Information Sheet on Ramsar Wetlands

(RIS)

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

1. Date this sheet was completed/ updated:

March 2002

2. Country: BULGARIA

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Designation date

Site Reference Number

3. Name of wetland:

ROPOTAMO COMPLEX

4. Geographical coordinates:

42°19'N / 27°45'E

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

214.7 m a.s.l.

6. Area: 5,500 ha

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

A unique area in terms of national and international biodiversity. Riverine-type forests are typical for the complex and unique for Europe. The Complex cover extremely diversity of habitats in such a limited area: river mouth, sand dunes, freshwater and brackish lagoons, rocky shores, broad-lived deciduous and riparian (longos-type) forests, fjords and sea inlets.

The protected areas of the Ropotamo Complex are bordered to the east by the Black Sea, to the west by the central water-main for the South Black Sea coastal area and a high-voltage power line, to the north by "Dyuni" Holiday Village and to the south by the town of Primorsko. The area includes 7 protected areas of different level of protection: Ropotamo Reserve, including Arkutino Swamp and the Estuary of the River Ropotamo -1,000.7 ha, the wetland area of "Velyov Vir" Maintained Reserve - 13.6 ha; Alepou Marsh Natural Monument - 166.7 ha;. Stomoplo Marsh Protected Area - 40.0 ha; Natural monument "Sand-dunes between town of Primorsko and Perla locality" – 24.00 ha; Natural monument "Sand-dunes at Alepou locality" – 12.00 ha; Natural monument "Rocky Formations, Fjords and Monk-seal Cave at Cape Maslen nos" – 17.6 ha.

8. Wetland Type (please circle the applicable codes for wetland types; in the present document, the "Ramsar Classification System for Wetland Type" is found on page 9)

marine-coastal: $\mathbf{A} \bullet \mathbf{B} \bullet \mathbf{C} \bullet \mathbf{D} \bullet \mathbf{E} \bullet \mathbf{F} \bullet \mathbf{G} \bullet \mathbf{H} \bullet \mathbf{I} \bullet \mathbf{J} \bullet \mathbf{K} \bullet \mathbf{Zk}(a)$

inland: $L \bullet \mathbf{M} \bullet N \bullet O \bullet P \bullet Q \bullet R \bullet Sp \bullet Ss \bullet Tp$ Ts • U • Va • Vt • W • Xf • Xp • Y • Zg • Zk(b)

human-made: $1 \bullet 2 \bullet .3 \bullet 4 \bullet 5 \bullet 6 \bullet 7 \bullet 8 \bullet 9 \bullet Zk(c)$

Please now rank these wetland types by listing them from the most to the least dominant:

Xf, F, D, A, E, J, K, M

9. **Ramsar Criteria**: (Please circle the applicable Criteria; the *Criteria for Identifying Wetlands of International Importance* are reprinted beginning on page 11 of this document.)

 $1 \bullet 2 \bullet 3 \bullet 4 \bullet 5 \bullet 6 \bullet 7 \bullet 8$

Please specify the most significant criterion applicable to the site: 1

10. Map of the site included? YES

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

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

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

Criterion 1

The Ropotamo is a representative complex of ecosystems of river mouth, coastal lagoons, western Black sea sanddunes, riparian forests and rocky sea coast, not affected by the human activities. The riparian (longos-type) forest are unique for Europe.

Criterion 2

- Of the bird fauna 7 globally threatened species, included in the IUCN Red List are found in the Complex: Pygmy Cormorant (*Phalacrocorax pygmeus*), Dalmatian Pelican (*Pelecanus crispus*), Red-breasted Goose (*Branta ruficollis*), Ferruginous Duck (*Aythya nyroca*), Marbled Teal (*Marmaronetta angustirostris*), Lesser Kestrel (*Falco naumanni*) and Cornckrake (*Crex crex*).
- ➤ 249 bird species are included in the Annexes of the Bern Convention.
- ➤ 73 species of birds are included in the RDB of Bulgaria, including 21 rare species (6 breeding) and 46 endangered species (22 breeding).

