**Additional material**

**Physical features of the site:**

*Origins*

In the past the Poda territory used to be marshy, almost all of it covered by aquatic vegetation (probably reed). The later intensive human activities within the area played a decisive role for shaping the present-day appearance of the site.

A barrier fishing device (guard) was constructed in 1928-29.

With the outset of the construction work on the oil processing refinery "NEFTOCHIM" in 1960, the Eastern part of the Mandra Lake was given up for the construction of a lake intended for oxidizing (later stabilizing) lakes intended for the factory waste water.

In 1963 a barrage was built turning a great part of the semi-saline Mandra Lake into a freshwater reservoir, collecting water from the rivers Izvorska, Fakiiska, Sredetska, (Groudovo) and Roussokastrenska. That part of the ex-lake remained to the East of the barrage retains its connection to the sea. It is now known as Uzungeren.

With the construction of the international road E87, in the early 70s, part of the fourth oxidizing lake was torn away. This alongside with the Burgas Shipyards fence brings about the final shaping of the future protected area in its present borders.

To shape the area’s final appearance, the later intensive human activities contributed a lot. Owing to them, zones differing in shape, size and animal/plant composition were formed. Human activity was mainly expressed in passing two oil pipelines (the one is no longer used at present, and the other will soon be out of operation); water mains, power line; drainage canal collecting water from the Komloushka Lowland. Immediately along the western border of the site are placed technical devices (various types of cables). They are all buried underground past the international road E87. Some of the postal and telephone services devices pass through Poda as well.

All these activities in the area and adjacent basins exert a direct influence on the formation of specific plant communities and related birds and other animals inhabiting the area. On discharging water from the reservoir (and particularly, on overflowing due to spring high water) to the Southern part of Poda a quantity of freshwater is let flow. It 'dissolves' saline sea water in the South-east part of the area. This is also favoured by the remnants of the ex-guard serving as breakwater against the strong wave activities in the bay. With water freshened and natural shallow places in this part of the area, this helps the rapid growing of specific plant communities far into the sea - mainly reed massifs, and -at places- *Bolboschonus maritimus*.

*Hydrology, water quality and quantity*

Both the historical development of the Burgas-Mandra firth and various types of anthropogenic activities in the area provide a good illustration of the impact of nearby water quantities for shaping and maintaining the hydrological background of protected natural areas.

Waters formed in an extensive area with high variety of physico-geographical conditions flow through the Poda into the sea. They constitute the catchment area of the Mandra reservoir. Many rivers flow in the reservoir, but three of them are of more considerable importance for its water balance: the Sredetska (Grudovska), the Fakiiska and the Rusokastrenska. They are formed over vast territory, defining the main part of the reservoir’s catchment area – 2,047.9 km2.

Additional, not established for the moment, quantity of waters flows through the canal dug in 1991 through the northern part of Poda to drain the Komloushka lowland. Waste waters from the nearby complex "Meden rudnik" and waters from Burgas Lake are accumulating in the latter.

In order to follow the fluctuations in the water levels, 4 piezometers and 7 poles for measuring the underground and surface water level have been constructed. The greatest fluctuations have been established in the pools "The Tern (Ribarkata)" - 83 cm, and "Basin 6" - 71 cm. Owing to the working regime of the Mandra reservoir and sea level fluctuations, the greatest dynamics in water constructions has been detected in the Uzungeren-Black Sea canal.

The fluctuations in the water levels of the "Spoonbill pool (Lopatarska)" are significant - 61 cm. At the same time mineralization remains almost constant. This effect is due to the water-reistant clay screen on the pool bottom placed there when the “Lukoil – Neftochim” settlers were built ("The Spoonbill Pool" (Lopatarskata lokva) used to be the southernmost part of the fourth settler).

To drain the high waters of the adjacent to Poda Komlushka lowland, threatening to flood the highway, a canal with a sluice was built through the northern part of Poda in 1991.

As the Poda area is an indivisible part of Uzungeren bay and is in direct contact with the Black Sea, the area’s water regime is formed as a result of the processes going on in these two water basins, as well as in the Mandra reservoir. The working regimes of the reservoir floodgates are directly related to the changes in the salinity of Uzungeren during the year, respectively on Poda.

On the basis of the latest observations on the basins’ general mineralization in the protected area, the following conclusions can be drawn:

Certain water aquatories have specific saline water composition, their mineralization ranging in very large limits, both in space and time;

Five water types can be conditionally defined:

- Fresh: 0.367 - 0.760 mS;

* Almost fresh: 1.42 - 2.72 mS (formed after sudden outflow of great water quantities from Mandra reservoir);
* Fairly saline (brackish): 4 - 8 mS;
* Considerably more saline: 10 - 19.6 - 26 mS;
* Hypersaline (hayperhaline): 30-32 mS and more.

*Soils*

The soil composition of the protected area is to a certain extent artificial. The reason for this is the turning of almost the whole territory into oxidizing basins for oil products in the 1960, which on the one hand destroyed the natural soil composition and on the other - introduced soil elements from other places.

