by the provincial authorities of Grosseto. Although the plan has not yet been implemented, the report considers that the former problems no longer threaten the ecological character and **RECOMMENDS** the site should be removed from the Montreux Record, though the Italian authorities should report to the Ramsar Bureau on the progress of the restoration, and should arrange for another site visit (paragraphs 31-33).
5. The Ramsar site of Torre Guaceto is described, with notes on the criteria for international importance which it meets, its protected status and the problems which led to its inclusion in the Montreux Record – possible establishment of a camp site and damage caused by uncontrolled tourist access (paragraphs 34-37). The report notes the plans to establish a state nature reserve, which will prevent installation of a campsite and permit a wide-ranging restoration plan. This plan has not yet been carried out, but the original threats have been removed, so the report **RECOMMENDS** removal of the site from the Montreux Record, and calls on the Italian authorities to provide reports on progress in restoration, and to arrange another future site visit (paragraphs 38-39).
6. The report presents additional comments on the management of Laguna di Orbetello and **RECOMMENDS** that the Ramsar site be enlarged (including measures to control boat movements on the lake), and also **RECOMMENDS** that special attention be given to the Stagnino and Stagnone areas (paragraphs 40-41).
7. The report presents additional comments on the management of Diaccia Botrona and **RECOMMENDS** that a buffer zone be established to the east (paragraph 42).

8. The report reviews the complementary nature of the five main Maremma wetlands and **RECOMMENDS** that the Trappola marshes, and possibly the Scarlino marshes, be designated as Ramsar sites. It **RECOMMENDS** that management of the five sites be co-ordinated (paragraphs 43-46).
9. Noting the success achieved by permanent WWF site managers at Orbetello and Burano, the report **RECOMMENDS** that such managers should be appointed at each of the main Maremma wetlands (paragraphs 47-49).
10. Turning to broader questions of implementation of the Convention at national level, the report **RECOMMENDS** establishment of a National Ramsar Committee, with involvement of other central technical ministries, national scientific bodies, regional and/or provincial authorities and non-governmental organizations (paragraphs 50-52). The report **RECOMMENDS** that Italy should formally deposit with UNESCO an instrument of acceptance of the Regina Amendments to the Convention (paragraph 53). It **RECOMMENDS** that management plans be drawn up for all Italian Ramsar sites, perhaps using the Ramsar Management Planning Guidelines (amended in Appendix 2) as a basis, and that permanent managers should be appointed at each site. Finally, it **RECOMMENDS** preparation of a brief update, for the next Conference of the Parties in Costa Rica in May 1999, on the many developments in application of the Convention in Italy since June 1998.
11. Appendix 1 gives the texts of the Montreux Record Questionnaires on the three sites, previously submitted by the Ministry of Environment to the Ramsar Bureau.
12. Appendix 3 presents a note on a visit to wetlands in the Manfredonia area. It describes the current situation of the Ramsar site of Saline di Margherita di Savoia and **RECOMMENDS** enlargement of that site, and designation of a new Ramsar site covering Frattarolo and Daunia Risi., important for the critically endangered Slender-billed Curlew. Echoing the main text, it also **RECOMMENDS**: establishment of a management plan at Margherita di Savoia, with special attention to control of illegal hunting; appointment of resident site managers and co-ordination of management plans between the different Manfredonia wetlands; and continued study of the breeding flock of Greater Flamingo, which has links with the Eastern Mediterranean.
13. Appendix 4 presents a list of persons met, and Appendix 5 a bibliography.

Objectives of the mission

1. The objectives of the mission (as set out in the consultant's Terms of Reference with the Ramsar Convention Bureau) were:
 - to assess the current conservation status of three sites designated by the Government of Italy for the Ramsar *List of Wetlands of International Importance*: Laguna di Orbetello (Toscana), Palude della Diaccia Botrona (Toscana) and Torre Guaceto (Puglia);
 - to review the conservation and wise use measures implemented since the designation of these sites for the Ramsar List and, specifically, since their inclusion in the Montreux Record (Register of Ramsar sites where the ecological character has changed, is changing, or is likely to change);
 - to make recommendations to the Government of Italy and the Ramsar Bureau concerning additional conservation and wise use measures which may be desirable; and
 - to make recommendations to the Government of Italy and the Ramsar Bureau on the possible removal of the sites from the Montreux Record prior to the 7th Conference of the Parties (Costa Rica, May 1999).
2. In addition, not as an official part of the mission, but with the full knowledge of the Ministry of Environment and of the authorities of Puglia Region, the consultant visited wetlands in the Manfredonia area, in order to make scientific observations (in the company of a staff member of INFS, the National Institute for Wildlife, and of local ornithologists) at the Saline de Margherita di Savoia Ramsar site and other neighbouring wetlands. A note on this visit, together with recommendations on management of the Ramsar site, and on the possible designation of other Ramsar sites in Puglia, is included in Appendix 3.

Programme

3. The programme of the mission was as follows:

Thursday 29 October:

- Travel Gloucester, UK – Gland, Switzerland.

Friday 30 October:

- Preparatory discussion of mission with Ramsar Bureau staff, principally Dr W.R. Phillips, Deputy Secretary General, and Mr T. A. Jones, European Regional Co-ordinator.

Sunday 1 November:

- Travel Gland – Rome.

Monday 2 November:

- Meeting at the Ministry of Environment, Rome, with officials of the Nature Conservation Service (NCS) of the Italian Ministry of the Environment.
- Travel to Castiglione della Pescaia with NCS officials, met by officials of the Province of Grosseto.

Tuesday 3 November:

- Visit to Palude della Diaccia Botrona, with NCS and Province of Grosseto officials.
- Visit to Laguna di Orbetello, with NCS, Province of Grosseto and WWF-Italia officials.
- Late evening flight Rome/Fiumicino-Brindisi.

Wednesday 4 November:

- Meeting in Brindisi on Torre Guaceto with officials of NCS, Region of Puglia and WWF-Italia.
- Visit to Torre Guaceto, with participants in the Brindisi meeting.
- Travel to Bari.

Thursday 5 November - Sunday 8 November:

- Visit to the Manfredonia wetlands.

Monday 9 November:

- Phone discussion of results of mission with Dr Cotta (NCS).
- Travel Manfredonia - Rome - Gland.

Tuesday 10 November:

- Debriefing with Ramsar Bureau staff in Gland (Secretary General Delmar Blasco and Mr T. A. Jones).
- Travel Switzerland – UK

4. The costs of the mission (travel, accommodation and fees) were met by the Ramsar Bureau. Generous hospitality was provided in Italy by the Italian hosts.

General background: implementation of the Ramsar Convention in Italy

Legal and administrative implementation of the Convention

5. Italy has traditionally been one of the most active Contracting Parties in implementation of the Convention. It was one of the earliest states to join the Convention (entry into force on 14 April 1977) and has accepted the Paris Protocol (entry into force on 27 July 1987). Italy has not yet deposited with UNESCO a formal document accepting the 1987 Regina Amendments to the Convention, though it has applied them in practice by contributing to the Convention's budget, attending Convention meetings and co-operating with the Bureau.
6. At the time of becoming a Contracting Party, Italy designated a considerable number of sites (18) for the Ramsar List, and has given a lead to other states by repeatedly adding new sites to the List, bringing the current total of Italian sites to 46. Italy has made active use of the Montreux Record by proposing that five of these Ramsar sites be included on the Record. This dynamic approach to site designation is further discussed in paragraphs 11 – 13.
7. Italy has played a crucial role in the development of the Convention, by hosting a number of essential conferences and meetings. Italy was host to the very first Conference of the Parties (COP) in 1980, held - significantly - in Cagliari, Sardinia, a region of particular wetland wealth. The importance of holding this first COP, at a time when the Convention was not widely known and urgently needed a first review of activities and planning for the future, can hardly be over-stated. The Cagliari Conference, in addition to a series of technical decisions, approved recommendations which led to the adoption of the 1982 Paris Protocol of Amendment and ultimately to the 1987 Regina Amendments.
8. Italy has also been extremely active in application of the Convention at Mediterranean level. The conference, held in 1990 at Grado in northern Italy, and jointly organized by IWRB (International Waterfowl and Wetlands Research Bureau), the region of Friuli-Venezia and the Ministry of Environment, led directly to establishment of the MedWet programme. MedWet, with generous financial support from the European Union, and headquarters in Rome provided by the Ministry of the Environment and WWF-Italia, carried out a series of valuable technical investigations, developed the Mediterranean wetland network, and led to the Venice Conference on Mediterranean Wetlands in June 1996.

