

# 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:

20.8.98

For office use only.

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Designation date

Site Reference Number

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## 2. Country:

Italy

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## 3. Name of wetland:

Lake of Burano Natural Reserve

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## 4. Geographical coordinates:

42° 23' 30"N - 11° 22' 30"E

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**5. Altitude:** (average and/or max. & min.). 0-8 m upon the sea level **6. Area:** (in hectares) 410 ha

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## 7. Overview:

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

The lake is one of the few relics of the ancient large coastal wetlands of the Maremma (south Tuscany). It is a nesting site for many important species of birds, like *Circus pygargus*, *Aythya nyroca*, *Ixobrychus minutus*, *Merops apiaster*, and an important resting site for many migratory species.

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## 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

Please now rank these wetland types by listing them from the most to the least dominant: 1) Coastal brackish lake; 2) Dune systems

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## 9. Ramsar Criteria:

 (please circle the applicable criteria; see point 12, next page.)

1a - 1b - 1c - 1d / 2a - 2b - 2c - 2d / 3a - 3b - 3c / 4a - 4b

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

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10. **Map of site included?** Yes      Cartography: IGMI n° 135 II SE

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11. **Name and address of the compiler of this form:** Dr. Paolo Macedone via Bresadola  
54,00171 Roma

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12. **Justification of the criteria selected under point 9.** The site is a coastal pond, relic of an ancient large lake. The lake of Burano has a maximum depth of 2.10 m, in relation to the sea level. It is characterized by a low salinity (12-13‰), a constant flow of freshwater and a not very large surface: for these reasons the lake is very different from any other brackish lake and pond along the Tyrrhenean coast. In spite of its size, we can identify different benthic areas. The site is of special value because of its natural dune plant communities, elsewhere destroyed or threatened along the coast, and its high diversity of species of plants and animals (for instance, 28 species of Carabidae, Coleoptera). Many migratory species of waterfowl are supported by the site. Amongst them: *Podiceps nigricollis*, *P. cristatus*, *P. grisegena*, *P. auritus*, *Phalacrocorax carbo*, *P. pygmaeus*, *Casmerodius albus*, *Egretta garzetta*, *Ardea cinerea*, *A. purpurea*, *Ciconia ciconia*, *Phoenicopterus ruber*, *Platalea leucorodia*, *Ixobrychus minutus* (nesting), *Anser anser*, *A. albifrons*, *Aythya nyroca* (nesting), *A. ferina*, *Anas crecca*, *A. strepera*, *A. acuta*, *A. clypeata*, *A. querquedula*, *Circus pygargus* (nesting), *C. aeruginosus*, *Falco tinnunculus* (nesting), *F. vespertinus*, *F. eleonora*, *Aquila clanga*, *A. pomarina*, *Pandion haliaetus*, *Pernis apivorus*, *Himantopus himantopus*, *Charadrius alexandrinus* (nesting), *Pluvialis apricaria*, *P. squatarola*, *Sterna hirundo* and *S. caspia*.

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13. **General location:** 45 km SE of GROSSETO (nearest Provincial Administrative town); 150 km S of FLORENCE (Regional Administrative city); 100 km NW of ROME.

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14. **Physical features:** Its origins are mostly natural: during the Pleistocene a small sea gulf was dammed by sand bars and by tectonic raisings. A wide basin was newly built thanks to the waters of two rivers. A new raising process and recent draining works have reduced the pond surface. Geologically, the area is a recent Holocenic formation. The sand dune is permeable and allows underground circulation of waters between the sea and the lake; the waters circulate through a small mouth, as well. The sand dune is eroded by the sea, particularly at the north and south east of the lake. We can deduce a yearly average water inflow of 300 l/s. In normal condition, the waters coming from the drainage canals have a salinity level up to 5.4 ‰. The freshwater from the two streams contributes with 25 l/s; more freshwater comes from the swamp of Levante. The temperature of the water is always very similar to the temperature of the air, at the same moment. The pH is between 7.5 and 9.2. Between February and May the salinity is 5- 8 ‰; then it increases between June and September (12-13‰). The saturation point for oxygen is about 100 %, with a maximum of 157.3 % in February in the central area. There is a very low pollution, mainly due to the washing away of farming soil. The maximum depth is 2.10 m (see point 12). The sand dunes are characterized by a high percentage of iron. The climate is dry-Mediterranean: temperature varies from -6°C, in January, to +35°C, in August. The humidity of the air is generally high, thanks to the strong sea winds (with speed of over 5m/s).

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15. **Hydrological values.** See point 14.