- ▶ 5 species of fish are included in the RDB of Bulgaria as "threatened".
- 15 species of Reptiles and Amphibians are protected under the Bern Convention; 2 species are included in the European Red List; 6 species are included in the World Red Data Book.
- Of the mammals found in the Complex, 7 species are included in the IUCN Red List (1996) as 'vulnerable': Rhinolophus hipposideros, R. euryale, R. blasii, Myotis bechsteini, M. emarginatus, M. capaccini and Nanospalax leucodon, while 'critically endangered' is Monachus monachus;
- ➤ 7 species are included in the European Red Data List.
- ➤ 14 species are protected under the Bern Convention.
- > 10 species are included in the RDB of Bulgaria.
- Amongst the rare invertebrate species in the Complex the following species are included in IUCN Red List: Astacus astacus, Carabus intricatus, Formica pratensis var. nigricans, Hirudo medicinalis, Maculinea arion, Niphargus valachicus/bulgaricus, Platyla orthostoma and Rosalia alpina.
- 97 plant species included in the RDB of Bulgaria are recorded in the Complex (83 'rare', 14 'endangered'), two of them are included in the IUCN Red List and CORINE, and one is in the Bern Convention.

Criterion 3

- Five species of plants are Bulgarian endemics: Silene frivaldskyana, Opopanax bulgaricum, Pyrus eleagrifolia, ssp. bulgarica, Linum tauricum, ssp. bulgaricum, Verbascum glanduligerum.
- > 12 Balkan endemics, and 25 are relict species are found in the Complex. Other species of interest includes *Crocus olivieri, Tulipa hageri, Pancratium maritimum.*
- ➢ 5 fish species, with different levels of endemism, inhabit the River Ropotamo;
- Amongst the rare, endemic and relict invertebrate species in the complex are the following: Endemic species Bulgarica varnensis, Helicella spiruloides, Orcula zilchi, Pelethiphis anoxiae, Paraleptophlebia lacustris, Bembidon rivulare euxinum, Laemostenus cimmerius weiratheri and Microlestes apterus;
- Relict species Laura cylindrace, Oxychilus urbanskii, etc.

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

Bourgas District, Primorsko Municipality, Sozopol Municipality. Nearest towns: Primorsko and Sozopol. About 50 km south of the District Centre, Bourgas. The protected areas of the Ropotamo Complex are bordered to the east by the Black Sea, to the west by the central water-main for the South Black Sea coastal area and a high-voltage power line, to the north by "Dyuni" Holiday Village and to the south by the town of Primorsko.

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

7 protected areas, formally united as the Ropotamo Complex. The complex comprises the following wetland sites: <u>1. Estuary of the River Ropotamo</u>. Includes the final 7 km of the river before it reaches the sea. The only large river in the Complex, with a length of 48.5 km and catchment area of 248.7 km². Annual surface run off 3-5 (l/s)/km² (winter 1.0-1.5 (l/s)/km²; spring 1.0-2.5 (l/s)/km²; summer below 0.4 (l/s)/km²; autumn 0.5-1.0 (l/s)/km²). The highwater period lasts about 4 months. There is less than 100 t/km/year of floating silt.

<u>2.Arkutino Swamp</u> Freshwater lagoon, with a total area of 1.16 km^2 , and open water area of 0.03 km^2 . Minimum depth: *c*. 0.5 m. In continuously dry periods, the swamp dries up completely. In periods of high water, the water flows into the sea through a natural channel. Seawater does not intrude into the swamp, and thus does not affect the salinity of the wetland.

<u>3. Alepu Marsh</u> 50-100 m in width and separated from the sea by a sandbar; average depth *c*. 1 m (0.8-2.0 m), catchment area 10-12 km². When the water level is low, the connection between the northern and southern parts of the swamp is exposed, dividing the swamp into two separate water bodies. The natural connection of the basin with the sea is facilitated by a small sluice. Seawater can cross the sandbar only during low or reverse hydraulic gradients. <u>4. Stomoplo Marsh</u> Situated *c*. 50-100 m west of the sea, the marsh is separated from the sea by a strip of sand and dunes. Openwater area *c*. 0.6 km²; catchment area 6 km². A canal with a sluice-gate connects the marsh to the sea. The water level in the marsh fluctuates by up to 0.7 m. A dyke divides the wetland into two parts – north and south, but when the water level is increased the two parts of the swamp may be connected hydrologically. 5. "Velyov vir" Maintained Reserve. Former waterbed of Ropotamo River. 15. Hydrological value: (groundwater recharge, flood control, sediment trapping, shoreline stabilisation, etc.)

Due to the fact, that it is representative lagoons on the Western Black Sea Coast, the hydrology of the region is determined to be of value itself.

