



## THE LIMANS/LAKES OF THE LOWER BUZĂU RIVER – PROTECTION

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### Abstract

„The limans/lakes of the lower Buzău river - Protection" that directly affects the current forms of protection of the stagnant waters, located on the lower river Buzău, in area of over 64.11square kilometers, explores the current state of their vulnerability of climate change and anthropogenic pressure. Community policies in the field, accept duality conservatism - interventionism in the environment through ecological network "Natura 2000". Most likely, if the pace of rye and reduction of lake surface will continue to do so will reduce biodiversity and landscape will lose potential conservative

**Keywords:** lakes, vulnerability, climatic conditions, anthropogenic intervention, protection

### 1. Introduction

Banks Coșteiu, Jirlău, Căineni, Balta Albă and Ciulnița are located in the central eastern part of Romania, in the north-east of the Romanian Plain, at an altitude of 30 m on the lower river Buzău (fig. 1). Following the ecological potential and the European Union's policies, these lakes are wetlands that currently benefit on a community safety scheme.

Genesis coasts is attributed to the hydrography processes whose unfolding evolutionary period lasts from Holocene period, of the Hydrographic reshuffle due to movements of subsidence in conjunction with the lower Siret transgressions and marine regressions. Plain lakes are formed at the contact between meadows and fields, isolated or lower rates of transit-order tributaries of the river Buzău (Gâștescu, *et al.*, 1979)

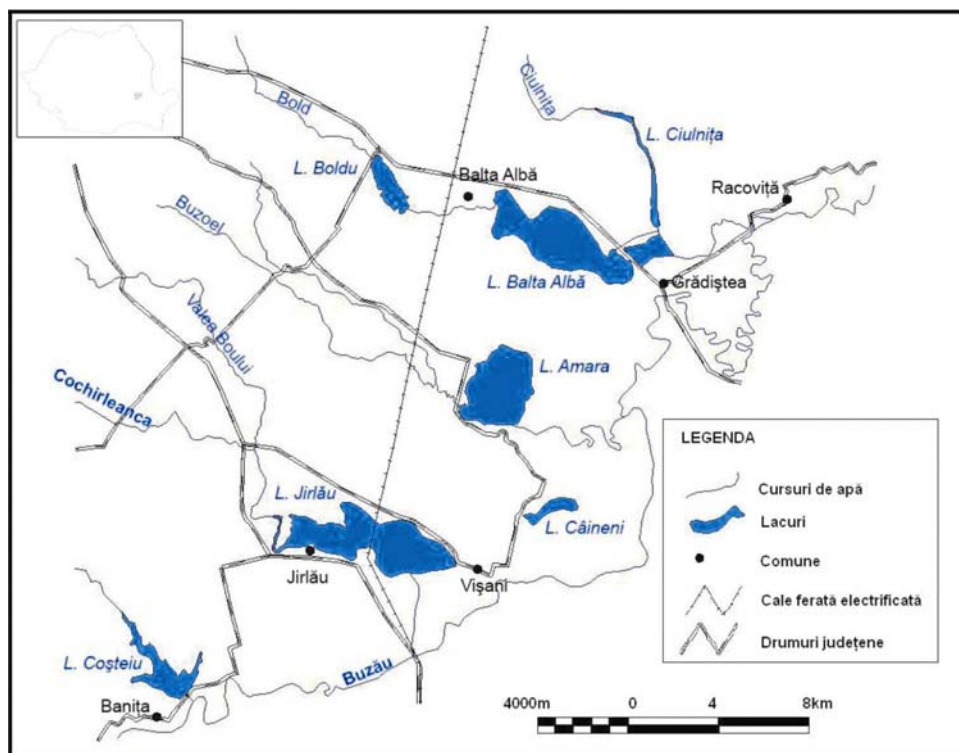


Figure 1. Location of the limans/lakes of the lower Buzău River

Overlapping Quaternary age deposits, shore s depression favors water infiltration in deposits of loess origin deluvial-proluviala and wind. Lakes occupy an area 20km square of subunits approximate Romanian Plain as: Plain Râmnicului and Meadow Buzău. Altimetric values of relief watersheds fall within a variation between 40 and 110m.

Under **climate issue**, the area studied belongs to a temperate continental climate with shades of aridity, characterized by high temperatures, limited rainfall, frequent droughts and low winds. The average annual temperature is between 10 and 11 degrees Celsius, rainfall does not exceed 600mm and the aridity index of droughts of the area has a value of 7.1. Lakes have influences on local climate, generating a regional climat characterized by moderate values compared to the specific (Bogdan Octavia, 1980; Climate of Romania, 2008).

