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HYDROLOGICAL HERITAGE WITHIN PROTECTION OF GEODIVERSITY IN SERBIA - LEGISLATION HISTORY

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Abstract: The paper presents a summary of the history of development of legislation in the field of geodiversity in Serbia. An important segment of this theme is the relationship of man to the protection of water and its phenomena - hydrological diversity and hydrological heritage. Although the historical development of nature protection as complex, socially significant, professional and scientific field is relatively long and in a sense shows the constant progress, the fact is that today's legislation in this sphere unreasonably delays for the reality and needs, and this is especially noticeable when comes to protection of geodiversity and water phenomena - hydrological heritage. This paper, through the attempt of the representation of development of a broad field of the geodiversity and hydrological heritage protection in the light of its legal and institutional introduction into social frameworks, in particular points to the existing problems that are reflected in the current regulation - the Nature Protection Act.

Key words: water–water phenomena, geodiversity, hydrological heritage, law, nature conservation

Introduction

The special relationship of man to water, which is primarily a result of the need, as well as complex characteristics and values of this most precious substance on Earth, is the main cause that the protection of water and water phenomena, as a significant segment of nature conservation and geodiversity, has a long history in the territory of Serbia. Preservation and protection of water and water phenomena are the ultimate goal of the hydrological heritage, new topics in hydrology – the protection of water resources², also the separate area within the geoheritage, which put in the centre of interest the hydrological diversity of a certain area, investigating it, evaluating and separating from it the extreme segments, representative water phenomena - hydrological heritage sites (Simić, Gavrilović, & Belij, 2010). *Hydrological heritage is part – a segment of the*

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² Hydrological heritage is a sub-whole within the Protection of the water resources, which is an integral part of Water Management, the complex field of Hydrology.

hydrological diversity of an area, which among the abundance of other water phenomena and objects stands out with its importance (value), which can be reflected in the environmental, resource, scientific, educational, socio-cultural and aesthetic terms (Simić, 2009).

The development of idea about the protection of geodiversity that can be discerned from the records, documents and other sources, which are interpreted, analyzed, compared and commented in this paper, should be a good illustration of the claim – that the protection of water and water phenomena, hydrological heritage, is its inherent – elementary part. This, once again, would confirm the thesis of one-sided approach to this area – until recently generally present and accepted in much of the expert public, which, reducing geodiversity and equating it with geologic diversity, overlooked and excluded some of its component segments, such as the diversity of hydrosphere – the hydrological heritage. The corresponding legislation is also in the complex field of nature protection – geodiversity and hydrological heritage, necessary and valuable link (and tools), which should facilitate the existing theoretical and scientific knowledge to be transformed and concretized – revived in practice, which would in fact represent the transformation of these ideas – from individual awareness to social consciousness.

"Water as an essential condition of life and survival of all humans and ecosystems in nature, as the most important environmental factor and a necessary prerequisite to any economic development, is primarily protected through legislation" (Belij & Simić, 2007). In Serbia, there is a large number of effective laws, regulations and rulebooks that attempt to regulate the entire field of waters: Water Law, the Law on the exploitation and protection of water supply sources, Spas Law, Law on the protection and sustainable use of fish stocks, the Regulation on categorization of water streams, Rulebook on the manner of determining and maintaining the zones and belts of the sanitary protection of facilities for drinking water supply, Regulation on the hygiene of drinking water, Plan for the protection of water from pollution and others. *It is important to emphasize that protection of hydrological phenomena (sites) - hydrological heritage is different from the protection of water in general. Hydrological heritage protection is not just another chapter in the general protection of water but is, above all, a segment of nature (geodiversity) - water is one of four macro-components of the natural environment, and (in this issue) it should be viewed as a part of nature, not as a resource, need ... Therefore, today, the importance of some legislations relating to waters is subordinate for this theme, and there are many, but it is of utmost importance the position of water and water phenomena within the Nature Protection Act.*

The path that led from the first knowledge of the need of nature conservation to modern society - with the Nature Protection Act, was long. Awareness of the importance and necessity of preserving nature and its basic parts, matured slowly, with the development and progress of society. Practically from the very beginnings it was clear that this area has to be formalized - to be introduced in the social frameworks through the establishment of legislation.