16. Ecological features: (main habitats and vegetation types)

The following are the main habitats in the Complex of Ropotamo (according to the Classification of the Palearctic Habitats): Bulgarian coastal dense forests – 44.4322 Thracians subcontinental thermophyl oak forests - 47.76A Euxine- Thracians forests - 47 76 A 1 Longos forests – 44.4322 Thracian forests - 47.76 A 11 Eastern undergrowths /thickets/ of Phillyrea -32.21 A 4 Static dunes – 16.22 B Western Static dunes – 16.22 B1 South-Western Black Sea static dunes –16.22 B 11 Rocky associations - 11.29 Fiords -12.5Mediterranean Black sea coastal rocks and rocky beaches, sea caves -12.7Mediterranean-static - 18.16 Rock and rocky beaches, static rock associations – 18.222 Western static grass-rock associations. – 18.22212 Black sea coastal rocks with thickets of Ficus carina, Osyris alba, Tasminium fructicans, Paliurus spina christi and the grass Melica ciliata, Melica albus – 18.22212 Mediterranean tall grasses and wormwood steppes -34.6Greek-Balkan andropogonic grass steppes - 34.6344 Fresh water lake -22.1Marsh with a canal to the sea -21.1Freshwater lake deeply eutrophicated – 22.13 Associations of : Nymphaea alba -22.43112, Typha angustifolia - 53.132, Phragmites australis - 53.11111, Carex riparia-53.213, Salvinia natans - 22.415, Sparganium erectum- 53.143, Hydrocharis morsus range - 22.412, Lemna, Wolffia, Riccia -22.411, Salix cinerea - 44.162, Dense forests - 44.4322; Puccinella distans - 15.A 2131, Zostera noltii-11.333.

Associations of Ceratophyllum demersum, Salicornia europaea, Juncus gerardi, Trapa natans, Utricularia australis, Artemisia maritima, Beckmania eruciformis, Juncus maritimus, etc.

A unique area in terms of national and international biodiversity. Riverine-type forests are typical for the complex and unique for Europe.

Representative Western Black Sea Coastal dune-vegetation

17. Noteworthy flora: (indicating, e.g., which species/communities are unique, rare, endangered, or biogeographically important, etc.).

Five species are Bulgarian endemics: Verbascum glanduligerum, Silene frivaldskyana, Opopanax bulgaricum, Pyrus eleagrifolia, ssp. bulgarica, Linum tauricum, ssp. bulgaricum.12 are Balkan endemics, 25 are relict. Other species of interest include Crocus olivieri, Tulipa hageri, Pancratium maritimum, Leucojum aestivum and Nymphaea alba. Of European concern are the following species: Aurinia uechtrizianum, Gypsophpylla tecirae, Corispermum nitidum, Cirsium bulgaricum.

18. Noteworthy fauna: (indicating, e.g., which species are unique, rare, endangered, abundant or biogeographically important; include count data, ect.).

Mammals: 21 species have been recorded in the Complex, 7 of which are included in the IUCN Red List (1996) as 'vulnerable': *Rhinolophus hipposideros, R. euryale, R. blasii, Myotis bechsteini, M. emarginatus, M. capaccini* and *Nanospalax leucodon;* well maintained population of *L. lutra;* 1 "critically endangered' species - *Monachus monachus* (Ropotamo Complex is former breeding and potential area for the restablishment of the population). 7 species are included in the European Red Data List. 14 species are protected under the Bern Convention. 10 species are included in the RDB of Bulgaria.

Birds: 260 species of birds have been recorded in the complex. 73 species are included in the RDB of Bulgaria, including 21 rare species (6 breeding) and 46 endangered species (22 breeding). 226 species are protected by Order No. 729/1986 of the MoEW (123 breeding species).

9 globally threatened species, included in the IUCN Red List are found in the Complex: Pygmy Cormorant (*Phalacrocorax pygmeus*), Dalmatian Pelican (*Pelecanus crispus*), Red-breasted Goose (*Branta ruficollis*), Ferruginous Duck (*Aythya nyroca*), Marbled Teal (*Marmaronetta angustirostris*), Spotted Eagle (*Aquila clanga*), Red Kite (*Milvus milvus*), Lesser Kestrel (*Falco naumanni*) and Corncrake (*Crex crex*). 249 species are included in Bern Convention. The complex is a breeding site for *Podiceps cristatus*, *P. grisegena, Ixobrychus minutus*, *Nycticorax nycticorax, Egretta garzetta, Ardea cinerea, A. purpurea, Cygnus olor, Anas querquedula, Aythya nyroca, Porzana parva*, etc. The Complex is of international importance for the breeding Semy-coloured Fly-catcher (*Ficedula semitorquata*). The Ropotamo Complex is one of two breeding sites for *Haliaetus albicilla* on the Bulgarian Black Sea coast; breeding haunt of national concern for the Little Bittern, and for the wintering Pygmy Cormorants (over 110). 3 breeding pairs of the Globally Threatened Ferruginous Duck (*Aythya nyroca*) inhabit the wetlands of the Complex

The Ropotamo Complex is a 'bottleneck' area for migrating birds, especially for *Ciconia ciconia* (over 10,000), and the Spoonbill (*Platalea leucorodia*).