Hydrological balance of lakes due to lithologic conditions (infiltration) and climate changes combined with the use of the land (intensive agriculture) can be considered *poor*. There is a remark of the seasonal variations of level due to the conditions mentioned above. From the point of view of Hydrochemistry, the degree of mineralization of banks water is the same of the salt water and Hydrochemistry type is predominantly sodium chloride.

## 2. Features limnogeographic

**Lake Coșteiu** is the first refuge of lakes located on the left side of the Buzău River, north-east of the village of Banița. Reservoir area is about 120kilometers sq, configured by the basin Coșteiu, and that the lake of 2.94kilometers sq of which about 95% was covered with aquatic vegetation, but in dry years it is reduced. For fisheries, the lake was wedge through dams in five ponds and they are under plot.

Downstream, follows **Lake Jirlău** whose catchment is 352 km sq and it belongs to river Boul. Crossed by a railway embankment (railway Făurei - Tecuci) in length of over 1.2 kilometers sq the lake is divided into two parts which resulted in a differential evolution provoking a installation of mace reed vegetation and the appearance of eutrophication processes in the east, and analysis of satellite images to determine the occurrence of this phenomenon on the western island form. Lake Jirlău was arranged in fisheries purposes.

**Câineni Lake**, an area of 0.96sq km is currently in a phase characterized by drought, attributed to the collection basin ( $F = 14.65$ kilometers square), which drain small amounts of meteoric water and also because of evaporation. Therapeutic properties have facilitated the emergence of resort spas, Câineni-Băi. Now because of the conditions hydroclimatics mentioned and economical problems it is abandoned.

**Amara Lake**, the second largest river basin located in Buzoel, benefits from a constant water intake and is an important fishery. The general trend of Rye (2008), showing through a sedimentary section cvasilongitudinal.

**Balta Albă** is the largest hydrographic unit of the Buzău River. Watershed includes Bold River, with the affluent Gherheasa, and important to mention that between Buzău River and the lake there is no direct connection. For these reasons mineralization was 10mg/l and because therapeutic properties of mud on the left side was arranged a famous spa for the cure of mud, known since 1847. Now because of economic conditions and changes in level, the area is in an advanced state of decay.

**Lake Ciulnița** is banks Buzoieni last series. It is the smallest and it s form is of a large valley (fig. 1) with maximum width of approximately 440m and a length of 7km and it represents the protectes valley if Ciulnița. Village Vâlcelele is fragmented by six bridges and a dam towards Buzău and provided to allow transfer of water from Balta Albă and a channel which connects Lake Ciulnița and Buzău River.

## 3. Ecology and Protection

Coasts drain basins with small areas, and are vulnerable to climatic conditions. This general tendency of variation in the volume of water, barley-

particularly in Căineni-warping through abrasion of the banks (with the formation of strips sand coat along the cliffs Amara, Balta Albă) and eutrophication with a temporarily or permanently character.

Effects of climate change on hydrological characteristics of limnos and lotics units produce the decrease of water volume stored in large formations, in the long term average rainfall, changes in the phreatic level seasonal scale, increasing water temperatures in rivers and lakes and barley.

Lakes score within the category of wetlands and are valued scientifically for the role of reducing erosion, biodiversity, local climate moderation, Hydrological regulation, flood mitigation and recreational potential. Coasts with low saltness has its hydrophilic and paludous species with a strong conservative potential and so it became a legal regime of protection, as follows:

- community and national environmental policies declared areas that belongs to lakes Buzoiene, biogeographic region with high importance, entitled: "Balta Albă Jirlău-Amara-Lacul Sărat Căineni" and Special Protection Area Bird "Balta Albă-Amara-Jirlău" (fig. 2).
- under Law No. 5/2000 approving the National Spatial Plan-Section III of protected areas (Lake Jirlău, Amara and Balta Albă 2.3square km) gained the protection for natural heritage values of national interest the status of natural reserves.

On an area of 64.11kilometers square it is established the protected area system and the importance of Community Ministerial Order No. 1964/2007 concerning the establishment of sites of Community importance as part of European ecological network "Natura 2000". In Romania, the site is known for plant habitats salty areas, galleries and bushes of sea buckthorn (*Hyppphae rhamnoides*) and red (*Tamarix Galli*) and also species of mammals and fish, invertebrates, amphibians and reptiles.