9. The Venice Conference, one of the crucial wetland events during the Italian Presidency of the European Union, adopted a Declaration supporting a Regional Wetland Strategy for the Mediterranean based on the Ramsar Strategic Plan 1997-2002, previously adopted by the Ramsar Contracting Parties during their sixth COP in Brisbane, Australia, in March 1996. This was the first regional application of the Strategic Plan anywhere in the world, and has led to the development of the Mediterranean Wetland Committee, as a forum for discussion of pan-Mediterranean wetland issues and for application of the strategy at Mediterranean level.
10. Italy has made regular financial contributions to the Ramsar budget and has provided national reports to successive meetings of the COP, the most recent covering the period until June 1998.

The Italian approach to designation of wetlands for the Ramsar List

11. It is worth looking in greater detail into the process of designation of sites, and into the way it has evolved. Italy was the fifteenth state to become a Contracting Party in April 1977, a time when the European Directives on Wild Birds (79/409) and Habitats (92/43) had not yet been approved, let alone implemented. At that time, designation of Italian wetlands at international level had two particularly significant effects. On one hand it marked a change from the traditional practice of “bonificazione” (“improvement”) of wetlands, normally through their transformation into agricultural land, which has had such a serious effect on wetlands throughout the peninsula, notably in the 19th and early 20th centuries. On the other hand, there was also at that time considerable tension between the hunting fraternity and the nature conservation lobby (a tension which still persists until this day, though at a lesser level). The approach adopted by the Administrative Authority was to adopt the Ramsar emphasis of conserving wetland habitats. (At that time, the authority was, significantly, the “Bonificazione” Service of the Ministry of Agriculture. The Ministry of Agriculture continues to play a major role in management of wetlands in general and Ramsar sites in particular). This meant changes to the old policy of land “improvement”, and reduced tension between hunters and protectionists by emphasizing conservation of habitats rather than species. The moving figure in all these activities of the late 1970s and early 1980s, to whom the Convention owes a considerable debt of gratitude, was the late Dr Alberto Chelini who, as a respected figure in both the hunting and conservation communities, was well placed to implement a new approach.
12. This approach led to regular additions to Italy’s portfolio of Ramsar sites. Some Ramsar sites were given legal protection as a national reserve (“Riserva naturale del Stato”), some as a reserve established by the regional or provincial authorities (“Riserva naturale regionale”), while others had no specific protected status, but were covered by the provisions of the landscape protection law (the so-called “Galasso Law”, number 431 of 1985). Some were managed by non-governmental organizations, in particular WWF-Italia. As soon as agreement could be reached to give Ramsar status to a site, it was designated, thus leading during the late 1970s and early 1980s to rapid establishment of an extensive network of diverse sites.
13. Although no new sites have been listed since 1991, the idea of listing new Ramsar sites has not been abandoned. Indeed, the Ministry of Environment has commissioned a report from LIPU which identifies a series of potential new Ramsar sites, and also recommends rationalization of the existing List by amalgamation into a single Ramsar site of several smaller sites located close together, thus permitting improved management. This LIPU report uses ornithological data collected throughout Italy by INFS in the International Waterbird Census, co-ordinated by Wetlands International. These data (as recognized by Resolution VI.4 of COP6 in Brisbane) are an essential tool for application of the Convention’s 1% criterion for identification of potential Ramsar sites.

Management measures at Ramsar sites

14. In recent years the Italian authorities have placed greater emphasis on management measures at existing Ramsar sites, than on expansion of the network of listed sites. It was felt important to arrest the degradation of wetland sites, recognized at the Grado Conference, through stronger legal protection, dynamic management interventions and active restoration programmes. It is in this context that the Italian authorities have applied the Montreux Record.
15. The Montreux Record was formally established at the COP4, held in Montreux, Switzerland, in 1990, following concern at previous meetings of the COP over adverse change in the ecological character of listed sites throughout the world. On the basis of the Italian national report to the Montreux Conference, two Italian sites, both in Sardinia, were included in the Record: Stagno di Molentargius was included because of problems of pollution from urban sources, while Stagno di Cagliari was included because of pollution problems from surrounding industrial plant.
16. At the COP5 (Kushiro, Japan, June 1993), the Convention established its Scientific and Technical Review Panel (STRP), which was instructed to give particular attention to the Montreux Record. For the first STRP meeting (in Buenos Aires in early 1994) therefore, the Bureau wrote to all Contracting Parties, inviting them to comment on the existing Montreux Record and to suggest any further Ramsar sites in their territory which might benefit from inclusion in the Montreux Record. In response, the Director General of the Nature Conservation Service of the Italian Ministry of the Environment suggested, in a letter of 18 October 1993, that three additional sites be included in the Montreux Record: Laguna di Orbetello, Palude della Diaccia Botrona and Torre Guaceto. After discussions in Buenos Aires, the Ramsar Bureau wrote to NCS on 3 February 1994 to confirm that STRP had supported inclusion of these three sites in the Montreux Record.
17. At COP6 (Brisbane, Australia, March 1996) a revised procedure was approved under Resolution VI.1 for inclusion and removal of sites from the Montreux Record. A questionnaire, to be completed by the Contracting Party in whose territory the site was situated, was developed for completion before any Ramsar Advisory Mission was carried out. The questionnaire gives details of measures taken by the Contracting Party concerned, in order to redress actual or possible changes to the ecological character of the Ramsar site. The Italian authorities submitted questionnaires in respect of the three sites visited to the Ramsar Bureau before the mission took place. These questionnaires are attached in full in Appendix 1.

The three Montreux record sites: description & recommendations

Laguna di Orbetello

(NB. The author's comments on this site are based not only on the brief visit on 3 November, but on a series of much longer visits made in previous years in relation with the MedWet project).

18. Description of the site. The Orbetello Lagoon is situated on the southern coast of the Tirrenian Sea in Tuscany, some 100 kms north of Rome, and covers about 4500 hectares. In scenic terms it is spectacular, being embraced between two broad sandbars (the Tombolo di Gianella in the north, and the Tombolo de Feniglia in the south) linking the mainland to the Monte Argentario ("Silver Mountain"), which in fairly recent geological history was an offshore island. In the centre of the lagoon, on an island linked to the mainland by a causeway, is the historic city of Orbetello. The depth of the lagoon is only one to two metres, and the water is generally brackish. The vegetation around the edges includes Mediterranean macchia, with cork oak and umbrella pine woodland. The fish fauna is made up mainly of marine species, while the water bird fauna includes good numbers of wintering ducks, waders and flamingos, and a variety of typical Mediterranean breeding species (including a small colony of Greater Flamingo *Phoenicopterus ruber*, which nested in 1994). The critically endangered Slender-billed Curlew *Numenius tenuirostris* has been recorded in small numbers in the early 1990s.
19. Criteria for international importance. The Montreux Record Questionnaire indicates that the site meets Ramsar criteria 1a, 3b and 3c. It meets 1a since it is "a particularly good example of a natural or near-natural wetland, characteristic of the appropriate biogeographical region", in this

case as the most important continental lagoon on the coast of the Tirrenian Sea. It meets 3b since it supports “substantial numbers of individuals from particular groups of waterfowl, indicative of wetland vales, productivity or diversity”, holding more than 10,000 waterfowl, among them important species like Black-winged Stilt *Himantopus himantopus*, Avocet *Recurvirostra avosetta* and Slender-billed Curlew. The questionnaire claims that Orbetello also meets 3c (“regularly supports 1% of the individuals in a population of one species or subspecies of waterfowl”), and mentions nesting Shelduck *Tadorna tadorna* and Greater Flamingo *Phoenicopterus ruber*. It seems unlikely that the breeding numbers of either species actually reach 1% levels, and the INFS summary of midwinter water bird censuses 1991-95 indicates that Orbetello does not meet the 1% winter criterion for any species. However numbers of wintering flamingos have been increasing at Orbetello recently, and may well now reach the 1% level.