Reptiles and Amphibians: The Ropotamo Complex is one of the three richest regions in Bulgaria for reptile and amphibian species. 32 species have been recorded: 9 amphibians and 23 reptiles. Of these, 6 species are protected by Order No. 729/1986 of the MoEW; 15 species are protected under the Bern Convention; 2 species are included in the European Red List; 6 species are included in the World Red Data Book. The complex supports Europe's northernmost site for *Coluber rubriceps*.

<u>Reptiles:</u> Testudo graeca graeca, T. hermanni boettgeri, Emys orbicularis, Caretta caretta, Cyrtdactylus kotschyi, Ophisaurus apodus thracius, Lacerta taurica, L. viridis, L. pratincola, L. trilineata, Ablepharus kitaibelii, Typhlops vermicularis vermicularis, Natrix natrix, N. tessellata, Coluber jugularis, C. rubriceps thracius, Elaphe longissima longissima, E. quatuorlineata sauromates, E. situla, Malpolon monspessulanus and Vipera ammodytes.

<u>Amphibians:</u> Triturus vulgaris, T. cristatus, Bombina bombina, Bufo bufo, B. viridis, Hyla arborea, Pelobates syriacus balcanicus, Rana ridibunda and R. dalmatina.

Fish: 55 species are recorded in the wetlands of the Ropotamo Complex. Four species, with different levels of endemism, inhabit the River Ropotamo; 5 are included in the RDB of Bulgaria as "threatened".

River Ropotamo (lower stream and estuary): The species composition, numbers and distribution of transitory inhabitants in the firth are quite variable. Of the residents, freshwater fish predominate (15 species). Four species (*Alosa caspia bulgarica, Chalcalburnus chalcoides, Atherina boyeri* and *Gasterosteus aculeatus*) are included in the RDB of Bulgaria as 'threatened. In the liman of the River Ropotamo, the families Mugilidae and Atherinidae are the most permanent and numerous. The highest species diversity is found in the lowest zone of the liman, near the sea. From April to September, *Alosa pontica, A. caspia bulgarica* and *Anguilla anguilla* enter the liman but they remain rare species.

Arkutino Swamp: Most numerous are Gasterosteus aculeatus and Gambusia holbrooki.

"Velyov Vir" Maintained Reserve: *Leucaspius delineatus* and *G. aculeatus* are included in the RDB of Bulgaria.

<u>Alepou Marsh</u>: Scardinius erythrophthalmus, Carassius gibelio, Cyprinus carpio, G. aculeatus, G. holbrooki and Perca fluviatilis.

Stomoplo Marsh: C. carpio, Tinca tinca, Pseudorasbora parva, G. holbrooki and Lepomis gibbosus.

Invertebrates

61 rare invertebrate species found in the Complex. For the majority of them the Complex is the only area in this country where to find them - Xanthochilus saturnius, Epineuchinus caucasicola, Anthaxia hackeri, Pelosia obtuca, Kypenodes orienntalis n Dolbina elegans steffensi, Oxiloma elegans, Pardosa pseudostrigillata, Tetratocoris antennatus, Platypygius crassus, Nemotelus bipunctatus, Epithalassius stackelbergi, etc.

41 endemic invertebrate species are recorded in the wetlands of the Ropotamo Complex. Of them 18 species are Balkan and 23 - Bulgarian. The majority of them are of the groups of Beetles (25 species) and Mollusks (9 species). Amongst them – Bulgarica varnensis, Helicella spiruloides, Orcula zilchi, Pelethiphis anoxiae, Paraleptophlebia lacustris, Bembidon rivulare euxinum, Laemostenus cimmerius weiratheri, Microlestes apterus, Cicindela hybrida, Pterostichus merkli subsp.nov, Carabus montivagus bulgaricus, Procerum scabrosus, Laemostenus cimmerius weiratheri, Cardiophorus hinkeia, Vadinia moesiaca, Chlorops quercophilus etc.

