

***Management of Natural Protected Areas within the Romanian Cities.
Case Study: Văcărești Protected Landscape and Natura 2000 Sites***

Atena-Ioana Gârjoabă, Ion Mincu University of Architecture and Urbanism, Romania
Cerasella Crăciun, Ion Mincu University of Architecture and Urbanism, Romania
Alexandru-Ionut Petrisor, Ion Mincu University of Architecture and Urbanism,
Romania

The Asian Conference on Sustainability, Energy & the Environment 2020
Official Conference Proceedings

Abstract

The rapid pace of city expansion is drawing more and more attention to the reconsideration of interest in the city-environment-landscape nexus. Urban planning is one of the main potential tools with a considerable impact on protecting the environment and the landscape. Natural Protected Areas are among the most vulnerable areas and the impact on those in or near urban regions even higher. Natural Protected Areas within the cities may become the topic of a new ecology, but with potential significant effects in reestablishing the anthropic-nature-landscape balance. However, the effects of responsible planning can be strongly influenced by the local community and its degree of awareness and involvement during the preparation of the management plan and its implementation. This paper presents, in parallel, several case studies from Romania, i.e., Natura 2000 sites and a Protected Landscape located in urban areas with a legislative void concerning their status. Their comparison highlights the importance of site location in the conservation process and the particular role of a specific historical evolution and decryption of real and authentic values within an urban area. All these can lead to the evaluation of morpho-typologies and declaration of an urban part of the built-up area as a natural one. The final result is the identification of general urban ecological morpho-typological principles, applicable to other Natural Protected Areas within the cities, the main factors involved in the management process, and the characteristics of the legislation affecting the Natural Protected Areas.

Keywords: Urban Ecological Morpho-Typological Principles, Anthropic-Nature-Landscape Balance, Natural Protected Area, Protected Landscape, Management Plan

iafor

The International Academic Forum
www.iafor.org

1. Introduction

The city is one of the most complex systems created by man, being characterized by a continuous dynamism and uninterrupted exchanges both inside and with the environment. Due to these connections and the generated energy, the city can be likened to a living organism in continuous metabolic urban development based on morpho-typological principles (Craciun, 2008), but also a continuous individual and community evolution - "individual man perishes, while the city as a form of life continues" (Welter, 2002). "If we think of cities as living entities, subject to the same laws as the rest of the natural world, we then have to pay attention to predation, violence, and extinction." (Allen, 2011). The landscape, in its evolutionary and historical meaning, oscillates in its evolution, between space and time (Craciun, 2008), being an important morpho-typology, which marks the particularity of the place and its memory/genius loci. Perhaps the most obvious "attack" of the city system is the one on nature, which consequently involves the attack on the quality of life of the inhabitants and the community, in relation to maintaining the balance between natural/anthropic, but also cultural. The contrast between the natural and the anthropized space has diminished so much in time that the problem of confusion between what is natural and what is artificial is already raised - "The relationship of the urban to the so-called natural landscape today is ambiguous, as landscape urbanism reminds us." (Cuff and Sherman, 2011), currently using more the term semi- or quasi-natural. Even green spaces in the urban fabric can be considered artificial spaces, on the one hand due to the isolated character of the enclave in the built environment, and on the other hand due to the use of allogeneic plant essences in the arrangements, to the detriment of the natives. An essential element of the human habitat, the urban green space capitalizes on the biological and aesthetic potential of the vegetation, harmonizes urban architectural ensembles, sanitizes and beautifies the urban environment, thus reducing its aggression on the city's inhabitants." (Muja, 1994).

The arrangement of green spaces only from an aesthetic point of view, can have special impacts for the well-being of the population, but a mutualism approach will have a longer-term effect. "Mutualism in biology describes a relationship between two species in which both benefit from the association. Designing for mutualism means recognizing and fostering the links between environment, organisms, and land-use practices - both human and animal - and identifying the complex cycles that tie together different species and systems." (Orff, 2016). Fischer states that "urban residents differ significantly from residents of non-urban places, and they differ to a degree insufficiently accounted for by the individual traits each group brings to its locale. They are more likely than rural residents to behave in ways that diverge from the central and/or traditional norms of their common society" (Fisher, 1975). For mutualism to "work", it is necessary to involve the population in protecting the environment, but in the case of such a diverse community, this process will be difficult.

Recognizing and encouraging the connections and complex cycles of connection between the environment/organisms/land use practices, bring their positive/negative contribution to urban development, with impact on urban comfort, heat island

formation and thus energy consumption related to these processes (UAUIM *et al.*, 2017).

An important element is related to the role of green space and landscape (including heritage), translated into its ecosystem services (Petrișor *et al.*, 2016a), as well as free and unrestricted "access" to the landscape, as a fundamental right of the community and of man as an individual (Craciun and Acasandre, 2016), in the context of protection, support and raising the quality of life, with ethical and meta-ethical implications in urban and territorial development, but also human, community, physical and emotional.