20. Note on the Maremma wetlands. It is important to note that Orbetello is one of the largest remaining vestiges of the formerly much more extensive Maremma wetlands. The Maremma is the coastal plain of southern Tuscany between Piombino and Orbetello, with the calcareous hills inland, and the major rivers that flow through them, notably the Ombrone and the Bruna. As an area once famed for its unhealthy mosquito populations, it was a natural target for drainage (“bonificazione”) operations in the nineteenth and early twentieth centuries. Three of the major remaining wetland areas – Lago di Burano, Laguna di Orbetello and Palude della Diaccia Botrona – have already been declared Ramsar sites. There are two other significant wetland areas: the Trappola marshes at the mouth of the River Ombrone in the Maremma Natural Park, and the Scarlino marshes, near Piombino. The Maremma wetland complex, encompassing a variety of different wetland types, is best considered as a whole rather than as a series of different sites. The five sites vary subtly in character: Burano is a typical Mediterranean coastal lagoon behind a line of sand dunes (comparable, say, with Sidi Bou Rhaba in Morocco or the Korba Lagoons in Tunisia); La Trappola is an estuarine marsh; Diaccia Botrona and Scarlino are freshwater reed marshes, much affected by drainage; while Orbetello is a brackish lagoon in connection with the sea, reminiscent of the Lake of Tunis. Migratory birds using the wetland complex undoubtedly move from one site to another, according to which best fulfils their immediate needs at the time. There is therefore considerable scope for managing them as a unit rather than as individual, separate sites. Together, they represent an important point on the migration route of migratory birds moving (generally in a north-east/south-west direction) between Africa and Europe. The other complexes of comparable importance in Italy, all situated along this axis, are the Sardinian wetlands, the Po Delta wetlands, and the Venice/Grado lagoons.
21. Designation as a Ramsar site. Orbetello Lagoon was declared a Ramsar site at the time of Italian accession to the Convention in 1977. However, not the whole lagoon was declared a Ramsar site, but only the northernmost section, a triangular area of 800 hectares, encompassing a very small National Nature Reserve covering about 30 hectares, and the WWF “Oasis” which includes land alongside the lagoon. This area (including the historic Casetta Gianella on the Gianella sandbar) has been managed by WWF-Italia for many years, and Orbetello is undoubtedly one of the best-managed wetland reserves in Italy. It has also become an extremely important centre for environmental education and awareness, given its convenient situation as an excursion site, within easy reach of Rome. (WWF also manages the nearby Ramsar site of Burano). Practically the whole of the lagoon, with the adjoining pine woodland, has become a provincial Nature Reserve since Ramsar designation, under legislation approved by the Province of Grosseto.

22. Inclusion in the Montreux Record. The reason for inclusion of Orbetello on the Montreux Record was the occurrence in summer 1992 and 1993 of a major algal bloom, caused by excessive nutrient accumulation in underwater sediments and lack of oxygen in the water. This caused fish to die and plants to rot, and released extremely unpleasant smells for inhabitants of Orbetello and the many tourists who visit the area. Such events are of course not uncommon in summer in such very shallow Mediterranean lagoons (similar problems for example regularly occurred at the Lake of Tunis before remedial measures were taken), and have frequently been recorded in the past at Orbetello during very hot summers, when the effect of evaporation is strongest. The 1992 and 1993 outbreaks were however extremely severe and, as noted in the Montreux Record Questionnaire, were undoubtedly exacerbated by inflow over the years of waste water and sewage from Orbetello.
23. Current situation. A decision was taken to develop a major long term clean up project (costing 30 million ECUs), in line with the European Union Directive 76/319 on water quality and water treatment, and administered by an Extraordinary Commission involving several different ministries and with special powers. Details of the measures taken were presented in the meeting in Rome on 2 November by NCS officials. They included: removal of the algae, by mechanical skimming of the surface; improvement of water circulation in the lagoon by dredging of the three main outlets to the sea and by pumping water around the lagoon; and improvement of the waste water treatment and discharge facilities at Orbetello. The excellent presentation made in Rome was verbal, and I would suggest that the Italian authorities deposit with the Ramsar Bureau any available written documentation on the remedial measures.
24. No major fish die-offs have been recorded in the lagoon since 1994, though privately run aquaculture continues in the southern lagoon, and the lagoon is fished by professional fishermen. There was general agreement by provincial officials and WWF managers that the measures had been successful, and my own observations in recent years concur with this view. This being the case I have no hesitation in recommending that Laguna di Orbetello should be removed from the Montreux Record.

Recommendation 1: in the light of the remedial measures successfully carried out already, Laguna di Orbetello should be removed from the Montreux Record.

25. A number of further measures should still, in my opinion, be taken at Orbetello: extension of the Ramsar site; specific management issues; and co-ordination of management of Orbetello with that of other Maremma wetlands. Details of these issues are given in paragraph 40 – 49.

Palude della Diaccia Botrona

26. Description of the site. Palude della Diaccia Botrona (the Diaccia and Botrona marshes, sometimes named in Italian by the diminutive “Padule” rather than “Palude”) is situated about 40 kms north of Orbetello, at the mouth of the River Bruna, near the small fishing port and tourist centre of Castiglione della Pescaia. They form part of the Maremma wetlands (see paragraph 20). In Roman times the area was a lake, Lake Prylis covering 12,000 hectares, but over the years, partly by sedimentation, partly by reclamation, the lake surface has been filled in. The two marshes (Botrona is on the northern side of the central “Molla” drainage channel, Diaccia is to the south), covering about 1050 hectares, are the only part of the formerly much more extensive marshlands which were not drained. They are, of course, the most difficult area to drain, being the wettest, nearest the river mouth. Particularly under the rule of the Dukes of Lorraine in the early nineteenth century, much drainage activity was carried out, and a sophisticated system of drainage ditches and sluices was developed, managed from the Casa Ximenes near the confluence of the Molla Canal and the River Bruna. Since about 1960, when attempts to drain the area were finally abandoned, these sluices have fallen into disuse, allowing some seawater to enter the mainly freshwater marsh. An extensive reed bed – a wetland habitat scarce in this part of Italy – developed. During the 1970s and 1980s the area was managed to for waterfowl hunting. Upstream (ie. north-east) of the marshes is an area of agricultural land, where irrigation is not practised. Between the marsh and the sea is another attractive Mediterranean pine wood.

At the eastern end of the marsh is a small hill, the Isola Clodia, which was actually an island in Roman times and has ruins of archaeological interest. It provides a natural vantage point at the eastern end, as does the Casa Ximenes in the west. During the MedWet project, Diaccia Botrona was a centre for an active wetland education programme, with considerable attention devoted to public awareness in nearby Grosseto.

27. Criteria for international importance. The Montreux Record Questionnaire indicates that Diaccia Botrona meets Ramsar criteria 1a (“good representative example of a natural wetland characteristic of its region”), 2b (of special value for maintaining the genetic and ecological diversity because of the quality and peculiarities of its fauna”) and 3b (“regularly supports substantial numbers of waterfowl, indicative of wetland values, productivity or diversity”). Under 3b it is noted that up to 300 species occur, notably four species of heron (Little Egret *Egretta garzetta*, Grey Heron *Ardea cinerea*, Purple Heron *A. purpurea* and Bittern *Botaurus stellaris*) and Marsh Harrier *Circus aeruginosus*. Bittern, Europe’s rarest resident heron, is the symbol of the reserve, and very much the flagship species. The new Ramsar Information Sheet recently completed in Italian by the provincial administration of Grosseto suggests a slightly different series of criteria, including 1d (“example of a type of wetland rare or unusual in the biogeographic region”), but interestingly including 4a (“significant proportion of indigenous fish representative of wetland benefits and/or values”). A 1990 WWF Toscana document on Diaccia Botrona notes that the marshes have the richest fish fauna of the Maremma, both as regards quantity of fish and the large variety of fish species present. The INFS summary of winter water bird censuses indicates that Diaccia Botrona (which it calls “Padule di Castiglione”) did not meet the 1% criterion for any wintering species from 1991-95, though the number of Teal *Anas crecca*, at an average of 5225, is the highest in Italy.
28. During the visit on 3 November, the area was clearly very attractive to wintering water birds. The marsh was by no means completely covered with reeds, though good stands were present, and there were extensive open water areas, where the water was no doubt slightly brackish. A good variety and number of flamingos, geese, ducks, raptors and waders were feeding and resting, notably in these pools.
29. Designation as a Ramsar site. Diaccia Botrona was the most recent of the Italian Ramsar sites to be declared, in April 1991. Although designation had been planned for some time, it was delayed by a number of unclarities over the legal status and land use of the site. As noted above, the drainage channels had been left in disrepair, it had been managed for some time as a hunting area, and in the centre of the marsh was a private intensive fish farm, established well before Ramsar designation. At the time of Ramsar listing it had no specific protected status, though it was covered by the broader landscape regulations of the Galasso law 431/85.
30. Inclusion in the Montreux Record. This unclear legal, management and protection situation was the fundamental reason why Diaccia Botrona was included in the Montreux Record. The Montreux Record Questionnaire indicates that adverse change to the marsh flora and fauna has come about through salinization, caused by poor water circulation, lack of maintenance of the sluices and water inlets, and intrusion into the wetland of salt water after use in the intensive fish farm.
31. Current situation. There has been intensive activity, both at governmental and non-governmental level, in recent years to improve the protected status and management of Diaccia Botrona. Reference has already been made to WWF Toscana’s 1990 project proposal and to the activities carried out there (largely by WWF-Italia) under MedWet. At government level, the provincial authorities of Grosseto have commissioned a detailed study for remedial work, so extensive that it really amounts to a restoration project. Entitled “Executive project for the improvement of water circulation inside the Diaccia Marsh”, it was carried out by a distinguished team of university specialists. It envisages restoration of the sluices at Casa Ximenes, strict regulation of the water released from the fish farm, and opening of breaches in embankments along some drainage canals to enable water to spread over the marsh more freely. The Casa Ximenes, a historic building from the middle of the nineteenth century, has been completely rebuilt and restored, and will serve as a wonderful welcoming centre for visitors. The sluices have not yet been repaired, nor have the other hydrological measures been carried out, but funds for these purposes have in the very recent past been formally approved by the Provincial Authorities of Grosseto. In addition, the legal situation