The area of Black Sea coast is one of the zoogeographical regions in Bulgaria, with 204 rare invertebrates found, of all 1135 species in Bulgaria.

9 terrestrial relict invertebrates are found in the wetlands of Ropotamo Complex - *Laura cylindracea*, *Oxychilus urbanskii*, *Paranocarodes straubei*, *Euxina circumdata*, *Serrulina serrulata*, *Krynickillus urbanskii* etc. Of them 6 species are terrestrial Mollusks, 1 – Odonata, 1 Orthoptera, 1 -Coleoptera. Most of them (7 species) are spread in the whole area, while the rest ones are found near the mouth of the Ropotamo river and Arkutino marsh.

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

Forestry Commission "Ropotamo" with an area of 592 ha and wood stock of 964,820 m³, harvested 7,800 m³/ per year. In 1994 - 8,326 m³, in 1995 - 7,766 m³, 1996 - 12,090 m³.

The protected areas in the complex are amongst the most visited natural sites in the country. Boat tours are organized along the River Ropotamo and to "Velyov Vir" Maintained Reserve. Fishery – offshore, as well as in Stomoplo Marsh. Coastal beaches, resorts. A number of archeological sites along the coast: megalithic (tallmens), ancient ruins, castles, and ancient harbors.

20. Land tenure /ownership of: (a) site (b) surrounding area

a) site – state, municipial and private.

b) surrounding area - state, municipal and private.

21. Current land use: (a) site (b) surroundings/catchment

a) The Complex includes protected areas with different level of protection. "Ropotamo Reserve" is strictly protected area, and scientific researches and visitors activities allowed only. Rest of the 6th protected areas allow fishing, recreation, tourism.

In the areas between the above-mentioned protected sites, as well as the buffer zones of the reserve - hunting, forestry, recreational and tourist activities.

b) forestry, fishery, recreational and tourist, agricultural activities.

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

- a) There are not enough guards for the Alepu Marsh and Stomoplo Marsh protected sites. Heavy tourist influence in the summer season. Illegally built barracks near the estuary of the River Ropotamo. The channels in the Ropotamo River estuary have changed since concrete quays were built along the coast. Arkutino Swamp and the aquatic area of Velyov Vir Maintained Reserve dry out in some years, which is a threat to the rare fish and amphibians that inhabit them. Illegal fishing in the sea area along the coast of the complex, as well as in Alepu Marsh. Increasing eutrophication in Stomoplo and Arkutino Swamps.
- b) Of main concern are: unregulated development of the South Black sea coast; changes in water regime of Ropotamo river, of the created reservoir in the upper stream area; in the recent past, a drainage system was built

northwest of Alepu, affecting the open water area of the swamp. The drainage system no longer used, but continues to drain the northeastern part of the swamp.

- c) Part of the forest grounds has been granted to private firms for creating recreational Complex (former plans were for Ecological college).
- d) Potential factor is the increasing number of tourists and visitors.

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

Ropotamo Reserve - 1,000.7 ha unique complex of natural beauty. Of **international importance**, included in the UN List.; Buffer zone of Ropotamo reserve - 707.7 ha.

Velyov Vir Maintained Reserve - 13.6 ha, longs-type forest, wetland; Natural Monument Alepu Marsh – 167 ha. Protected Area Stamopolu Marsh - 40 ha; Natural Monument Rocky formations, the Fjords and the Monk-Seal Cave of Cape Maslen nos - 17.6 ha. Natural Monument Alepu sand -dunes – 12 ha Natural Monument Sand dunes between Town of Primorsko and Perla Locality – 40 ha

All above-mentioned protected sites are designated as natural sites of **national importance** for the conservation of the biodiversity, according to Bulgarian legislation. Ordnance N 988, 04.11.1993 r. of MoE, State Gazette 97/1993 r.

Arkutino Swamp (recently part of Ropotamo reserve) – 97 ha is designated Ramsar Site (1975). Ropotamo Complex is designated CORINE site of international significance, under N 72.

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

7 Management Plans (created by the Bulgarian-Swiss Biodiversity Conservation Program), including for all the wetlands of Ropotamo Complex are under finalization, and to be adopted by the Ministry of the Environment and Waters.

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

A number of field researches have been developed under the purposes for the Management Plans for the 7th protected areas in the Complex: species plant composition and vegetation, algae investigations in all the wetlands of the Complex; zooplankton and zoobenthos surveys; amphibian and reptile survey; fish survey; waterbird monitoring; bat survey; Project of Regional Center for Eastern and Central Europe on coastal sand-dune vegetation (2000), etc. A Nature Conservation Center (for the protected areas of Ropotamo Complex) of the Ministry of the Environment and Waters is under construction, and to be opened in 2002.