If in the case of green spaces there is such a high importance of environmental conservation, in the case of natural protected areas in the urban environment, this need is all the more obvious. "Cities and towns should be designed as networks that link together residential areas to public open spaces and natural green corridors with direct access to the countryside" (Rogers, 2005). In most cases, however, this hierarchy is missing, and the contrast between urban and natural is much more obvious. Cities have formed in areas rich in terms of natural resources - for example, near a water source. Therefore, the location of natural protected areas within or in the vicinity of urban areas is not uncommon, as their delimitation is based on ecologically rich areas - "The location of protected areas in different types of vulnerable ecosystems is done after determining the areas of richer in species, in endemic centers or in places with very high taxonomic diversity." (Pricope and Paragina, 2013).

In Romania, out of a total of 319 urban settlements, more than two thirds are tangent or overlap with a natural protected area (Figure 1). "At European level, Romania has the most diversified and valuable natural heritage due to its geographical position and varied topography. Of the 11 existing biogeographical regions at European level (Alpine, Anatolian, Atlantic, Arctic, Pontic, Boreal, Continental, Macaronesian, Mediterranean, Pannonian and Steppe) there are 5 in Romania, being the only country on the continent that has more of 4 biogeographical regions." (Pricope and Paragina, 2013).

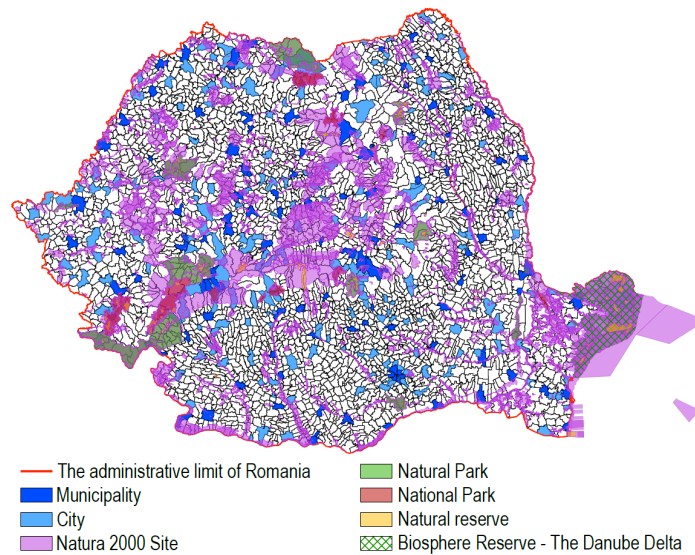


Figure 1. Natural Protected Areas in Romania

2. Management of Natural Protected Areas in Romania

Although conceived from the very beginning based on the IUCN guidelines, matching its categories, the Romanian network of natural protected areas had some conception problems, especially when new areas were declared in preparation for the Romanian accession to the EU, due to the overlapping of different categories (Ioja *et al.*, 2020). The management of natural protected areas in Romania has always been difficult. The main problem was that of those responsible for the conservation of areas, which led to the syndrome of "natural protected areas on paper" (Pricope and Paragină, 2013) - areas are declared by governmental legislation, but do not have an administrator. "Until 2000, there was only one protected area with its own administration: the Danube Delta Biosphere Reserve" (Pricope and Paragina, 2013), and until 2013, only 41 custodians were declared. Before 2018, only 50% of the Romanian natural protected areas were really protected, having a custodian and a management plan (Petrișor and Andrei, 2019).

In 2018, the situation changed radically. By emergency ordinance 75/2018 for amending and supplementing some normative acts in the field of environmental protection, the administration of all natural protected areas was taken over by the National Agency of Natural Protected Areas. On the Agency's website (<http://ananp.gov.ro/>), 1574 natural protected areas are listed. The management of so many natural areas by a single institution can have serious consequences. It is impossible for such a small staff (probably less than 10 people) to cope with such a large volume of work. At the same time, there is a risk of adopting a superficial management, being very difficult to adapt to the context, especially when it comes to 1574 different situations. After the adoption of this legislative act, the status of custodians became uncertain. Some of them have become collaborators of the Agency, but it is not known exactly what decision-making power they have in the management process.

The potential conflicts between development and conservation, visible in the Romanian natural protected areas (Petrișor *et al.*, 2016b), are even more serious in the areas neighboring human settlements. Currently, there is no legislative act with a strict impact on natural protected areas in the urban environment, at national level. Therefore, they are subject to the same rules as natural protected areas that are not inside or in the vicinity of a city.

3. Natura 2000 Network and Natural Parks

For the current study, only two types of natural protected areas were considered: Natura 2000 sites and Natural Parks, being among the areas that overlap or are mostly tangent to urban settlements. The Natural Parks correspond to IUCN “protected landscapes”. The Natura 2000 network is the most important and widespread network of natural protected areas in Europe. "The instrument that will underpin the implementation of the principles of the European strategy is the European Ecological Network of Natura 2000 natural protected areas, which already comprises 25,000 natural protected areas, totaling 18% of the EU area" (ec.europa.eu as cited in Pricope and Paragina, 2013).