has been clarified by the formal establishment in 1997 of a provincial nature reserve (document published in the official newspaper of the Provincial Administration of Grosseto). The Grosseto provincial police, based in the Casa Ximenes, carry out regular surveillance of the area to prevent illegal hunting and make surveys of water birds present.

32. During the meeting in Rome on 2 November, and during the field visit on 3 November, I was much impressed by the dynamism and sense of purpose of all the officials concerned. The keen involvement of Mr Sammuri, the Environmental Assessore for Grosseto, who is also Vice President of the Province, is clearly an important factor. Mr Sammuri accompanied us during the field visit, and he is supported by dedicated and experienced staff. Particular emphasis is laid on the need to control the quality of water released from the fish farm, and to ensure that all such water in future passes through a sedimentation pond, before being pumped back into the sea and not, as at present, into the marsh. Strictly speaking, Diaccia Botrona should remain on the Montreux Record until the programme has been carried out. However, given the excellent progress already made, the evident desire to progress further, I recommend that Diaccia Botrona be removed from the Montreux Record, and that regular progress reports be presented to the Bureau. It would be desirable for another formal Bureau visit to be made to the site in one or two years' time, when the work should be complete.

Recommendation 2: Palude della Diaccia Botrona should be removed from the Montreux Record, though the Italian authorities should provide the Ramsar Bureau with progress reports on the restoration work, and the Bureau should arrange another site visit when these works have been completed.

33. A number of further measures should still, in my opinion, be taken at Diaccia Botrona: establishment of a buffer zone to the nature reserve; specific management issues; appointment of a site manager; and co-ordination of management of Diaccia Botrona with that of other Maremma wetlands. Details of these issues are given in paragraph 42 – 49.

Torre Guaceto.

34. Description of the site. The Torre Guaceto Ramsar site is an area of 940 hectares on the Adriatic coast of Italy, about 20 kms north of Brindisi, in the Region of Puglia, partly on the territory of the commune of Brindisi, partly on that of Carovigno. It is a popular site for holiday and beach excursions for the people of Brindisi, and takes its name from an ancient watch tower, overlooking the sea from a vantage point on the low limestone cliffs, which are interspersed with sand dunes and with *Salicornia* and *Suaeda* vegetation. Behind the stone and sand coastal formation is a wet area, originally fed by freshwater streams coming from inland, but much affected in the past by attempts to drain the area for agriculture. This wetland area has been overgrown by reeds and freshwater plants, because the inflow channels have become silted up, resulting in a reduction of fresh water supply. Offshore, there are beds of *Poseidonia* and a rich marine flora. The site is also of archaeological importance as the site of a Neolithic settlement. The site, and particularly the watch tower, has been used by the Puglia branch of WWF as a centre for environmental education. The presence and action of WWF in the last few years has undoubtedly played a major role in the conservation of the site.
35. Criteria for international importance. The Montreux Record Questionnaire indicates that Torre Guaceto qualifies under Ramsar criteria 1d (“specific type of wetland, rare or unusual in its region”) and 2a (“supports an appreciable assemblage of rare, vulnerable or endangered species or subspecies”). Under 2a the plants *Salicornia fruticosa* and *Suaeda* are mentioned, together with the migrant shorebird Dotterel *Eudromias morinellus*. It seemed to me, after the visit on 4 November that, if it qualifies as a site of international importance, it is rather under criterion 1a, as a representative sample of the fast-disappearing coastal wetlands of the Italian Adriatic. While migrant Dotterel may occur, there seems little evidence of the presence of an “appreciable assemblage”.
36. Designation as a Ramsar site. Torre Guaceto was one of the sites added to the Ramsar List in May 1981. At that time it has no specific nature reserve status, though it was covered by the Galasso landscape protection law 431/85. A marine reserve, covering the area offshore, has since been established.

37. Inclusion in the Montreux Record. Torre Guaceto was included in the Montreux Record in 1994, because of fears that a campsite would be set up by a private land owner in or near the Ramsar site, and because of the difficulty of preventing damage to the area's natural values (fires, wood-cutting, illegal buildings) by visitors to the nearby beaches.
38. Current situation. At the meeting in the Ministry of Environment in Rome on 2 November, I was given information on plans for Torre Guaceto. The area is included among the sites where the National Committee on Protected Areas has decided to establish national reserves ("Riserva naturale statale"). The decision has been published in the Official Journal of the Italian Republic for 13 September 1997, which means that financial resources will be available for establishment of the reserve. A map published in the Official Journal shows expanded boundaries, so that the future reserve will be larger than the existing Ramsar site. The meeting in Brindisi on 4 November brought together the various local authorities involved, and discussed the technical work intended. It is clear that, with these new plans, there is no longer any threat of construction of a campsite, and that disturbance and damage by visitors can be much more easily controlled. This control is likely to be exercised by the State Forestry Service ("Corpo Forestale dello Stato). The technical work, as at Diaccia Botrona, really amounts to a restoration plan, aimed at recreating values lost before Ramsar designation.
39. As at Diaccia Botrona, this site should probably, in a strict interpretation of the terms of the Montreux Record, be maintained on the record until the Reserve is formally declared and the technical work carried out. However, it is clear that the immediate problems which led to its inclusion on the Montreux Record are no longer a real threat. The proposed technical work, as at Diaccia Botrona, is much more than simple remedial action to remedy a problem, but a large scale restoration project. I therefore recommend that the site be removed from the Montreux Record, but suggest that reports on administrative and technical progress be provided to the Ramsar Bureau, and that another site visit be arranged in due course.

Recommendation 3: Torre Guaceto should be removed from the Montreux Record, though the Italian authorities should keep the Ramsar Bureau informed about progress in establishing a state nature reserve and in technical restoration work, and a further visit by Bureau representatives should be arranged when the work is complete.

Additional recommendations on management of Orbetello, Diaccia-Botrona and Torre Guaceto

Laguna di Orbetello

40. As noted in paragraph 21 above, the Ramsar site at Orbetello includes only the northern tip of the lagoon, with the adjoining land surface. The southern boundary of the present Ramsar site is therefore a highly theoretical line across the lagoon, which has no practical or ecological significance. This situation has been in effect since the establishment of the Ramsar site, with an area of 800 hectares, in 1977. In the intervening period, the Province of Grosseto has established a provincial nature reserve covering about 4500 hectares, practically the whole of the water surface of the lagoon. The Ramsar site is clearly influenced by events occurring outside its narrow boundaries (eg. water levels or disturbance), and not only the Ramsar site, but also other parts of the lagoon are used as a feeding and breeding area by many water birds. It is clearly much more realistic to manage a wetland area when the whole of the water surface is controlled by the same manager. There was universal agreement among those to whom I spoke that it would be sensible to extend the boundaries of the Ramsar site to include the whole of the water surface, together with appropriate land areas surrounding the lake.
- It was considered that, given the existence of a provincial nature reserve, such a move should not cause major problems in terms of administration or land ownership. As part of this extension, measures should be taken to regulate sailing on the lagoon, giving due weight to the needs of professional fishermen, but also establishing no-sailing areas around islands where water birds,

especially flamingos and Black-winged Stilts (a bird of particular interest in Italy since its vernacular name is Cavaliere d'Italia!), might nest.