Fragments of Dušan's Code - article 123 "About the Saxons" and the Law on the holes from the time of Despot Stefan Lazarević (1412) which provided ways of regulating the ownership, and ways of use of mineral resources (Nojković & Mijovic, 1998), dealing with the issue of exploitation of natural resources - forests and mines, also testify to the existence of a clear awareness of the importance of nature conservation and geodiversity and indicate how the social system of medieval Serbia was developed. However, it can be spoken about the beginnings of organized labour on the protection of geodiversity and water and its phenomena much later- after the formation of an independent state of Serbia in the XIX century.

Protection of Geodiversity in the Period of Acquisition of State Independence of Serbia until the Second World War

By gaining independence Serbia worked on the formation and establishment of the state legal system through the entire XIX century, so the nature, the relationship of man and society towards it and ultimately its protection, including protection of some components of geodiversity - came on line as a significant theme.

In 1859 Prince Miloš issued an interesting order that "Avala must be fenced in order to be saved from ruin." This is the first written record that speaks about the awareness of the need to preserve the natural values of this "mountain of Belgrade". Avala is now protected as a natural area - the area of outstanding features. The 1866 is particularly significant because of the adoption of the Mining Code, the first modern legislation dealing with the use of geodiversity - the lithosphere. From this time dates the first protected area on the territory of Serbia, Obedska bara, which was placed under the (supposedly) strict protection by the former military commander of Croatia and Slavonia, Baron Molinari in 1874 (Belij, 2007). Today, Obedska bara is protected natural area - Special Nature Reserve, and is also an object within the IV group of hydrological heritage of Serbia - "Marshes, swamps, oxbows and moors".

The period of stabilization of the Serbian state, the second half of the XIX and first decade of the XX century was marked by the rapid development of natural disciplines. There were relatively numerous and significant pioneers of natural sciences: Josif Pančić, Vladimir Karić, Jovan Cvijić, Jovan Žujović and many others, who not only laid the foundations of biological, geological and geographical science, but were also responsible by specific activities for the beginnings of creating a new awareness of the importance of natural values in their essential, fundamental sense, not looking at them as a resource to meet the existential or economic needs of man. This most probably was a crucial moment in the development and consolidation of idea about nature conservation and geodiversity as its integral part. Yet superficial analysis creates a picture that their works, thoughts and consciousness went far ahead of that time. The legislation, which in new, yet well-kept state systems was the only one that as much as possible could be a guarantee that some rules would be respected, was trying to a certain extent to follow the new requirements and needs when it comes to this issue, but it is (expected?) significantly lagged behind.

One of the important events in the formation of awareness of the uniqueness and importance of objects of "non-living nature", which undoubtedly influenced the understanding of the need to pass appropriate legislation in this area, occurred in 1924. Then from the Natural History Museum (Museum of the Serbian Land), whose director was Academician Petar S. Pavlović, came a proposal for the protection of Lazareva (Zlotska) cave near Bor, as a finding of fossil remains of cave bear (*Ursus speleus*) and other Quaternary mammals. This was one of the first geoheritage sites of Serbia, protected in 1949 (Jovanović, 1995/97).

What should also be highlighted from this period is "the Order of the preservation and maintenance of the historical, scientific, artistic values, natural beauties and rarities that are to be declared as such" from 1930. This is one of the first pieces of legislation that referred solely to the protection of cultural monuments and natural rarities due to their core values, and they were not observed in terms of the needs of an individual or society (Popović, 1951). Until the Second World War there was no specific law on protection of nature, but certain terms on this matter were incorporated into other laws in passing. Thus on the basis of article 100 of the Financial Law of the Kingdom of Yugoslavia from 1938/39, a Regulation was adopted on National Parks ("Official Register", no. 128 of 10 June 1938) (Popović, 1951). S. Nikolić (1984) adds that "under the terms of this Regulation, however, there was not any national park declared in former Yugoslavia."

Throughout this period, water, and at first its use has been a subject or a part of many laws. In 1905 Act was passed on use and regulation of water of the Kingdom of Serbia, and in 1914 Law on spas, mineral and hot waters, which "covered the prohibition of improper management of forest, that is, vegetation resources of a spa complex" (Đurđić, 2006). All these laws – from the laws dealing with the use of resources: on the mining, agriculture, spas to the general Law on waters - referred to water, it is one of their (more or less important) issues. However, without ignoring the clear progress in understanding the importance of general nature conservation, it was necessary to wait for new legislation (on the protection of nature and natural rarities), which would fully encompass the field of the protection of water and its phenomena, as well as the protection of overall geodiversity.