The situation of natural parks in urban areas is a relatively recent topic at national level, which grew with the establishment of the first urban natural park in Romania – Văcărești Natural Park, which will be described below, being one of the three case studies. The areas where the two types of areas are the most widespread and numerous, overlap with the Carpathian area (for Natural Parks and Natura 2000 sites) and the Danube Delta area and nearby areas (for Natura 2000 sites).

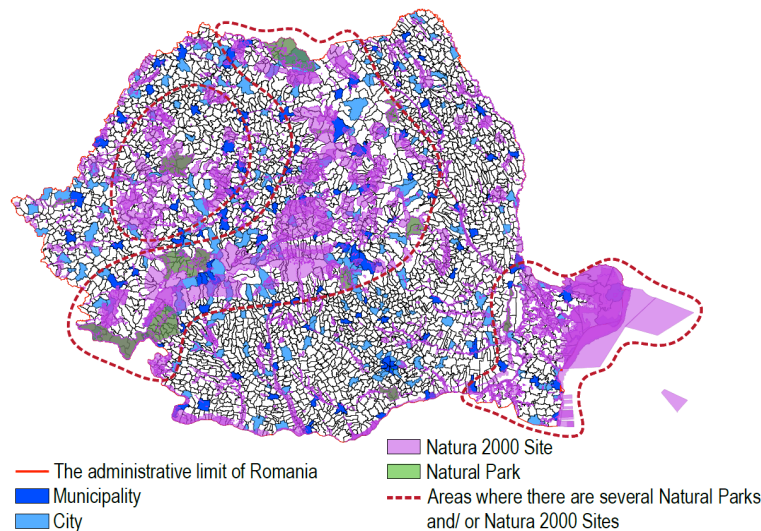


Figure 2. Natural Parks and Natura 2000 Sites of Romania

3.1 Types of spatial relationships between the Natural Protected Areas and urban settlements

3.1.1 Types of location of Natura 2000 Sites in relation to cities

Natura 2000 sites are the type of natural protected area that occupies the largest area at national level, compared to any other category of natural protected area (Figure 3). According to the National Agency of Natural Protected Areas, out of the total of 1574 natural protected areas declared in Romania, 606 are Natura 2000 Sites, of which 435 are Sites of Community Importance (SCIs) and 171 are Special Protection Areas for Birds of Prey (SPAs). Out of the total of 319 urban settlements, at least half are related to a Natura 2000 Site. Out of the total area of the country (23,839,700 ha), approximately 31.69% is occupied by Natura 2000 Sites (7,555,921 ha).

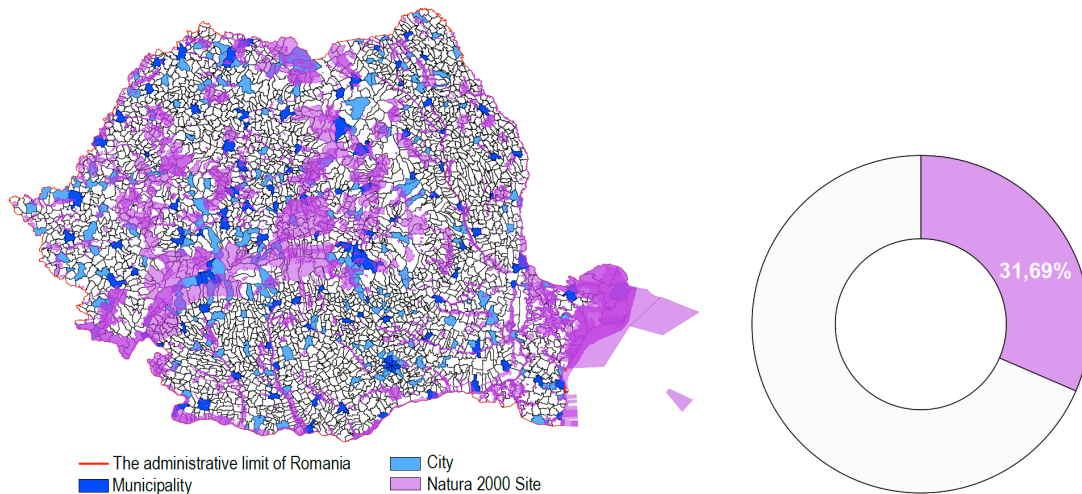


Figure 3. Natura 2000 Sites in Romania and the percentage of spread at the national level.

The arrangement or spatial relationship of Natura 2000 sites with urban settlements differs from case to case and may have different intensities, depending on their location and the type of connection between the natural area and the urban fabric. Using the intensity of connections as the main analysis criteria, the relationships were classified as follows: weak relationship - in the case of natural protected areas near the urban settlement, medium relationship - for natural protected areas tangent to the urban settlement, strong relationship - in urban settlement and very strong relationship - when one of the two is completely overlapping the other (Figure 4).