Recommendation 4: The boundaries of the Laguna di Orbetello Ramsar site should be extended as soon as possible, to include the whole water surface of the lagoon and surrounding land areas, with appropriate measures to restrict sailing on the lagoon particularly near breeding islands.

41. It was pointed out to me that one part of the lagoon, currently outside the Ramsar site, is of particular value as a feeding and resting area for many water birds. This area is made up of two bays (usually known as the “Stagnino” and “Stagnone”), on the eastern shore of the lagoon. These bays are however greatly disturbed by illegal hunters and by building of illegal houses around their fringes. As a result, the ecological potential of the area is not fully reached. I suggest that particular care be taken to conserve this area. I also understand that the remaining mounds of algae collected from the surface of the water have been collected near the Stagnone, and that it would be desirable to dispose of these mounds as soon as possible.

Recommendation 5: Particular attention should be given to conservation of the important “Stagnino” and “Stagnone” sections of the lagoon, and arrangements should be made to dispose of the remaining mounds of algae stored there.

Diaccia Botrona

42. The current wetland area, covering about 1050 areas, is bordered to the east, beyond the embankment marking the boundary of the reserve, by an area of reclaimed farmland (“bonificazione”) extending up to the Affacciatoio embankment and the San Leopoldo canal. The 1990 WWF-Toscana project suggests that this area (where irrigated agriculture is not practised) should be included in the reserve. It currently has no natural value, but could be considered as a buffer zone, and might one day be restored.

Recommendation 6: The area to the east of the reserve should be established as a buffer zone for the reserve, with the possibility of restoration at some future period.

Maremma wetlands

43. As noted in paragraph 20, the five main Maremma wetlands – Burano, Orbetello, Ombrone/La Trappola, Diaccia Botrona and Scarlino – are complementary to one another, and best viewed as a wetland complex including a variety of wetland types. An observation of a Greater Flamingo seen on 3 November gives an indication of the way that birds use the Maremma wetlands. The bird had been marked as a chick with an inscribed plastic ring (CHLA) at the Camargue breeding colony in France in summer 1995. Since then, it had been recorded at Orbetello in December 1996, the Ombrone mouth in January 1997, Diaccia Botrona in May and June 1997, Orbetello again in April 1998, and now once again in November 1998 at Diaccia Botrona. It is clearly spending its three or four juvenile (or “kindergarten”) years in the Maremma wetlands, moving from one site to another to find the best conditions. Provision of suitable habitat during the juvenile years is clearly just as important as provision of breeding habitat.

44. Three of the Maremma wetlands (Burano, Orbetello and Diaccia Botrona) are already designated as Ramsar sites, and there have been plans for some time to declare La Trappola as a Ramsar site. The letter of 10 May 1991 from the Director of the Nature Conservation Service to the Ramsar Bureau which announces the designation of Diaccia Botrona actually indicates that the procedures for designation of La Trappola (announced at the Grado Conference) were under way.

The site is included in the Maremma Natural Park, so there should be no administrative difficulty in listing it. It would qualify as a representative example of wetlands of the region (Criterion 1a), and is listed by INFS as the only site in Italy meeting the 1% criterion for numbers of wintering Greylag Goose *Anser anser* (Criterion 3c). This goose migrates through Italy, from breeding grounds in Central Europe (notably Poland, Czech Republic and Austria) to wintering grounds in North Africa (especially Ichkeul in Tunisia and El Kala in Algeria, both Ramsar sites). In recent years, numbers have increased, in the Maremma wetlands in general and at La Trappola in particular, no doubt owing to improved management and conservation measures. Ramsar listing of their preferred habitat in Italy would be highly desirable, creating a chain of wetlands along the migratory route. La Trappola is also one of the potential Ramsar sites mentioned in the LIPU report on possible Ramsar sites.

45. At the same time it would be worth investigating whether the Scarlino marshes might meet the criteria and be designated as a Ramsar site.

Recommendation 7: The Trappola Marshes at the mouth of the River Ombrone should be designated as a Ramsar site, and the possibility of designating the Scarlino Marshes should be investigated.

46. The complementary nature of the five main Maremma wetlands means that their management features have much in common, and should be viewed as a whole. It would be highly desirable to hold regular and detailed consultations on the objectives of management in the five sites, and on how to achieve these objectives. Management plans could be co-ordinated, and those responsible for management could exchange experiences. Thus, for example, practical discussions could be held on just how much reed bed and how much open water is desirable at Diaccia Botrona, in the light of availability of these wetland types at other wetlands in the Maremma region.

Recommendation 8: Management of the main Maremma wetlands should be co-ordinated, through creation of a structure to co-ordinate management objectives and plans, and to exchange experiences between site managers.

Appointment of site managers at individual wetlands

47. Laguna di Orbetello, like the nearby Lago di Burano, has for many years had the benefit of a permanent site manager, whose tasks are to oversee management of the reserve and to deal with inquiries from the flow of visitors. Similarly at Torre Guaceto, WWF has provided an information service, though the opportunities for direct management action have as yet been limited. These site managers have been provided by WWF in the past and the success of these two reserves is a credit to WWF, to the individual managers, and to the authorities who have delegated to the site managers the important task of managing the reserves on a day-to-day basis. At Diaccia Botrona, the provincial police are already effectively carrying out a surveillance role, though they do not for the present have management responsibilities.
48. Strange to relate, appointment of such site managers is the exception rather than the rule in Italian Ramsar sites, despite their evident effectiveness. Perhaps it should not be viewed as strange, since appointment of site managers is the exception rather than the rule in Ramsar sites in many European countries. In northern Europe, however, appointment of such managers is customary at larger reserves. (The text of the Ramsar Convention does indeed say, in Article 4.5, that the Contracting Parties “shall promote the training of personnel competent in the fields of wetland research, management and wardening”). It seems very obvious to me that each of the five main Maremma wetlands, together with Torre Guaceto, needs a permanent site manager/warden, with day-to-day responsibility for execution of the management plan, surveillance/wardening and for receiving and guiding visitors. No doubt technical staff from national, regional or provincial administrations will be available during the execution of restoration projects like those at Diaccia Botrona (as they were during the works at Orbetello), but there is a need for a permanent manager once these major projects have been carried out. They would be among the participants in the management consultations on the Maremma wetlands mentioned in Recommendation 8.

49. A number of possibilities for appointing such site managers might be envisaged. They might be directly appointed by the State in state reserves, or by the Province in regional reserves. They might be linked to a local structure, such as the Maremma Natural Park. Or the task could be carried out on behalf of the administration by a non-government body or association such as WWF.

Recommendation 9: Permanent site managers should be appointed to deal with the day-to-day management and with reception of visitors at each of the main Maremma wetlands and at Torre Guaceto, building on the excellent work already carried out by WWF managers.

Additional general recommendations on the implementation of the Convention in Italy

50. The Contracting Parties to the Ramsar Convention have on many occasions recognized the need for co-ordination, within each member state, of activities carried out under the Convention. This requires contacts between the official Administrative Authority responsible for implementation of the Convention and the many other technical ministries involved in planning of land and water use and in management of wetlands. It also requires close links between central and regional authorities, where regional authorities have responsibility for environmental issues and nature conservation. Incorporation of the work of non-governmental bodies and associations is also essential. The Ramsar Strategic Plan (in Action 8.1.9) calls for promotion of National Ramsar Committees "to provide the opportunity for input from, and representation of, governmental and non-governmental organizations, key stake holders, indigenous people, the private sector and interest groups, and land use planning and management authorities".
51. Much responsibility in Italy is devolved to regional and provincial authorities, particularly in environmental and conservation matters. Furthermore, co-ordination between the Administrative Authority in Rome and the regions in application of the Convention has often been limited or difficult in the past. During the present mission, I was much impressed, in the few regions visited, with the active desire of regional and provincial authorities to be more closely involved in the application of the Convention. I am sure that the same positive relationships could be developed with other regions. It therefore seems to me that establishment of an Italian National Ramsar Committee would help greatly in implementation of the Convention in Italy. Membership should certainly include other technical ministries (especially the Ministry of Agriculture), representatives of national scientific institutions such as INFS, representatives of each Region, and the principal non-government bodies such as WWF-Italia and LIPU. The Committee might meet once or twice a year, particularly before important Convention meetings such as the COP or European or Mediterranean regional meetings

Recommendation 10: An Italian Ramsar Committee should be established by the Ministry of Environment, with participation from other central technical ministries, regional authorities, national scientific institutions and non-governmental organizations, to promote improved implementation of the Ramsar Convention in Italy.

