

# Waste management, an important element in ensuring a conservative management of Natura 2000 sites along the Siret River

Anca Ionce<sup>1</sup>, Nicoleta Nona Ardeleanu<sup>2</sup>

<sup>1</sup>Costin C Kiritescu<sup>2</sup>, Romanian Academy – Centre of Mountain Economy Vatra Dornei, Romania

<sup>2</sup> The National Agency for Protected Natural Areas, Bacău County, Romania

Keywords: waste, riparian ecosystems, impact, Natura 2000

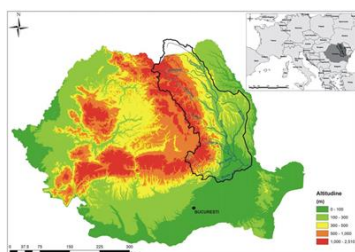
Presenting author email: [ardeleanunonanic@gmail.com](mailto:ardeleanunonanic@gmail.com)

## Introduction,

The effects of climate change are strongly felt in the hydrological circuit, water resources being the most affected by this phenomenon. This fact is obvious in a country like Romania, where surface waters are characterized by a marked variability of the hydrological regime, from one year to another. An efficient water management in the context of adaptation to climate change requires measures to protect the functionality of the aquatic system, including by establishing nature reserves in it; the benefits are felt in the sustainability of healthy socio-economic systems.

The paper deals with issues related to the management of an important source of impact on the favourable conservation of riparian and implicitly aquatic ecosystems in the largest river basin in Romania, the Siret River basin, namely waste.

The Siret River basin is located in the East-North East part of Romania, the name being given by the Siret River which springs from the Pădureni Carpathian Mountains (Ukraine) and flows into the Danube River, downstream of Galați, being the largest tributary of the river. The Siret basin occupies on the territory of Romania an area of 42,890 km<sup>2</sup>. The Siret River has a total length of 647 km, of which 599 km crosses the territory of Romania, collecting the waters of all tributaries that descend from the eastern slopes of the Eastern Carpathians.



Along the course of the Siret River (from north to south), are declared by various normative acts (ministry orders, government decisions) a series of protected natural areas integrated in the European Network Natura 2000. The

total area occupied by Natura 2000 sites is 61,986.80 ha, protecting the aquatic and riparian ecosystems in the studied area (table 1).

Table 1. Protected natural areas on the Siret River

Special Protection Areas (SPAs)	Sites of Community Importance (SCIs)
ROSPA0110 Acumulările Rogojești - Bucecea	ROSCI0184 Pădurea Zamostea - Luncă
ROSPA0072 Lunca Siretului Mijlociu	ROSCI0391 Siretul Mijlociu - Bucecea
ROSPA0063 Lacurile de acumulare Buhuși-Bacău-Berești	ROSCI0378 Râul Siret între Pașcani și Roman
ROSPA0071 Lunca Siretului Inferior	ROSCI0107 Lunca Mircești
	ROSCI0434 Siretul Mijlociu
	ROSCI0072 Dunele de nisip de la Hanul Conachi
	ROSCI0162 Lunca Siretului Inferior

## Results & Discussions

The studies carried out to establish the management measures for the protected natural areas (82% have Management Plans approved by ministry order) as well as the field verifications for monitoring the conservation status of the species and habitats had identified as main threats the illegal waste disposal.

The main categories of waste abandoned and analysed in the riparian ecosystems of Natura 2000 sites along the Siret River are: household waste, construction waste - demolition and industrial waste.

Along the course of the Siret River there are 14 territorial-administrative units located in the counties: Suceava, Iași, Neamț, Bacău, Vrancea, with a population of 214,690 inhabitants. Although integrated waste management systems are implemented in the five counties, which provide for the coverage of the entire administrative territory with sanitation services, abandonment of household and package waste on the waterfront, especially in rural areas, is a present and visible phenomenon. Approx. 45% of the quantities of abandoned waste, due to the lack of selective collection and processing systems for recovery, but especially the lack of specific legislation, are made up of construction and demolition waste. According to Law no. 211/2011 on waste management these are not part of the municipal waste category. Through the Sanitation Law, construction waste from the population (generated by redevelopment and interior and / or exterior rehabilitation activities of individually owned homes) is collected by the owner and is transported by the sanitation company to the crushing / sorting / recovery facilities or to compliant deposits, if cannot be recovered. The lack of these facilities, the costs involved and only the transport of waste makes the materials resulting from construction-demolition to be stored on the bank of the watercourse closest to homes, on the principle "water takes it". Of the

approx. 44 types of waste identified as belonging to the category of construction waste - demolition, 16 are classified as hazardous (asbestos, tar, paints, various types of resins used for preservation, fireproofing, etc.).