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16. **Ecological features.** Making a transect from the sea towards the inland, we find the following main ecological features and communities:

- The **beach** which is covered periodically by the high tide and permanently by organic debris.
- A consolidated **dune** which can be separated into four main zones: the **antedune** colonized by *Ammophila littoralis*, *Eryngium maritimum*, *Otanthus maritimum*, *Calystegia soldanella*, *Anthemis maritima*, *Euphorbia paralias*, *Cakile maritima*, *Medicago marina*, *Pancreatium maritimum*, *Cyperus kalli*.  
On the **recent dune**, which is 8 m upon the seal level, predominate *Juniperus oxycedrus macrocarpa* and *J. phoenicea*; then, *Myrtus communis*, *Phyllirea angustifolia*, *Rhamnus alaternus*, *Pistacia lentiscus*, *Erica multiflora*. This thick bush predominates in the backdune as well, altogether with oaks, *Quercus ilex*, *Q. suber*, *Q. frainetto*, *Q. pubescens*. On the **older dune**, characterized by a flat top (6 m on the sea), the vegetation is dominated by the same bushes, altogether with *Cistus* spp., *Cytinus hypocistis*, and *Romulea columnae*.
- The **lake banks** are colonized by some of the dune bushes, but mainly by *Phragmites australis*, *Typha latifolia*, *Spartina* spp., *Scirpus maritimus*, *Tamarix gallica*, *Iris lutea*, *Juncus maritimus*, *Salicornia europaea*, *Limonium angustifolium*, *Salix* spp., *Populus tremula*, *Orchis palustris*.
- *Phragmites australis* colonizes the **lake** for several meters far from the banks, and the islets formed by organic debris. The benthonic flora comprehends two flowering plants, *Potamogeton pectinatum* and *Ruppia spiralis*, and some macroalgae as *Ceramium codii* and *Boergesenella fructiculosa*.
- The **inland** zone is deputed to periodica farming. *Pinus pinaster* and some *Eucaliptus* spp. have been introduced, but they are not invasive and now reducing. The vegetation is mostly native and the environment is natural.

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17. **Noteworthy flora.** *Petrorhagia velutina*, *Malcolmia ramosissima*, *Carex extensa*, *Cladium mariscus*, *Euphorbia paralias*, *Euphorbia palustris*, *Romulea rollii*, *Orchis palustris* (vulnerable: Red Data Book), *Plantago cornuti*, *Samolus valerandi*, *Hydrocotile vulgaris*. Particularly good examples of native plant communities.

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18. **Noteworthy fauna.** Substantial population of *Eurynebrya complanata* (Coleoptera), *Ceratophyus rossii* (Coleoptera), *Lelia coenosa* (Lepidoptera), all good environmental indicators. *Zerynthia polyxena* (Lepidoptera, rare). *Emys orbicularis* (Reptilia, Chelonia; vulnerable); *Testudo hermanni* (Reptilia, Chelonia; protected under the Washington Convention). Fishes: *Anguilla anguilla*, *Liza aurata*, *Liza ramada*, *Liza saliens*, *Mugil cephalus*. - *Dicentrarchus labrax* (economical importance). *Hystrix cristata* (Mammals, Rodents); maybe the otter (*Lutra lutra*) is still present. Waterfowls: see point 12. More than 10,000 Anatidae and Rallidae during the migratory season.

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19. **Social and Cultura values:** Education; scientific research (many researches have been conducted in this site and many more are on the agenda).

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20. **Land tenure/ownership of:** a) Sacra Society which lets the area to the Worldwide Fund for Nature, Italy. b) Sacra Society + Capalbio Municipality.

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21. **Current land use:** a) Agriculture, irrigation, professional fishing. No residents, except the wardens. b) Agriculture, irrigation, tourism. Human population in the surroundings is small and sparse.

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22. **Factors adversely affecting the site's ecological character.** Sudden changes in water level, due to diversion of water or to closing the gate at the mouth which allows superficial circulation of waters between the lake and the sea. Vegetation advancing into the lake and consequent reduction of surface. ( See also point 14).

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23. **Conservation measures taken.** Ramsar site (D.M. 657, May 9, 1977); Natural Reserve (D.M. Aug. 13,1980); High Public Interest Area (D. Interministeriale, Dec.9,1965). No hunting. Fishing restricted to owners. Boating strictly reserved to owners and managers. The site is WWF Reserve since 1967. Economical activities (agriculture) allowed in inland area only: the area between the lake and the seaside is strictly protected. Management plan has been presented to the Dept. of Environment, but it has not been officially approved.

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24. **Conservation measures proposed but not yet implemented.** A request of enlargement of the Reserve has been presented by the Government and by the Regional authority.

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25. **Current scientific research and facilities.** Seasonal ringing on waterfowls. A study on the dune vegetation (University of Siena). An ecosanitary study about influenza viruses in Anatidae (INFS: National Institute for the Wild Fauna). A research about the dune fungi (University of Siena).

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26. **Current conservation education.** Information booklets; visitors center (in preparation); birdwatching hides, survey tower; butterfly garden; nature trail; school visits Monday-Saturday (September to April). Telecom project: an interactive website about Burano is on line ( See point 19)

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27. **Current recreation and tourism.** Birdwatching; one-day tourism; summer camps organized by WWF Italy in the surroundings. Frequency: 6000 visitors per year (1997).

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28. **Jurisdiction.** a) REGIONE TOSCANA, Province of Grosseto; b) Department of Environment. Municipality: Capalbio.

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29. **Management authority.** WWF Italy, Via Garigliano, 57 - 00198 Roma - Italy.

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