52. I understand that the Ministry of Environment is organizing a meeting on 3 December 1998 to discuss, among other items, revised Ramsar Information Sheets on Italian Ramsar sites. This meeting would present an excellent opportunity to progress with establishment of a National Ramsar Committee.
53. Among issues to be discussed in the National Ramsar Committee would be general questions of implementation of the Convention, together with any particularly important site issues. The following paragraphs make a number of suggestions on possible topics. One obvious issue is the formal acceptance of the Regina Amendments of 1987, which, as noted in paragraph 5 above, Italy has not yet accepted, even though it has in practice applied the amendments by paying national contributions and working closely with the Bureau.

Recommendation 11: Italy should carry out the legal steps to make formal acceptance of the 1987 Regina Amendments to the Ramsar Convention as soon as possible.

54. Another issue to be discussed within the National Committee would be listing of new Ramsar sites, and rationalization of the existing portfolio. A number of major wetlands which very easily fulfil Ramsar criteria have not yet been designated, (notably in the Po Delta and the Venice/Grado lagoons) and management could be improved by consolidation of a number of existing sites. This has been recognized by the Ministry of the Environment, which has already commissioned a report on the subject from LIPU. A National Ramsar Committee could study this report and promote its implementation.
55. Most of the technical comments in the present report refer to management of listed Ramsar sites. It is inevitably true that management issues will be the principal concern at other Italian Ramsar sites. It is therefore suggested that the National Ramsar Committee should give a lead on the management of Ramsar sites in Italy. The two most important points would be the development of a management plan for each Ramsar site (or group of nearby sites), and the appointment of a resident site manager for each Ramsar wetland. During the mission, much time was devoted to discussion of management techniques. I pointed out that the Convention has formally adopted "Guidelines for management planning for Ramsar sites and other wetlands", published in the Ramsar Convention Manual, Second Edition, Appendix 14. While the guidelines are themselves fairly detailed, I emphasized that the basic principles, summarized in the Structure Chart which is appended to the present report as Appendix 2, has the virtue of great simplicity. The management planning process is based on three fundamental steps: firstly description of the site, secondly establishment of objectives for management derived from the description, and thirdly actions to achieve the objectives. An important additional proviso is that the description needs regular revision in the light of actions carried out, which may in turn affect the objectives and the actions to be carried out; it is therefore a circular process. Recommendation 9 calls for the appointment of site managers at the Maremma wetlands and Torre Guaceto, and this principle should be extended to all Ramsar sites in Italy.

Recommendation 12: Priority should be given, through the National Ramsar Committee and/or other suitable methods, to promoting the establishment and application of management plans for each Ramsar site in Italy, with the appointment of a resident site manager at each site.

56. As noted above, the Ministry of Environment has already been submitted to the Ramsar Bureau a report on Ramsar activities up to June 1998. A number of important activities in the field of wise use of wetlands that have occurred since 1998 (notably the work on Ramsar Information Sheets, the present mission and its implications for inclusion of sites on the Montreux Record, and the important meeting to be held on 3 December). I would therefore suggest that the Ministry of the Environment prepare a short addendum for submission to the Ramsar Bureau, well before COP7 in Costa Rica in May 1999, giving details of these and any other major actions.

Recommendation 13: The Ministry of Environment should present an Addendum to the National Report for COP7, informing the Ramsar Bureau and the other Contracting Parties of developments in application of the Convention in Italy since June 1998.

Appendix 1
Text of the Montreux Record Questionnaires
for Laguna di Orbetello, Palude della Diaccia Botrona and Torre Guaceto
submitted by the Italian Ministry of the Environment
to the Ramsar Convention Bureau
before the mission.

Appendix 2
“The Structure of the Management Planning Process”
(page 144 of the Ramsar Convention Manual, Second Edition)

Appendix 3

Notes on a visit to wetlands in the Manfredonia area (Puglia) made in association with the Ramsar Advisory Mission.

1. As noted in paragraph 2 of the report, I made a visit to the wetlands in the area of Manfredonia (Foggia Province, Puglia Region) from 5 to 8 November. The visit was not part of the Ramsar Advisory Mission, though it was carried out with the full knowledge of the Ministry of Environment and the Puglia Regional authorities. It was concerned with one wetland designated as a Ramsar site and other potential Ramsar sites. Many of the issues covered in the advisory mission arose again, so I thought it appropriate to include some comments and recommendations, in the hope that they will be of value to the Italian authorities at national and regional level.
2. The principal aims were to visit the Manfredonia wetlands, to study Greater Flamingo and to look for Slender-billed Curlew. I was accompanied throughout by Dr Nicola Baccetti of INFS, and for much of the time by Mr Giuseppe Albanese, a LIPU member from Manfredonia. I am most grateful to both of them for all their kindness. I am also grateful to Mr Fabio Modesti of the Puglia Region, who drove me from Brindisi to Manfredonia. On Sunday 8 November, I attended the opening of the new visitor centre at the Margherita di Savoia salt pans with Messrs. Albanese, Baccetti and Modesti; the formal inauguration was carried out by Dr Lappollo, Environmental Assessor of the Foggia Province, and Prof Danilo Mainardi, President of LIPU. On this occasion I also met Dr Giovanni Maili, head of the Parks Office in the Puglia Region.

Manfredonia wetlands – general

3. The Manfredonia wetlands are situated on the broad coastal plain, about 50 kms in length, between the towns of Manfredonia and Margherita de Savoia, on the Adriatic Coast of the Region of Puglia. They are watered by streams and rivers flowing down from the Apennines. Manfredonia itself is just south of the Gargano peninsula, a fascinating area of limestone karst formations, with a very rich and individual flora and fauna, protected in the Gargano National Park. (The Gargano park includes the Lake of Lesina and Varano, which meet Ramsar criteria of international importance and are suggested as Ramsar sites in the LIPU report. I unfortunately did not have time to visit these sites). The whole of the coastal plain (rather like the Maremma) was once a wetland, but much of it has now been drained and reclaimed for agriculture, and its intensive market garden products, notably artichokes, are famous throughout Italy. The coast supports rich fisheries, and inflow from the rivers will undoubtedly be of importance – as elsewhere in the world – in maintaining these fisheries.
4. In the central part of this coastal plain, which is the lowest in altitude, are the Saline (salt works) of Margherita di Savoia. As in other parts of the Mediterranean, the large evaporating pans intended for salt production are a great attraction to water birds, since they provide excellent feeding grounds throughout the year. They are generally protected from disturbance, and therefore also provide a favoured nesting area. However, there are also a number of wetlands still in a near-natural state. These include the extensive *Salicornia* and *Suaeda* plains around the Saline and the Frattarolo marshes at the mouth of the River Candelaro. In addition, there are a number of artificial wetlands of great interest: the former ricefields of Daunia Risi, which have developed into a huge reed bed; the fish ponds of Ittica Carapelle (also known as Terra Apuliae); and the San Floriano Marsh, managed for hunting. The Saline di Margherita di Savoia are protected as a state natural reserve, outside the National Park. Frattarolo and Daunia Risi are both included in the Gargano National Park, and in addition Frattarolo is classified as a separate nature reserve.

Saline di Margherita di Savoia

5. The salt works were designated a Ramsar site of 3871 hectares in 1979. They are at present owned and managed by the state salt monopoly, under the guidance of the Ministry of Agriculture. It is possible that the state monopoly may be relinquished, and the area sold to private owners, at some time in the near future. Access is strictly limited, so that disturbance is in theory limited, but there is a strong local hunting tradition, and considerable problems with illegal hunters.

