



**Republika Crna Gora  
Republički zavod za zaštitu prirode**

**EKO BiH - Društvo za zaštitu životne sredine Bosne i Hercegovine**

**u saradnji sa opštinama Berane, Andrijevica i Plav**

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**Pokrovitelj: VLADA REPUBLIKE CRNE GORE**

**MEĐUNARODNI NAUČNI SKUP**

***PRIRODNE I DRUŠTVENE VRIJEDNOSTI  
EKOSISTEMA DINARIDA***

posvećen životu i djelu profesora dr. Radomira Lakušića  
(1933 – 2005)

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Berane, Andrijevica, Plav  
Crna Gora

Predsjednik  
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# BILJNE ZAJEDNICE DELTE RIJEKE NERTEVE, HRVATSKA

## PLANT ASSOCIATIONS OF THE NERETVA RIVER DELTA, CROATIA

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The most extensive wetlands in the Mediterranean are alluvial flood plains, coastal lagoons, and deltas of main rivers flowing down from nearby high mountain regions. A typical example of such deltas is found on the eastern coast of the Adriatic Sea. The Neretva River is 218 km long, with a source located deeply in the hinterland of Bosnia and Herzegovina. Its discharge into the middle Adriatic Sea has created a vast delta whose surface area covers a total of 170 km<sup>2</sup>. The delta stretches both countries, Croatia and Bosnia and Herzegovina, where 70% of its area belongs to Croatia. Prior to this, a significant amount of the water habitat was lost to various human activities, mostly in the lower part (Croatia) of the delta. The delta was listed in the Ramsar Convention as an internationally protected wetland in 1993. The few lakes and surrounding regions that remain are slated to become a nature park.

Two principal types of ecosystems predominate in the delta - the aquatic and the terrestrial. The particular floristic and physiognomic features of the various plant assemblages in both ecosystems, with a special emphasis on the former that comprises the nucleus of the delta, are described below.

Field investigations were carried out throughout the period 1994-2006. Methods of the Zürich-Montpellier school (Braun-Blanquet 1964) were applied for analyses of vegetation in the field and for a synthesis of phytocoenological relevés. A total of 404 phytocoenological relevés were done in more than 60 localities in the delta, which encompassed its entire area.

The vegetation consists of 52 plant associations belonging to the 23 classes. The largest part of this area is covered by the association *Phragmitetum australis* and by associations of the alliance *Magnocaricion*. The most endangered associations in the whole area belong to the *Fimbristylion dichotomae* alliance (*Isoëto-Nanojuncetea*). The *Fimbristylion dichotomae* associations are especially valuable because of their rare and endangered plants (e.g. *Baldellia ranunculoides*, *Blysmus compressus*, *Cyperus flavescens*, *Cyperus fuscus*, *Cyperus longus*, etc.). A number of associations in the delta (*Bolboschoenetum maritimi*, *Cyperetum longi*, *Sparganio-Cyperetum longi*) contribute considerably to the terrestrialization of water-bodies.

The overall picture of the vegetation in the delta shows serious degradation processes. Regulating the flow of the rivers in the hinterland can have an impact on vegetation growth and distribution in the delta. During summer, especially in drought years, the water level of the Neretva River decreases. Many karstic springs located around the marsh edges, which support the region with water, also run dry. The very low water level in summer affects life in this area, mainly through the concomitant heating of water and changes in water-quality parameters. Other potential reasons that threaten this region are seen through the intensification of agriculture (e.g.

increases in nutrient inputs), which finally causes vegetation changes in the delta. Therefore, further human impact needs to be controlled.

Further studies will determine the existing relationship between the distribution of plant associations (-species) and particular environmental variables.