There is no information about the main soil types at present and their distribution on the territory of the Poda, as well as about the fertility and nutritious value of the different soil types.

*Climate*

The local climate is influenced first of all by the general climatic features of the country. One of them is the location of the country in the southern part of the moderate climatic belt, at the border with the sub-tropical one. This factor determines the continental and oceanic climatic influence. The climate is under the influence of the atmospheric circulation of marine arctic, moderate marine, arctic continental, moderate continental and tropical continental air masses. The average annual air temperature is 10,5oC, and the average annual amplitude - 24-26oC. North-Western and North- Eastern winds predominate in the country in general, the Black Sea coast being one of the most windy parts of Bulgaria. The average rainfall in the country is 670-700 mm. Concerning the snow cover, the Black Sea coast is one of the places where it stays for the shortest period (10-15 days), while in the high mountains it stays for 200-250 days.

An important factor for the forming of the local climate is the climatic region, where the Poda is located, and its peculiarities. This is the climatic region of the Burgas lowland – one of the three climatic regions of the Black Sea sub-province of the Continental-Mediterranean province.

The Black Sea appears to be the major factor responsible for the climatic peculiarities of the region. This water basin, immense in space and volume, exerts influence most of all on the temperature. Its warming effect can be felt since mid-October till the end of February. In summer and spring the effect has an adverse influence. All this presupposes the reduction of temperature amplitudes.

Poda lies in the borderline between the transitory-continental and subtropical types of rainfall in the direction of the village of Fakia and the Mandra Lake. The annual rainfall sum for the coastal part of the region is fluctuating between 520 and 580 mm. The highest rainfall is during June- November, and the smallest - during August-September.

The average annual air temperature is between 12 oC and 13oC. This region is considered as the one with the mildest winter regime. Only about 20 days during the winter have negative average temperature.

Considering the location of Poda, the zonal western atmospheric transportation typical of the moderate geographic latitudes, could be underlined as a regularity. On the basis of this regularity, winds are inconsistent and non-periodical, determined by the nature of the circulation factor.

**Current conservation education:**

On the territory of the protected area there is only one building – the one of Poda Conservation Centre. It is a one-floor massive building with constructed area 210 m2, built by BSPB in the framework of the above mentioned project for the needs of the conservation of the protected area. The building has a meeting hall, a library, an office for the PA administration, a bedroom for volunteers, toilets, bathrooms and stores. It is located at a key site, allowing the control and regulation of the access to the PA, which was one of the main problems before constructing the building. The Conservation Centre has the necessary equipment to fulfill its main functions of protection of the PA.

With the establishing of the Conservation Centre the education activities were systematised further. The diverse flora and fauna of the area is used by the Centre officers and the volunteers from the local BSPB branch to carry out various initiatives (talk-, video- and slide shows, observations, workshops, etc.). The schools use the PA to carry out facultative training classes and other forms of out-of-classroom activities. Trips for acquiring skills of observing and identifying typical bird species are carried out. The permanent exposition and the library of the CC are actively used. Training workshops of different organisations (BSPB, NEPIAST, etc.) and conservation programs (BSBCP) take place in the Centre. A practice of annual conservation brigades, where young people from Bourgas and other places in the country and abroad carry out practical conservation activities in the field, has been introduced. Until now 23 schools and other educational institutions from Bourgas and 24 from other parts of the country have been attracted to the PA. Some of the conservation education activities in the PA have been implemented jointly with the Ministry of Environment and Waters and the Ministry of Education and Science.

After the building of the Conservation Centre and the beginning of its functioning the public information about the PA considerably increased. The dozens of publications in the local, national and international mass media contributed to this. The big number of distributed promotion materials about Poda and the promotion and indication boards put on the busy highway Burgas – Sozopol attracted many visitors. An indication of the high public awareness is the sharp increase of the number of visitors in the PA. While in the year of opening of the Conservation Centre, 1998, Poda has been visited by 2,704 people, the number of visitors in 1999 increases to 7,935, 2000 –8,244, and 2001 – to 14,333 people.

A special observation tower about 9 m tall is constructed in the northern part of the PA.

**Current scientific research and facilities:**

The systematic and professional conservation of the PA became possible after the approval and financing of a BSPB project “Conservation and education in Poda PA”, developed in 1992. The management plan and the Poda Conservation Centre were established in the framework of this project. The project also won the international award “Henry Ford” for 1995/96. This way for the first time a Bulgarian organization took part in the annual initiative “Henry Ford European Conservation Awards”.

For developing the Management Plan systematic two-year studies have been carried out on abiotic and biotic factors of the area. Seasonal samples have been collected and processed to determine: water balance; water basin mineralization; qualitative and quantitative composition of phytoplankton, zooplankton and zoobenthos; the condition of higher flora and vegetation; species composition of invertebrate and vertebrate fauna, etc. More detailed studies on the birds were carried out in this and the following period.

Two diploma papers – “The Birds of Poda PA” (Forestry technical University) and “Tourism in Poda” (Tourism College – Bourgas) have been elaborated on the basis of information from the PA. Poda is a subject to biodiversity studies for PhD theses.