6. The Saline are extremely impressive in terms of their bird populations. This is undoubtedly by far the most important wetland along the Adriatic Coast south of the Po Delta, and of particular interest and importance because of its easterly position, which establishes links with migrant birds coming from much further to the east. They support impressive numbers of wintering waterfowl, and INFS indicates that between 1991 and 1995 they met Ramsar Criterion 3c (the 1% criterion) for Shelduck, Wigeon and Avocet. During my visit, numbers of Shelduck (a few hundred) and Wigeon (a few thousand) were lower than usual. (This may have been because the visit was rather early in the wintering season, or because water levels were, according to my companions, much lower than usual). Avocet numbers on the other hand were most impressive, of the order of 7,000. Many other species were also present, and I have no doubt that the site also meets Criterion 3a by regularly supporting more than 20,000 waterfowl. Some of species which occur in good numbers (though below the 1% level) are indicative of wetland values and diversity, so the site no doubt also fulfils Criterion 3b. In recent years, it site has become famous for its flamingo flock, which is discussed below.
7. Management of the water bird populations of an artificial wetland, whose primary purpose is production of salt, is of course difficult, and a delicate balance has to be met between commercial and nature conservation interests. Changes in water level will affect salt production as well as ecological value. Nevertheless, as in other salt works of the Mediterranean (which have recently been the subject of an interesting publication by the Tour du Valat), it should be possible to find a reasonable compromise.
8. At Margherita di Savoia, as at many other Italian Ramsar sites, there is no site manager. The most urgent management problem is clearly surveillance: we saw vast numbers of used cartridge cases in and around the site, even though access is theoretically restricted, and we observed one hunter using a (very lifelike!) whistle to attract curlews. Hunting of all species of curlew is forbidden under Italian law, and this is one of the very few places in the world where the critically endangered Slender-billed Curlew has been seen in recent years. There is therefore a clear need to reinforce management and surveillance. There are local guards, but they need reinforcement by much more frequent visits from the Ministry of Agriculture's Corpo Forestale del Stato.
9. Inland of the protected area there are considerable expanses of *Suaeda* fields in a natural state, which, miraculously, have not been reclaimed for agriculture (though they are gradually being reclaimed). It would be highly desirable to extend the reserve to conserve as much as possible of this extremely attractive natural vegetation.

Frattarolo and Daunia Risi

10. Frattarolo is an area of natural marshland at the mouth of the River Candelaro, with adjoining reed beds. It has not been reclaimed for agriculture and retains its original function as a flood plain which can take up floods when the river is in spate. It has reserve status and holds good numbers of water birds. In winter 1994/95 a small flock of some 17 Slender-billed Curlews wintered there, one of the largest flocks noted in recent years of a species on the verge of extinction. They have not been seen there since, though the number of observers is not high, but might easily return in future. To our chagrin, we were unable to find any during our visit.
11. Quite close to Frattarolo are the Daunia Risi former rice fields. These are no longer cultivated as rice fields and have developed into an extensive reed bed, undoubtedly the largest by far in this part of Italy. Until recently they were managed by a hunting syndicate, but now form part of the Gargano National Park. It seems that the surveillance by the hunting managers was more effective than present wardening, and that improved surveillance by the Corpo Forestale is required here too.

12. Alongside the reed bed is an area of broad agricultural fields, once the habitat of Italy's only regular wintering flock of White-fronted Goose *Anser albifrons* ("Lombardella" in Italian), a species coming from further east than the Greylag Goose. These have not been recorded in recent years, but if greater protection was given, they might well return. Alternatively, the area might well be colonized by the Greylags which are becoming increasingly common in other parts of Italy with improved protection.
13. The three areas are close together, and so form a natural management unit. They undoubtedly meet Ramsar criteria, and the LIPU report suggests they should be designated as Ramsar sites. Since they already enjoy protected status this should not raise administrative or ownership problems. LIPU also suggest inclusion in the Ramsar site of Ittica Carapelle and San Floriano.

Flamingos

14. Until 1995 there were few records of flamingos in the Manfredonia area. The INFS summary of midwinter censuses 1991-95 shows negligible numbers there in January 1994 and 1995. In early 1995 however, a small flock of flamingos arrived at the Saline, and further arrivals occurred during the year. In 1996 and in subsequent years, these birds have surprised students of the flamingo by establishing a breeding colony in the salt pans, breeding not merely in the usual spring/summer period, but laying eggs and successfully raising young in autumn.
15. Over the last twenty years, young flamingos have been marked with plastic rings at their breeding colonies in France, Spain and Italy (both Molentargius in Sardinia and Orbetello in Tuscany). These rings can be read with a telescope at distances of up to about 300 metres. Rather few rings have been read at Margherita di Savoia, and so one of the main objects of the visit was to read rings in this flamingo flock.
16. During our visit, the flock numbered about 1350 birds (well above the figure of 800 required to meet the Ramsar 1% criterion). It included at least 100 birds in juvenile plumage, born in 1998, and some one or two year old birds. It was extremely difficult (much more difficult than in other flamingo haunts in Italy or Tunisia) to read the rings, partly because the salt pans are so large, partly because the flamingos were extremely shy – perhaps because of disturbance by hunters. In the end however, we were successful in making an accurate survey of the flock. Only a very small percentage of the birds were ringed. We read ten rings and saw one other which we failed to read, and are convinced that we found at least 90% of the rings present. All the rings were of French origin, the oldest from 1987, and none of the birds had been ringed since 1995.
17. Thanks to rapid responses from the Tour du Valat ringing station in the Camargue, we know that three of the birds had, in the years between ringing and 1995, made visits to the eastern Mediterranean, one to Greece, one to Turkey, and one to both Greece and Turkey. This is a phenomenally high percentage, given the very few ring readers in these two countries. It indicates that the Manfredonia flamingo flock has strong links with eastern Mediterranean populations, where there are currently no flamingo ringing schemes. It is likely that the French ringed birds mixed in winter with birds of eastern origin and were attracted back to colonies in Turkey. The lack of subsequent observations of the ten ringed birds in France supports this hypothesis (though one was recorded in Spain!). It would appear that the colony was established in 1995, has received few additions since then, and is self sustaining by producing its own young. The evolution of this population will be a fascinating study in future.
18. As an interesting sidelight to the eastern origin of these flamingos, we saw among the many gulls on the beach at Manfredonia two colour-ringed gulls. One was a Black-headed Gull *Larus ridibundus* that had been ringed as a chick at a Hungarian colony in summer 1998. The other was an immature Mediterranean Gull *Larus melanocephalus* which had been ringed in July 1998 as a chick in the colonies of the Gulf of Tendrovsk (also a Ramsar site!) on the eastern shores of the Black Sea in Ukraine. This interesting observation emphasizes the links between Adriatic wintering waterbirds, the eastern Mediterranean and the Black Sea.

Recommendations

19. I take the liberty of offering some recommendations to the Italian authorities, based on my visit to the Manfredonia wetlands. In most cases they echo and strengthen the recommendations in the main report.
- I **recommend** that a management plan be drawn up and applied for the Ramsar site at Saline di Margherita di Savoia, taking account of possible future changes in ownership of the site, and of the need to balance the requirements of salt production and nature conservation.
 - I **recommend** that, in close co-operation with the Corpo Forestale del Stato, this management plan should give particular attention to preventing illegal hunting, notably of the critically endangered Slender-billed Curlew, not only in the Saline di Margherita di Savoia but also in surrounding wetlands.
 - I **recommend** that consideration be given to extension of the protected area and Ramsar site to include natural stands of *Suaeda* in fields around the salt pans.
 - I **recommend** that urgent consideration should be given to designation of Frattarolo, Daunia Risi and the surrounding goose habitat as a Ramsar site, and that, in any case, a management plan for the area be drawn up and applied.
 - I **recommend** that all the wetlands of the Manfredonia area (including Ittica Carapelle and San Floriano Marsh) be considered as a wetland complex, and that their management plans be co-ordinated.
 - I **recommend** that permanent resident site managers be appointed to carry out the management plans at both the Saline di Margherita di Savoia Ramsar site and the potential future Ramsar site of Frattarolo and Daunia Risi.
 - I **recommend** that studies of the flamingo flock continue, including the possibility of ringing young birds, if this can be achieved without excessive disturbance to the nesting birds.