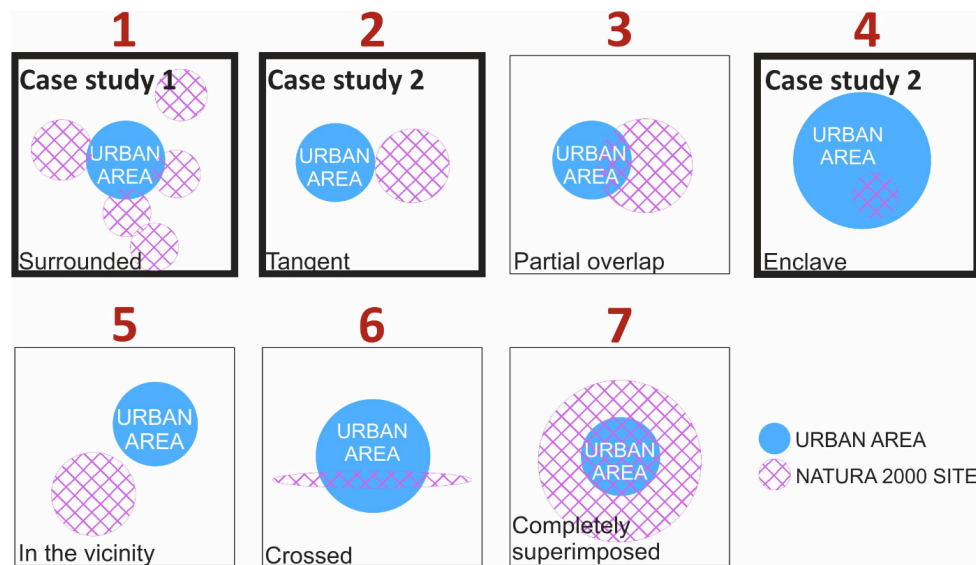


Figure 4. Typologies of spatial relation of urban settlements with Natura 2000 Sites

3.1.2 Types of location of Natural Parks in relation to the cities

Compared to the Natura 2000 Network, the Natural Parks are much smaller in number and occupy a much smaller area. According to the National Agency for Natural Protected Areas, out of a total of 1574 natural protected areas, only 14 are Natural Parks, and only one of these is a natural urban park. Of the total area of the country, approximately 2.13% is occupied by Natural Parks (506,930 ha).

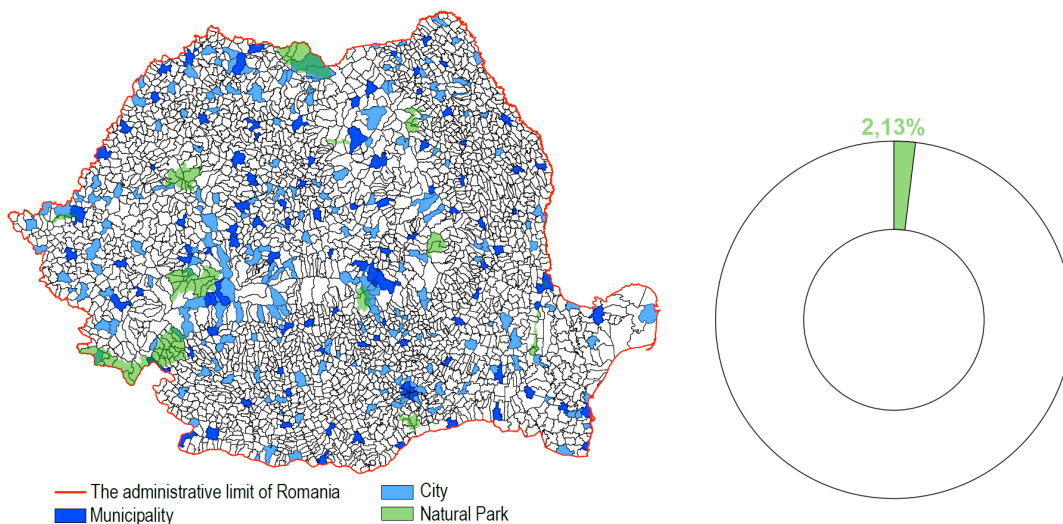


Figure 5. Natural Parks in Romania and the percentage of spread at the national level.

The ways in which the natural parks relate to the urban fabric are, in most cases, similar to those mentioned for Natura 2000 sites. What is interesting to note is that although there is only natural urban park at national level, there are numerous and different situations in which natural parks relate to the urban environment (Figure 6)