Beginning of Organized Introduction of Legislation in the Field of Nature Protection (Geodiversity)

After the Second World War, in 1945, in what was then Democratic Federal Yugoslavia, for the first time passed a law in which terms all former knowledge and actions were collected on the protection of nature and natural rarities. It was the Law on the protection of cultural monuments and natural science rarities of Democratic Federal Yugoslavia ("Official Register of DFY", no. 54/45). How valuable is it for the spreading of idea of geodiversity and geoheritage and highlighting of their importance in conservation, speaks article 1, in which the first legal definition of natural rarities was given: "Natural rarities of zoological, botanical, geological and palaeontological, mineralogical-petrographic and geographic character no matter where they belong and in whose possession they are, can be placed under state protection". In the same year was passed a regulation for the enforcement of this Law ("Official Register of DFY", no. 88/45), where in section 2, the fixed and mobile natural rarities of zoological, botanical, geological and palaeontological, mineralogical-petrographic and geographic character include: "objects such as caves, cave ornaments, cave organic world; rare and extremely beautiful creations of thermo-mineral waters at spas and mines; rare erosive and denudation forms of relief; parts of the mines that are extremely important in scientific and educational terms; the more important fossil sites; very interesting springs and sources (intermittent springs and others); deposits of rare minerals and rocks; fields, landscapes and areas; parts of the terrain; pits; gullies, dolines, rocks, blocks, etc., endemic and relict forests, shrubberies, pastures, steppes, water pools, etc. ..." - which from today's perspective of hydrological heritage and geoheritage in general represents a very diverse list of objects.

New Law on the Protection of Cultural Monuments and Natural Rarities of the Federal National Republic of Yugoslavia was passed in 1946 ("Official Register of the SFRY", no. 81/46), and later on the basis of it the republic laws were enacted, as it was done in 1948 by the National Assembly of Serbia ("Official Register of N.R.S." no. 54/48) (Popović, 1951). Thus the formal and legal conditions were acquired for the protection of the entire natural heritage of Serbia. That same year, upon the proposal of the Committee for Scientific Institutions, the University and High Schools, the Government of the National Republic of Serbia established the Institute for Protection and Scientific Research of the Natural Rarities of the National Republic of Serbia (Decision of the Presidency of the Government of Serbia, no. 286 of 30 April 1948). The task of the Institute was "finding, testing, protection and scientific study of natural rarities in the NR of Serbia, as well as other functions as the General Law for the Protection of Cultural Monuments and Natural Rarities entrusts to the national republics" (Čolić, 1951).

As a result of organized and systematic work on the protection of nature and in accordance with it - the development of legislation in this area, declarations of protection of new natural resources occurred. Thus, in the first years of the Institute except forest reserves and individual trees (in Belgrade), many geoheritage sites of Serbia were put under the protection. *The first protected geoheritage site, nowadays the site of geomorphologic and hydrological heritage, was the waterfalls (Velika Ripaljka and Mala Ripaljka) in Sokobanja – 1949, the first natural monument in Serbia.* That same year, several speleological sites were protected: Prekonoška cave, Ravna cave, Propast sinkhole, Gaura-Mare-Velika cave, Radoševa cave, Velika Atula, Lazareva (Zlotska) cave and the Lazareva river canyon. In 1950 Petnička cave was protected. In the years that followed caves were mostly protected among the geoheritage sites, and it was only later that it began with the protection of karst springs, intermittent springs, waterfalls, geological (and loess) profiles. Many of the sites did not enjoy special protection because they are found within larger protected sites - reserves, nature parks, national parks, etc. (Belij, 2008)

In 1961, a new Law on Nature Protection was enacted. By this law the protection of natural rarities was transformed into the integral protection of parts of nature, and then as categories of protected geoheritage sites the following stand out: national park, nature park, nature reserve, monument of nature and natural rarity (Mijović & Nojković, 2001). Later a new law was passed in 1975, which underwent two amendments in 1981 and 1988, until a complex Law on the environmental protection in 1991, which dealt with the protection of nature.

The Law on Environmental Protection from 1991 ("Official Register of the Republic of Serbia" no. 66/91) was a contemporary and a necessary basis for actions not only to preserve and protect nature, but also to its use (Nojković & Mijović, 1998). "This law regulates the system of protection and improvement of environment, determines the precautionary measures, the procedure for the protection and management of protected areas, the measures and methods of protection from harmful effects of activities on the environment, the funding of the protection and improving of environment and the organization in carrying out tasks on the protection and improvement of environment"(Article 1). This law, which was to a certain degree altered by adopting the new Law on Environmental Protection in 2004 ("Official Register of the Republic of Serbia", no. 135/04), was put out of effect in 2009, and parts on nature protection are covered by the Nature Protection Act.