Appendix 4: Persons met

1. Ministry of the Environment

Nature Conservation Service

Via Assisi 163

00185 Rome

Division I, Protected Areas

- Dr Francesco GIGLIANI, Head of Division (Dr Gigliani made the presentation on restoration of Orbetello)
- Dr Sandro LAPOSTA (Dr Laposta deals with the establishment of the Torre Guaceto reserve)

Division II, Flora and Fauna

- Dr Sandro RUSSI, Head of Division Tel: (00.39) 06.784.662.01 Fax: (00.39) 06.784.662.77
- Dr Maria Grazia COTTA Tel: (00.39) 06.784.662.04 Fax: (00.39) 06.784.662.77
- Dr Giampaolo Rallo
Valle Averte Venice Lagoon Natural Reserve
Via Pignara 4
30010 Venice – Campagnalupia
Tel: (00.39) 041.518.068 Fax: (00.39) 041.518.377

Dr Russi and Dr Rallo have been members of the Italian delegation at many Ramsar Conferences, and were closely involved in the Grado Conference and MedWet work. Dr Rallo acts as NCS advisor on wetlands. Dr Cotta and Dr Rallo accompanied me on the field visits to Orbetello, Diaccia Botrona and Torre Guaceto.

2. Province of Grosseto

- Dr Giampiero Sammuri
Vice President of the Province of Grosseto, and Assessore for Modernizzazione e Riquilificazione, Sviluppo e Tutela del Territorio
Via Cavour 16
58100 Grosseto
Tel: (00.39) 0564.484762
- Mr Ilio Boschi
- Mr Valerio Ferri
- Mr Paolo Stefanini

Messrs. Boschi, Ferri and Stefanini are members of the technical staff of the Grosseto Province's assessorate for the environment. Mr Boschi is a former Director of the Maremma Natural Park. Mr Boschi and Mr Ferri made all the arrangements for us during our visit to Grosseto Province. Mr Stefanini is in charge of the Diaccia Botrona restoration project. All three accompanied us on field visits to Diaccia Botrona and Orbetello. Dr Sammuri accompanied us during the field visit to Diaccia Botrona, as did the Mayor (Sindaco) of Castiglione della Pescaia.

3. WWF Toscana

- Mr Fabio Cianchi Tel: (00.39) 0564.898829
- Mr Luigi Calchetti

Mr Cianchi is the resident manager for Lago di Burano, and is also closely involved in the management of the WWF "oasis" at Orbetello. Mr Calchetti has recently retired as the manager at Orbetello, but is still very much concerned with management of the site.

4. Region of Puglia

- Fabio Modesti
Assessorato Ambiente
Ufficio Parchi
Piazza Aldo Moro 37
70122 Bari Tel: (00.39) 080.540.4239 Fax: (00.39) 080.540.4296
Email: **Error! Bookmark not defined.**

Mr Modesti took part in the meeting on Torre Guaceto in Brindisi, and in the field visit. He kindly accompanied me to Manfredonia, and attended the opening of the LIPU visitor centre at the Margherita di Savoia salt pans on 8 November. The head of the Parks office for the Puglia Region, Dr Giovanni Miali, also took part in the opening.

5. Commune of Brindisi

- Dr Magno
Capo Dipartimento Ecologia
- Dr Niccoli
Assessore Ecologia, Ambiente, Igiene urbana

Drs. Magno and Niccoli took part in the meeting on Torre Guaceto in Brindisi on 4 November

6. Commune of Carovigno

- Dr Rosa Maria Simone
Commissario Prefittizio
- Arch. Taddeo

The Commune of Carovigno currently has no Town Council, since new elections are due, and is governed by a Commissaryship, represented by Dr Simone, who attended the Brindisi meeting with Arch Taddeo, and took part in the field visit to Torre Guaceto.

7. WWF Puglia

- Dr Gino Cantoro
Segretario WWF PUGLIA
Delegazione Puglia
Via Boccapianola 1
70122 Bari Tel/Fax: (00.39) 080.521.0307
- Dr Antonio Fiume

Dr Cantoro made all the arrangements for our stay in Puglia. He and Dr Fiume attended the meeting in Brindisi and took part in the field visit to Torre Guaceto.

8. Province of Foggia

- Dr Lapollo, Assessore for the Environment in the Province of Foggia, was one of the speakers at the opening of the LIPU centre at Saline di Margherita di Savoia.

9. LIPU (Liga Italiana Protezione Uccelli)

- Prof Danilo Mainardi, President of LIPU
- Mr Giuseppe Albanese
Via Aldo Moro 54
71043 Manfredonia (FG)

Prof Mainardi was one of the speakers at the opening of the LIPU centre at Margarita di Savoia. Mr Albanese is one of the local LIPU members who guided us in Manfredonia, and was also at the opening of the visitor centre

10. INFS (Istituto Nazionale per la Fauna Selvatica)

- Dr Nicola Baccetti
INFS (National Institute for Wildlife)
Via Ca' Fonracetta 9
40064 Ozzano Emilia (BO) Tel: (00.39) 051.651.2111 Fax: (00.39) 051.796628
Email: infszumi@iperbole.bologna.it

Dr Baccetti accompanied on the visit to the Manfredonia wetlands.

Appendix 5: Bibliography

- Amministrazione provinciale di Grosseto (1996): “*Progetto di salvaguardia e recupero ambientale della riserva Diaccia – Botrona nei comuni di Grosseto e Castiglione della Pescaia*”. Cyclostyled report, Grosseto, Italy.
- Amministrazione provinciale di Grosseto (1997): “*Reglamento Provinciale della Riserva Natural – Diaccia Botrona – art. 16 della L.R. 49/95 e articoli della L. 394/91*”. Copia di Deliberazione di Consiglio Provinciale, cyclostyled report, Grosseto, Italy.
- Gazzetta Ufficiale della Repubblica Italiana (1997): “*Approvazione del’aggiornamento, per l’anno 1996, del programma triennale per le aree naturali portette 1994-1996*”. Official newspaper of the Italian Republic. Supplement to No. 214 of 13 September 1997.
- Lega Italiana Protezione Uccelli (1998): “*Ramsar Italia, Azioni di sostegno al Segretario Nazionale di Ramsar, Sottoprogetto Verifica designazioni siti Ramsar*”. Cyclostyled report, LIPU, Parma, Italy.
- Ministero dell’Ambiente (1998): “*Implementation of the Ramsar Convention and of the Ramsar Strategic Plan 1997-2002 in particular, during the period since the National Report prepared in 1995 for Ramsar COP6 and 30 June 1998*”. Cyclostyled report. Ministry of the Environment, Rome, Italy.
- Ramsar Convention Bureau (1996): “*Proceedings of the 6th Meeting of the Conference of the Contracting Parties, Brisbane, Australia, 19-27 March 1996: resolutions & recommendations*”. Ramsar Convention Bureau, Gland, Switzerland.
- Ramsar Convention Bureau (1996): “*Proceedings of the 6th Meeting of the Conference of the Contracting Parties, Brisbane, Australia, 19-27 March 1996: Strategic Plan 1997-2002*”. Ramsar Convention Bureau, Gland, Switzerland.
- Ramsar Convention Bureau (1997): *The Ramsar Convention Manual: A Guide to the convention on Wetlands (Ramsar, Iran) 1971*”. Second edition. Ramsar Convention Bureau, Gland, Switzerland.
- Sadoul N, J G Walmsley & B Carpentier (1998): “*Salinas and Nature Conservation*”. Conservation of Mediterranean Wetlands No. 9, MedWet. 96 pages, Tour du Valat, Arles, France.
- Serra L, A Magnani, P Dall’Antonio & N Baccetti (1997): “*Risultati dei censimenti degli uccelli acquatici svernanti in Italia, 1991-1995*”. Biol. Cons. Fauna, 101: 1 –312. INFS, Bologna, Italy.
- WWF Toscana (1990): “*Progetto Riserva naturale Diaccia Botrona*”. Cyclostyled report, WWF Toscana, Firenze, Italy.
- Talluri P, & F Corsi (1997): “*La Diaccia Botrona Un Paradiso in Maremma*”. 63 pages, F&F Foto Edizioni, Grosseto, Italy.
- Tirone, P, (1994): “*Maremma*”. Istituto Geografico DeAgostini, 96 pages, Novara, Italy.