26. Current conservation education (e.g. visitors center, hides, info booklet, facilities for school visits, etc.

There is a pier entering in the east part of Arkutino Swamp, equipped for visitors. A Nature Conservation Center (for the protected areas of Ropotamo Complex) of the Ministry of the Environment and Waters is under construction, and to be opened in 2002.

Leaflets and posters have been published within the BSBCP, MoEW, NGO's.

New Visitor Centre will be opened in April 2002. It is built with the financial assistance of BSBCP and MoEW and will managed by MoEW.

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

The wetlands of Ropotamo Complex are amongst the most popular tourist destination in this country. The tourists visit the area between May and October. The sand-dunes, the beaches in the Complex are favorite place for recreation activities. The boat tours in Ropotamo River and "Velyov Vir" Maintained Reserve are famous all over the country.

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

<u>Territorially</u>: The area of Ropotamo Complex belongs administratively to Municipality of Primorsko and Municipality of Sozopol, District of Bourgas.

Functionally: The reserves and the rest of the protected areas in the Complex are under jurisdiction of the Ministry of the Environment and Waters. Arkutino Swamp is a Ramsar Site.

The sand-beaches are under jurisdiction of the Governor of Bourgas District.

The non-protected areas are mostly by the jurisdiction of the Ministry of Agriculture and Forests.

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

Regional Inspectorate for Environmental Protection and Waters (RIOSW) – Bourgas; <u>Address</u>: "Perushtitza" Str. 67, Bourgas BG-8000, Bulgaria.

30. Bibliographical references: (scientific/ technical only)

Appelo, C.A. & Geirnaert, W. 1991. Processes accompanying the intrusion of salt water. Proc. 11th SWIM, 291 - 304. Bondev, I. 1991. Vegetation of Bulgaria. Map 1: 600 000. Sofia University Press, Sofia.

Grimmet, A., R. Jones. 1989. Important Bird Areas in Europe. ICPB Technical Publication N 9, Cambridge.

Dimitrov, M. (in print.). Ropotamo Wetland Complex.- In: Profirov, Michev. Black Sea Coastal Wetlands. Wetlands International.

Dimitrov, M. (in prep.). Management Plans of Differrent Protected Areas in Roporamo Wetland Complex. BSBSP.

- Dimitrov, M., L. Profirov. 1997. The Birds of Ropotamo Complex (manuscript).
- Dimitrov, M., L. Profirov, P. Yankov, U. Georgieva. 1997. Ropotamo Complex. In: I. Kostadinova (comp.), Important Bird Areas in Bulgaria, BSPB, Sofia.

Management Plans for the Protected Areas in Ropotamo Complex (in prep.). BSBCP.

- Kostadinova, I., S. Dereliev (comp.). 2001. Results from the Mid-Winter Counts of Waterbirds in Bulgaria for the Period 1997 2001. BSPB Conservation Series, Book 3. BSPB, Sofia.
- Michev, T (ed.). 1995. National Action Plan for the Conservation of the most Important Wetlands in Bulgaria. Ministry of the Environment, Sofia.
- Profirov, L., T. M. Michev (in print). Bulgarian Black Sea Coastal Wetlands. Wetlands International and BlackWet.
- Rose, P. 1992. Western Palearctic Waterfowl Census. IWRB.
- Rose, P. 1993. Western Palearctic and South West Asia Waterfowl Census. IWRB.
- Rose, P.M., D.A.Scot. 1994. Waterfowl Population Estimates. IWRB, Slimbridge, UK.
- Ivanov, K., A. Sotirov, A. Rojdestvenski, D. Vodenicharov. 1964. The Lakes of Bulgaria. Inst. Hidrol. Meteor., Sofia, XVI, 242.
- Tucker, G.M., M.F. Heath. 1994. Birds in Europe: their conservation status. Bird Life Conservation Series N 3. Cambridge, UK.
- Wilson, A. M., M. Moser. 1994. Conservation of Black Sea Wetlands. A Review and Preliminary Action Plan. IWRB, Techn. Publ. No 33.
- Red Data Book of Bulgaria.V. 1, Bulg. Acad. Sci., Sofia, 1984, 1 447.
- Red Data Book of Bulgaria.V. 2, Bulg. Acad. Sci., Sofia, 1985, 1 184.