Protection of Geodiversity, Water and Water Phenomena – Hydrological Heritage within the Current Nature Protection Act

Nature Protection Act from 2009 ("Official Register of the Republic of Serbia", no. 36/2009) was supposed to be one of the bases for the development of this field: "This law regulates the nature protection and conservation, biological, geological and landscape diversities as part of the environment" (Article 1 - "General Provisions"). Already in the first article in which the main subject of this law is presented, geological diversity is mentioned, which is then identified with the term of geodiversity and thus imprecisely defined: "6) *geological diversity (geodiversity)* is a set of geological formations and structures, phenomena and geological forms and geo-morphological characteristics of different composition and origin of the various paleoecosystems changed in the space under the influence of internal and external geodynamic factors throughout geological time "(Article 4 -"Definitions"). Geodiversity is the diversity of geographic layer (environment) which is the result of geological, geographical and anthropogenic influences (Lješević, 2002/2003), and *hence the geological diversity is just one segment of it* (Simić, Gavrilović, & Djurović, 2010). The result of this incomplete access to geodiversity also lies in the second section - "The object of protection", which deals only with "protection of geological diversity," and not the other segments of geodiversity and geoheritage: "The protection of geological diversity at the use and organization of space is achieved by implementing measures of nature conservation, geological and palaeontological documents, as well as geoheritage sites in terms of in situ and ex situ protection"(Article 23).

Hence it is no surprise that the assumed definition of geoheritage - a representative of geodiversity, is imprecise and incomplete: "7) geoheritage represents all geological, geo-morphological, pedological and special archaeological values created during the formation of the lithosphere, its morphological shaping and interdependence of nature and human cultures, which represent the overall geological diversity and have scientific importance for the study of the development of the Earth"(Article 4 -"Definitions"). Although the definition of geoheritage, except geological heritage, included "geo-morphological, pedological and special archaeological values", it is primarily related to the geological heritage (diversity) which is wrongly identified with the whole concept of geoheritage. This definition ignores the diversity of climate and hydrology, which are integral parts of geographic layer - thus the geodiversity, too, and which already exist in geoheritage as separate subjects of research and study (Simić et al., 2010). The question that logically follows is: "What may be legal regulations relating to geodiversity and geoheritage (and their protection), when they are based on incomplete and outdated definitions of basic terms?"

One could say that the previous observations are strictly professional remarks and cannot have a significant impact on the essence and meaning of the whole law. However, if in the same article 4 the definition of natural resources is observed, one can get a different impression: "60) *the natural values* are natural resources as renewable or non-renewable geological, hydrological and biological values, which, directly or indirectly, can be used, and have a real or potential economic value and natural goods as parts of nature that deserve special protection." It appears that this definition of natural resources, not only in terms of nature conservation or geodiversity, is completely unacceptable. It clearly identifies the natural values with the resources, highlighting their usability and economic value. The second part of the definition, in which the natural goods belong to natural values, and they really are due to their "geological, hydrological and biological values", is even more confusing. The question is: What can be the Nature Protection Act in which one of the main terms, such as the natural value, is defined as a resource, which "has a real or potential economic value", or more directly: *What to expect from the law, which basically observes the whole nature only as a resource that serves to meet the needs of man?* Is this an accidental omission and an indicator of incompetence of an author or something else? Whatever the answer is, these attitudes are, to put it mildly, inappropriate and can serve as a base of much broader misuses than it looks at first glance. It is also very indicative that in this definition of natural values - resources "that can be used directly or indirectly, "the law writers, in

contrast to the definitions of geodiversity and geoheritage, did not forget the hydrological values.

It should be noted that in this law only speleological sites, "public property owned by the Republic of Serbia", are in some way excluded from the wrong defining and generalizing of the geodiversity and geoheritage and have a separate place. This is confirmed by article 24 - "Protection of speleological sites," and article 25 - "Protection and use of speleological sites", in which the separated activities are prohibited in these unique geoheritage sites, such as: pollution of water streams, destruction of cave ornaments and sediments, fossils and artifacts, destruction of flora and fauna, disturbance of habitats and construction works that endanger geo-morphological and hydrological features.