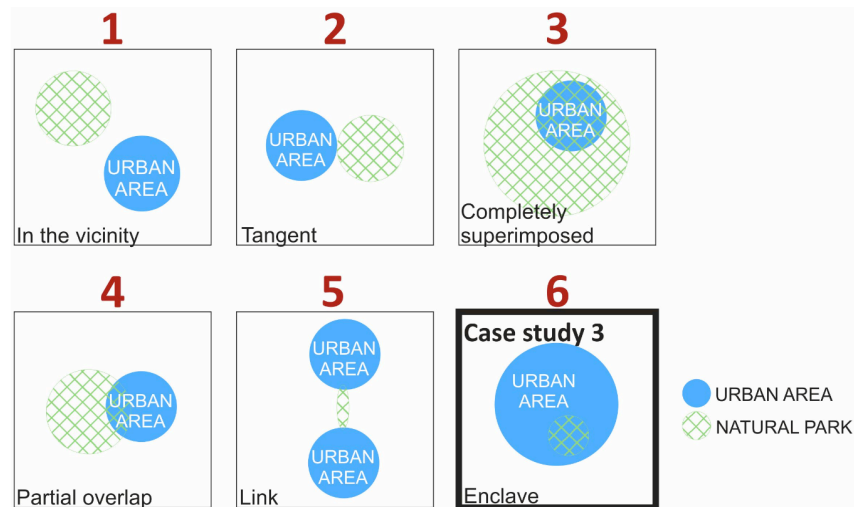


Figure 6. Typologies of relation of urban settlements with Natural Parks.

3.2 Case studies

3.2.1 Natura 2000 Sites

In order to illustrate such different ways of relating between Natura 2000 Sites and the urban environment, but also to obtain a clear image from the point of view of the way in which the management of such a type of protected area is carried out, two case studies were chosen, which comprise three different natural protected areas as morphology and as a way of location at zonal level (in relation to the urban settlement) and at national level. The first area is located in western Romania, and the other two (analyzed simultaneously and together) are located in the east (Figure 7).

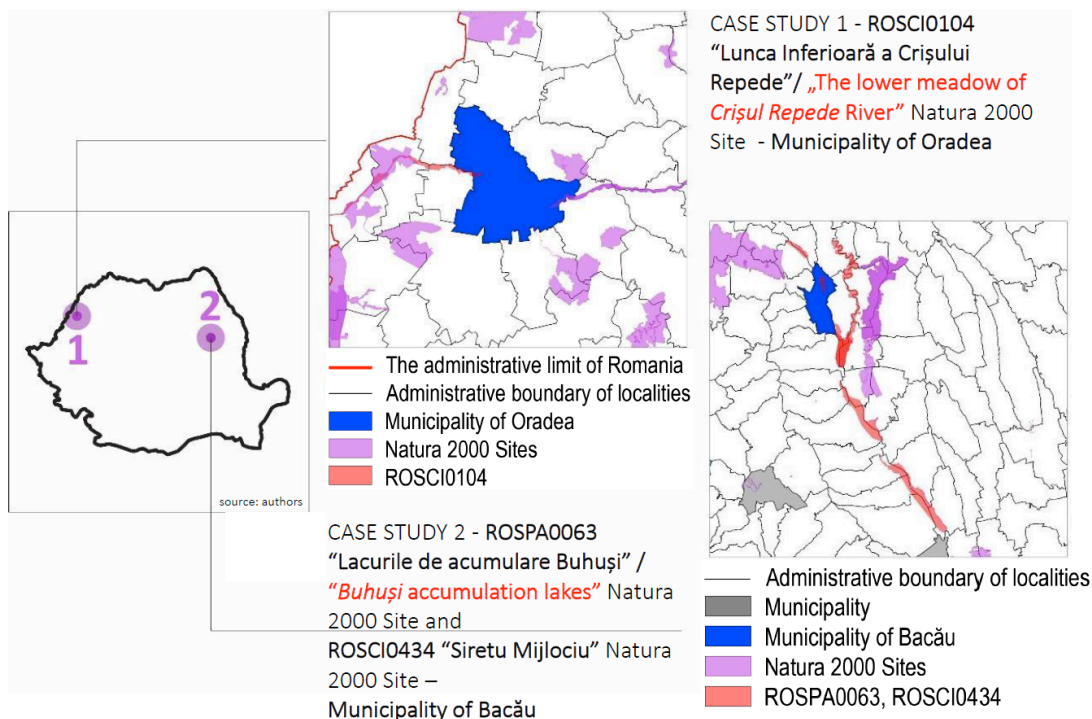


Figure 7. Natura 2000 Case Studies

The first case study analyzes an area of SCI type - area ROSCI0104 “Lower meadow of Crișul Repede”, which is partially overlapping with the municipality of Oradea in its western part. From the management point of view, the area is privileged, because it has its own normative act - a management plan. Through this management plan valuable information is provided on the resources of the area, the characteristic species and habitats and their spread in the territory. However, the plan strictly addresses the territory within the boundary of the protection area, without taking into account the context in which it is located and any existing or possible relations with the outside, or even with other natural protected areas in the vicinity. From this point of view, the municipality of Oradea has a special location within the Natura 2000 Network, being related (located in the vicinity or partially overlapping) with eight Natura 2000 Sites, which are arranged relatively on the perimeter of the administrative area of the municipality. The relationship between the ROSCI0104 area and the urban fabric is completely ignored in the management plan, so there is no act to differentiate between this area or any other area that is not related to an urban settlement.