Another category of waste abandoned in the Siret River meadow is bulky waste such as furniture, mattresses, etc. (around 7%). Untreated wood waste, which is thus collected from class 20 municipal waste (20 01 38 - wood other than that specified in 20 01 37 and 20 02 01 - biodegradable waste) or resulting from the sorting of municipal waste collected in a mixture, both of class 17, construction and demolition waste (17 02 01 - wood), can be treated (chopped) and delivered by sanitation operators to facilities that use this waste as fuel for the production of electricity / heat. As the procedure for issuing certificates of origin for biomass from industrial and municipal waste, used as fuel or raw material for electricity production has not been legislated (certificates of origin are issued only for biomass from agriculture, forestry and related activities), there is a lack of interest on the part of sanitation companies to take over the types of waste mentioned above, although this approach supports the compliance with the provisions of the National Waste Management Plan, approved by Government Decision 942/2017 and the EU Circular Economy Action Plan.

The target set by Article 22 (1) of Directive 2008/98 / EC of the European Parliament and of the Council on waste and repealing certain Directives, as amended by Directive (EU) 2018/851 stipulate the reduction of the amount of municipal biodegradable waste collected with 35% compared to the quantity collected in 1995, term obtained by derogation from Romania for 2020. The lack or non-functioning of the composting facilities provided in the Integrated Waste Management Systems at county levels, makes this objective not be achieved (fig.1)

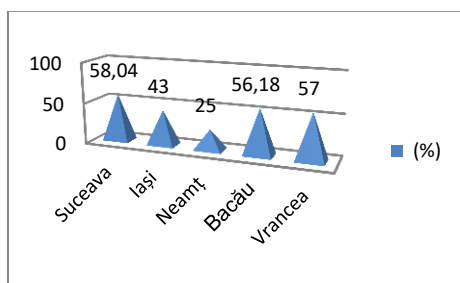


Fig.1 Biodegradable waste from the collection of households and similar waste disposal (%)

8% of the quantities of waste abandoned in protected natural areas along the Siret River represent industrial waste and other types of waste which, due to degradation, could not be quantified separately. The largest proportion is the waste from the exploitation of mineral aggregates and their sorting stations, existing in large numbers. Gravel deposits and refuse from the sorting sieve that have no commercial value are also identified in the management plans of Natura 2000 sites as threats to maintaining a favorable conservation status of species and habitats by: deposits prevent the development of specific vegetation, destroy forest vegetation, increases suspensions in watercourses are leading to damage to aquatic species, creating dysfunctions of aquatic food chains. Species in the riparian zone can also disappear by destroying their specific habitats (amphibians, otters, etc.). Here we must mention the existence of the slag and ash deposit (46.7 ha) from the burning of lignite in the thermal power plant of Bacău, located between ROSPA0063 Lacurile Buhusi-Bacau-Beresti and ROSPA0072 Lunca Siretului Mijlociu.

## Conclusions

Water security is defined as "the safe availability of an acceptable quantity and quality of water for health, livelihoods and production, coupled with an acceptable level of water risks" (Grey and Sadoff, 2007). Water quality is also due to the health of aquatic and riparian ecosystems, which, although they may be in protected areas, are degraded by poor waste management. A systemic approach to the issue of water security, with integration and conditions to eliminate the impact of thrown waste, regardless of their nature, is particularly important in water management. On the other hand, it is necessary to speed up the emergence of a normative act regulating the issue of the management of construction and demolition waste.

## References

- Grey D. și Claudia W. Sadoff, (2007), *Ori-ori? Securitatea Apei pentru Creștere Economică și Dezvoltare*, Politica în domeniul apelor 9, Nr. 6 545 – 571
- Gomoiu, M.T. (2009), *Zonele umede-abordare ecologică*, Ed. Casa Cărții de Știință, Cluj-Napoca
- [ec.europa.eu > info > eu-biodiversity-strategy-2030\\_ro](http://ec.europa.eu/info/eu-biodiversity-strategy-2030_ro)
- [www.mmediu.ro](http://www.mmediu.ro)
- [www.rowater.ro](http://www.rowater.ro)