There are very few words on the specific conservation of water and water phenomena in this legislation. Thus, article 18 aimed primarily to protect biodiversity ("Protection of forest, humid and water ecosystems and habitats within agro-ecosystems"), is only formally applied to the protection of water - water sites here are primarily in the function of habitat: "In the humid and water ecosystems, acts, actions and activities that jeopardize the hydrological phenomenon or the survival and conservation of biological diversity are prohibited."

Given that the water in the speleological sites is one of the basic elements and values, the first paragraph of article 25 partly refers to its protection: "In the speleological sites and their surroundings the following is prohibited: 1) to pollute waterways and sources, discharge, enter and leave the toxic substances, solid waste and dead animals, or deposit any type of waste on places and in such a way that can be incorporated into speleological site by running water or free movement."

Article 29 is very important for the protection of water and water phenomena, which gives the definitions of strict nature reserve and special nature reserve. It was pointed out that the "special nature reserve may be floristic, mycological, forest and other vegetation, zoological (ornithological, ichthyologic, etc.), geological, palaeontological, hydro-geological, hydrological and others." The creation of the hydrological - water reserve as a separate and new category within protected natural areas (nature reserves) is the need that will have as an ultimate goal and result the substantial water protection as fundamental and unique values of an area. The importance of water reserves lies in the fact that they entered into the classification of the hydrological heritage sites of Serbia as a separate subgroup within group II - Rivers. There are 33 water reserves

included there - the sources of river basins, which are directly taken from the Law on the exploitation and protection of the water sources ("Official Register of the Republic of Serbia" no. 27/77, 24/85, 29/88) (Gavrilović, Belij, & Simić, 2008). Protection of the source river basin areas as segments of nature would complement the protection of these areas, because it would protect the whole complex of the natural environment, not just water. The use of water resources in the future could potentially be one of the main functions of these goods, but only with the highest level of conservation of water and all other natural values (Simić, 2009).

The hydrological heritage sites have traditionally been under protection, representatives of natural monuments, which is confirmed by article 31, which is especially important for the whole idea of geoheritage: "Natural monument is smaller unaltered or partially altered natural spatial hole, object or phenomenon, physically well defined, recognizable and/or unique, of representative geomorphological, geological, hydrographic, botanical and/or other characteristics, as well as human labour formed botanical value of the scientific, aesthetic, cultural or educational significance." Selected types of natural monuments among which hydrological ones are included (although not all types of hydrological sites are listed precisely) only confirm their relevance, coherence and equivalence with the geoheritage sites: "The monument of nature may be geological (historical-geological and stratigraphical, palaeontological, petrological, sedimentological, mineralogical, structural and geological, hydrogeological, etc.), geomorphologic, speleological (cave, hole, etc.), hydrological (whole or part of the stream, waterfall, lake, peat moor, etc.)..." Amendments to the Nature Protection Act ("Official Register of the Republic of Serbia" no. 88/2010³) did not introduce anything new in terms of the protection of the overall geodiversity and hydrological heritage, because this issue was not dealt with. This means that its basic assumptions remained incomplete and inadequate. The only segment that has been changed in the law, and it reflects on this issue, is restoring the three basic regimes of protection that had been predicted by the previous Law on Environmental Protection, that is, the abolition of the two "sub-regimes" in the first degree of protection⁴: "The following protection regimes are established in the protected area:

³ The correction of the Law on the amendments of the Nature Protection Act, which is not significant for this paper, is published in the "Official Register of the Republic of Serbia", no. 91/2010 of 3 December 2010.

⁴ The following protection regimes were in the first version of the Nature Protection Act: I a-strict protection, I b-strict protection with the possibility of managing population, II-active protection and III-active protection and the possibility of sustainable use.

- I degree,
- II degree and/or
- III degree.”

Protection regimes are determined in dependence on the natural values of the resources, and in accordance with them appropriate measures are regulated for given space, introducing the mode of governance, that is, indicating which activities are allowed in the area, and which not. This is of utmost importance for the preservation and development of natural resource and its full and meaningful existence.