The second case study simultaneously addresses two areas: a SPA type area - ROSPA0063 “Buhuși accumulation lakes” and a SCI type area - ROSCI0434 “Middle Siretu”. The reason they were approached together is their different character and different relationship in relation to the same urban settlement (Figure 8). The ROSPA0063 site is a multi-site (consisting of several sites scattered throughout the territory) and includes a portion that is tangent to the municipality of Bacău, in the south, and a portion that is arranged as an enclave in the urban fabric, in the north. The site ROSCI0434 partially overlaps with the site ROSPA0063 and is also tangent to the municipality of Bacău, in the southern area.

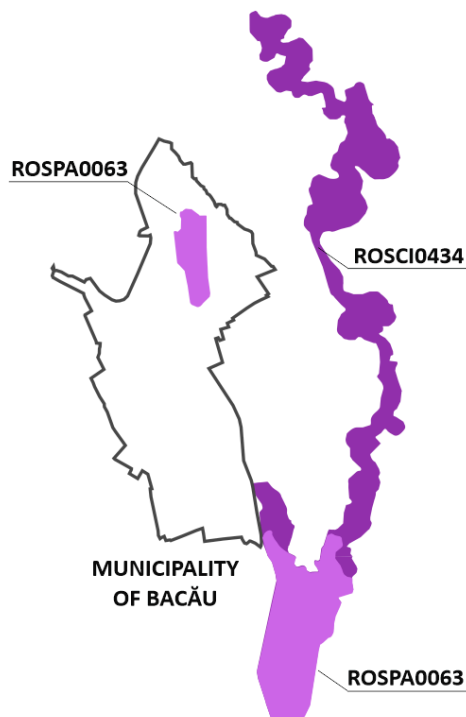


Figure 8. The arrangement of the analyzed areas in relation to the municipality of Bacău.

Unlike the first case study, the two Natura 2000 Sites do not have a management plan. The only official source of information about the two areas is the Natura 2000 Standard Forms. The information provided through these forms is presented only in written form, without being located in the territory. Similar to the first case study, the relationship with the urban environment is not addressed and regulated in the case of these two areas.

3.2.2 Văcărești Natural Park

The third case study presents the situation of the only urban natural park in Romania - Văcărești Natural Park. This area is located inside the urban fabric of Bucharest (Figure 9). The park was recently declared a natural protected area, in 2016, by Government Decision no. 349/11.05.2016. It is interesting how it has formed over time. During communism, this space was dedicated to the construction of a hydrotechnical arrangement to protect Bucharest against floods, similar to Lake Morii, located in the western part of the city. For the construction of Lake Văcărești, the houses on the surface of the current park were demolished and the perimeter dam was raised, which currently represents the limit of the natural protected area. Its construction was completed in 1989, before the fall of communism in Romania, and then it was abandoned. Over time, nature has regained control of the area once destined for the lake and is now recognized especially for the bird species that land here during the migration season. Although the park has been declared a natural protected area, it is still subject to pressure - fires that spread very quickly, illegal waste storage, real estate pressure, poaching (Merciu *et al.*, 2017). The Văcărești Natural Park is still unknown to some locals, who say that they pass by the dam that surrounds the park every day, but they still don't know what is beyond it. Declaring the park as a Natural Protected Area was a long and extensive process. One of the main causes was its special character, which does not resemble that of any other natural protected area in Romania. Finally, it was declared a Natural Park category V IUCN, being the first such area located in a city in Romania.

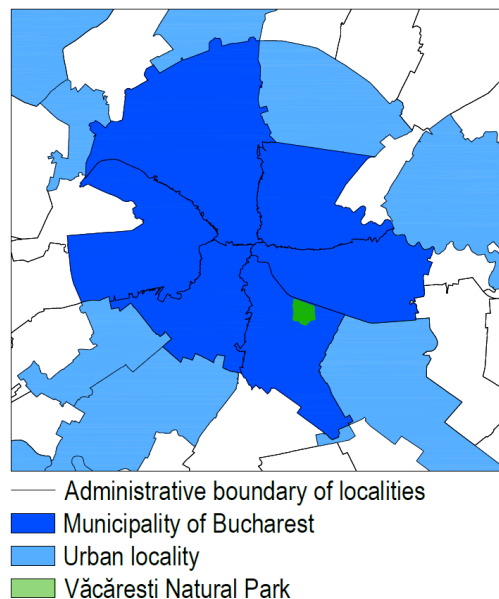


Figure 9. Framing the Văcărești Natural Park in Bucharest

The management plan of the Văcărești Natural Park is in the process of elaboration. In its absence, the website of the area lists only a set of "minimum protection and conservation measures" - divided into urgent measures and long-term measures. Urgent measures aim at eliminating or reducing the pressures to which the park is subjected (fires, poaching, fishing, waste storage, cutting and harvesting timber), providing security, arranging minimum visiting infrastructure, limiting access to areas where colonial birds nest, conducting studies and collecting data necessary for the preparation of the management plan. Long-term measures include: planting trees to ensure a suitable habitat for bird species characteristic of lowland forests, protecting reed areas, updating inventories for species present in the park, conducting thematic courses, conserving favorable habitats for endangered species. community interest.