Of the 108 special protection bird areas, set out in Annex 1 of the normative document said, the site of Balta Albă-Amara with ROSPA0004 - it is now circumscribed to the banks of Buzău river awith a surface of 45.096 kilometers square.

The site houses the protected birds (migratory and endangered sedentary) such as the great egret (*Egretta Albă*) of pond bittern (*Botaurus stellaris*) Purple Heron (*Ardea purpurea*) Spoonbill (*Platalea leucordia*) Ferruginous Duck (*Aythya nyroca*) ornit reed (*Circus aeruginosus*), Kentish Plover (*Charadrius alexandrinus*), etc. During the migration, the site site hosts more than 20,000 waders beeing a possible candidate for Ramsar site ([www.anpm.ro](http://www.anpm.ro)). Banks can assure optimal environment protection to plants and animal species but in return it requires a complex system of protection of banks is a physical suport surface of over 64.11 kilometers square where there is symbiosis between agricultural ecosystems, thereby protecting elements of biodiversity. However it is vulnerable to local

anthropogenic pressures such as expansion of agricultural areas, use of fertilizers, deforestation of trees or trees, but poaching and climate variations.

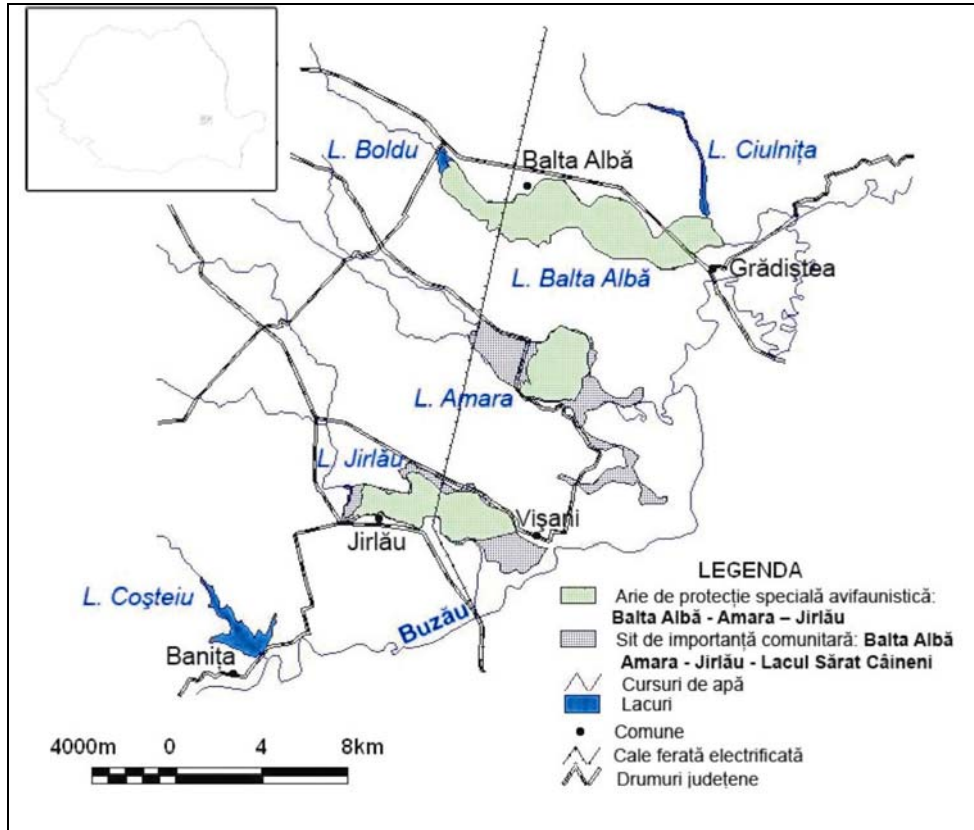


Figure 2. Limnological areas of communitarian protection and conservation

#### 4. Conclusions

For information note can say that the current trend of banks of water by water flowing Coșteiu, Jirlău, Balta Albă, Ciulnița, Căneni, Amara (Figure 1) is to reduce the volume of water. In addition, they are vulnerable to climate changes and anthropogenic pressures contribute to biodiversity loss fauna. Protection area consists of banks of lakes that have been protected and preserved the unique benefits of a legal framework particularly thanks to bioregion. "Natura 2000" is the solution that the European Union help to keep nature in all its diversity and promote economic activities which do not harm biodiversity. *Most likely, if the pace of rye and reduction of lake surface will continue to do so will reduce biodiversity and landscape will lose potential conservative.*

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