The Văcărești Natural Park Association supports the public's involvement in the park's projects. Those who want to get involved in the activity of the association, can become volunteers/"urban rangers", by filling in a registration form, available on the park's website. Those who want to take part in projects as visitors to the park, or just to participate in one-off events, can consult the list of projects available on the website. There is also the possibility to become a shareholder by redirecting a percentage between 2% -5.5% of the income tax.

All these ways of involvement are presented on the website of the Association (<https://parcnaturalvacaresti.ro/>) - the main way of providing information and of acknowledging citizens on how they can contribute to the conservation of the park. The site provides the public with information about the flora and fauna of the park. This information is, however, of a general nature, and is not located in the territory.

A transdisciplinary approach to the park's relationship with its immediate vicinity and connection to the city is needed, including as historical, evolutionary, community, memory of the place, correlated with opportunities, risks and ethical values that may result in the integration of this "sensitive" natural area. In a difficult area of urbanized anthropic landscape (Craciun and Acasandre, 2015). With a "character resulting from the action and interaction of natural and/or human factors", landscape management includes "actions aimed, in a sustainable development perspective, at maintaining the landscape in order to direct and harmonize the transformations induced by social, economic and environmental developments" (Committee of Ministers of the Council of Europe, 2000).

3.2.3 Comparison of the case studies

The management plan is the most important document that regulates possible activities within a natural protected area and can significantly contribute to the conservation process. However, the analysis of the three case studies presented above shows that the way the area is managed and the custodian/manager approach can have a much stronger impact. In the case of the first area, although there is a management plan, it does not deal with the context. The next two Natura 2000 sites, presented in the same case study, are in the most unfavorable situation, not having a management plan, but only information in written form. The latest case study, Văcărești Natural Park, is the most privileged from the management point of view, probably also due to

its favorable location in the capital. Although the park does not yet have a management plan, it is managed in an exemplary manner by the association, being the perfect place to carry out actions with the theme of ecology, environmental protection, or any other related topics.

4. Management principles and decisive factors in the quality of management

Being the only document that regulates the protection of natural protected areas, the management plan should be adapted primarily to the context of that area. This is even more important in the case of natural protected areas in urban areas, especially in the current circumstances where there is no law dedicated to this type of area at national level. The management plan should include the main directions of the conservation strategy, but taking into account the context of the natural protected area.

As noted in the case of Natura 2000 sites and natural parks, in Romania they are arranged in different ways in relation to the urban fabric. Depending on the morphology of the area, the degree to which the urban fabric has effects on the natural protected area can be established. A natural area in the vicinity of the urban environment will be less affected by the urban fabric, as opposed to another area arranged in the form of an enclave in the urban fabric. Another criteria that can reflect the degree of relationship between a natural protected area and the urban fabric is the “collage” specific to the area in the vicinity of the natural area - defined by the functions in the area, activities, flows or building density. All these criteria that define the state of conflict between the urban fabric and the natural protected area must be found in the management plan for an area in the urban environment.

The approach in the management of the Văcărești Natural Park focuses on the involvement of the public and especially of the children. In an interview with architect Kate Orff, the mayor of Lexington said that “if you can excite the kids about a project then you’ve got a great chance of exciting the parents and citizens” (as cited in Orff, 2016). Involving the population in the process of conserving a natural protected area is an action that supports mutualism. Public participation can give the feeling of belonging to the place through the direct involvement of the locals, so the benefits are bilateral. Marketing and involvement of those interested in the conservation process can have a strong impact on the benefit of the natural protected area and should be taken into account in drawing up the management plan for that area.

5. Conclusions

Recent legislative changes affecting the management of natural protected areas in Romania have further complicated the process of protection and conservation of these areas. Currently, all natural protected areas in Romania are under the responsibility of a single institution, whose staff cannot manage such a large volume of work. Moreover, even if there are enough staff, it is very important to know the area and its surroundings, so that the management plan can be adapted to the context. The fact that at national level there is no law with strict reference to natural protected areas in the urban environment makes the process even more difficult - natural protected areas in the urban environment or in the vicinity, are treated similarly to areas that are not

located in the vicinity of the urban environment. Legislative issues related to custodians or legislative acts affecting natural protected areas in the urban environment are not the only dilemma in the management of areas. The management plan - the only act that regulates the conservation of the area, should be indispensable in the case of each protected area. In reality, only a very small percentage has a management plan and yet, often the relationship with the context (implicitly, with the urban fabric) is completely neglected or even completely ignored.

The importance of green spaces and urban heritage landscape areas is becoming very important today, including from the current perspective, the situation generated by the COVID-19 pandemic, which has produced major changes in human settlements. The lockdown, probably the most drastic measure imposed, has led to a very sharp decline in human activity - this is visible, especially in the urban environment but has also had ethical effects, related to raising the quality of life in urban areas and the right to landscape of each individual and of the community.

References

Allen, S. (2011), *Urbanisms in the Plural: The information Thread*, in *Fast-Forward Urbanism. Rethinking Architecture's Engagement with the City*, 53, editors: Cuff, D. & Sherman, R., Princeton Architectural Press, New York.

Committee of Ministers of the Council of Europe (2000), *The European Landscape Convention of the Council of Europe*, Strasbourg, France.

Craciun, C. (2016), *The Natural, and Cultural Landscape Between Space and Time. Case Study: The Lost Gardens of Bucharest*, Space and Time Visualisation, (ed: Boștenaru-Dan, Maria, Crăciun, Cerasella), Earth Sciences & Geography, Springer.

Craciun, C., (2008), *Urban Metabolism. An Unconventional Aproaches of Urban Organism*, [Metabolismul urban. O abordare neconvențională a organismului urban], "Ion Mincu" University Publishing House, Bucharest, 2008.

Craciun C., & Acasandre, A. (2015), *Opportunities, Risks and Ethical Values in the Integration of a Sensitive Natural Area in a Difficultly Urbanized Landscape Zone. Case Study Research: Văcărești Natural Park*, in *Multidimensional Education and Professional Development. Ethical Values – MEPDEV*, Târgoviște.

Craciun C., & Acasandre, A. (2016), *"LANDSCAPE RIGHT" and "RIGHT TO LANDSCAPE"*. *Landscape as a Tool of Meta-ethic and Multidimensional Education in the Knowledge Society, Multidimensional Education and Professional Development, Multidimensional Education and Professional Development. Ethical Values – MEPDEV*, Targoviste.

Cuff, D., & Sherman, R. (2011), *Fast-Forward Urbanism. Rethinking Architecture's Engagement with the City*, 29, Princeton Architectural Press, New York.

Merciu, F. C., Sîrodoev, I., Merciu, G., Zamfir, D., Schvab, A., Stoica, I. V., Paraschiv, M., Saghin, I., Cercleux, A. .L, Văidianu, N., Ianoș, I. (2017), The "Văcărești Lake" protected area, a neverending debatable issue? *Carpathian Journal of Earth and Environmental Sciences*, 12(1), 463-472.

Muja, S. (1994), *Development of green spaces in support of environmental conservation in Romania* [Dezvoltarea spațiilor verzi în sprijinul conservării mediului înconjurător în România], 66, Editura Ceres, București.

Emergency Ordinance no. 75/2018 for the amendment and completion of some normative acts in the field of environmental protection and the regime of foreigners [Ordonanța de urgență nr. 75/2018 pentru modificarea și completarea unor acte normative în domeniul protecției mediului și al regimului străinilor].

Orff, K. (2016), *Toward an Urban Ecology*, 67-83, Monacelli Press, New York.

Ioja, C. I., Pătroescu, M., Rozylowicz, L., Popescu, V. D., Vergheș, M., Zotta, M. I., & Felciuc, M. (2010), The efficacy of Romania's protected areas network in conserving biodiversity. *Biological Conservation*, 143(11), 2468-2476.

Petrișor, A.-I., Andronache, I. C., Petrișor, L. E., Ciobotaru, A. M., & Peptenatu, D. (2016a), *Assessing the fragmentation of the green infrastructure in Romanian cities using fractal models and numerical taxonomy*, *Procedia Environmental Sciences* 32:110-123.

Petrișor, A.-I., Meîță, V., & Petre, R. (2016b), Difficulties in achieving social sustainability in a biosphere reserve. *International Journal of Conservation Science*, 7(1), 123-136.

Petrișor, A.-I., & Andrei, M. (2019), How efficient is the protection of biodiversity through natural protected areas in Romania? *Oltenia. Studii și comunicări. Științele Naturii*, 35(1), 223-226.

Pricope, F., & Paragină C. (2013), *Conservation of biodiversity and ecodiversity [Conservarea biodiversității și ecodiversității]*, 7 p., 20, Editura "Alma Mater", Bacău.

Rogers, R. (2005), *Towards an Urban Renaissance*, 30, Taylor & Francis e-Library.

UAUIM, ANM, Nemetschek Romania Sales & Support S.R.L, eSolutions Group, The University of Bucharest (2017), REDBHI: Research study: "*Reducing Urban Heat Island Effects to Improve Urban Comfort and Balance Energy Consumption in Bucharest* - REDBHI, PN-II-PT-PCCA-2013-4, Domain 3: *Environment, Research Field, 3.4 Territory Landscaping. Infrastructure and utilities, Thematic area: 3.4.6 Natural and technological hazards; research on risk assessment and impact studies*", Bucharest, Romania.

Welter, V. (2002), *Biopolis. Patrick Geddes and the City of Life*, 93, The MIT Press, Cambridge.

Website of the National Agency for Natural Protected Areas (<http://ananp.gov.ro/>)

Website of the Vacaresti Natural Park Association (<https://parcnaturalvacaresti.ro/>)

Contact emails: atena.garjoaba@gmail.com
cerasellacraciun@gmail.com
alexandru_petrisor@yahoo.com