"The protection regime of the I degree - strict protection, is implemented in a protected area or its part with the original or slightly modified ecosystems of exceptional scientific and practical importance, enabling the processes of natural succession and preservation of habitats and living communities in the conditions of wilderness" (Article 35). Unlike the definitions of the protection regimes of the II and III degree that mention the geoheritage sites, the I degree protection regime does not foresee and mention the geodiversity nor geoheritage - it formally and essentially refers only to the living world. Unfortunately, this – bio-centric approach in nature conservation is a general term, long present and "domesticated" (not just in this region). Experts dealing with Earth sciences – geo-sciences are responsible for this to a certain extent, having previously shown less interest in this scientific field. However, at the end of the XX century, introducing the term of geodiversity by "re-emphasizing the unity of the two indivisible components of nature - "live" and "inanimate", they are trying to direct traditionally rooted bio-centric approach in the nature conservation towards the holistic one, which is the only proper and complete" (Simić et al., 2010). This task certainly will not be easy, because "traditionally, the protection of nature is synonymous with the protection of biodiversity." Therefore, it seems that the geo-conservation - protection of geodiversity and its shapes and forms will be "the forgotten half of the nature protection" for a long time, as it is almost poetically called by one of its founders, C. Sharples (2002). Hence, it should not be surprising nor justifying that the geodiversity and geoheritage have been wrongly defined and 'forgotten' in the Nature Protection Act of the Republic of Serbia.

From the above mentioned it follows that if article 35 is consistently adhered, certain parts of the natural (geographic) environment characterized by exceptional and unique values, geodiversity above all, will not be classified into this ill defined highest protection regime. This will not only deepen the already existing confusions caused by improper position of geodiversity in nature

conservation, but will create real problems in protection practice. It is hard to believe and accept that no remarkable hydrological heritage site of Serbia - the source, spring, waterfall, lost river ... or some other geoheritage site, does not deserve to be fully preserved and protected – by regime (protection) of the first degree, especially if we bear in mind the kind of "protection" provided by the regimes of the II and the III degree.

"The protection regime of the II degree - active protection, is implemented in a protected area or its part of the partially modified ecosystems of great scientific and practical importance, and especially valuable landscapes and geoheritage sites" (Article 35). Except the prohibitions of certain activities in protected area, this protection regime "limits regulation and damming of streams, forming catchments, melioration and other river engineering works, construction of hydroelectric power stations, solar power plants on bio-gas, tourist accommodation facilities, catering tourism, nautical tourism and tourist infrastructure and development of public resort, construction of transport, energy, communal utilities and other infrastructure, housing and economic structures of agricultural holdings, the traditional use of stone, clay and other materials to local needs, building ponds, facilities for conventional breeding of domestic animals and wildlife, fishing, hunting, collecting mushrooms, wild plant and animal species, forest management and forest land, the establishment of forest and agricultural monoculture, introduction of foreign species of wild flora and fauna of the region in which the protected area is and the application of chemical agents."

"The protection regime of the III degree - proactive protection, is implemented in a protected area or its part of the partially modified and/or modified ecosystems, landscapes and geoheritage sites of scientific and practical significance" (Article 35). The III degree protection regime, which is still open for various activities in the natural resource, "limits the construction of other industrial and power plants, asphalt plants, tourist accommodation and facilities of public resort, infrastructure facilities, warehouses of industrial goods and building materials, cottages, exploitation and primary processing of mineral resources, waste management facilities, construction of settlements and the expansion of their building areas, hunting and fishing, the establishment of forest and agricultural monoculture, use of chemicals and other works and activities that can have a significant adverse impact on natural and other values of protected area."

It is not difficult to notice that the term "restrictions" of certain activities within the protected areas - which make only 5.87 %⁵ of the total area of Serbia, in practice means that it is (more or less) allowed. The list and the nature of activities that are "limited" by the protection regimes of the II and the III degree is astonishing and shocking only viewed from the aspect of nature that should be the subject to this law. Therefore, it is superfluous to further analyze the real intentions of its compilers.

Finally, it is perhaps unnecessary conclusion that the new Nature Protection Act deals insufficiently with the topic of water protection and water phenomena. This also applies to other elements of "non-living part" of the natural environment – geodiversity. Also, many of the terms and basic assumptions related to the topic of geodiversity are inadequately defined, which calls into question their usefulness. The justification certainly must not be found in the fact that "the concept of geodiversity is something new in most countries" (Jojić Glavonjić, Milijašević & Panić, 2010). There are serious shortcomings and wrong starting points in the very approach to the main issue - the protection of nature. Therefore, one of the tasks and goals for further work on the protection of water phenomena and sites - hydrological heritage and other aspects of geodiversity protection and nature in general, is the amendments to legal regulations, for only thus it can be completely seriously addressed to the comprehensive and proper operation for their preservation and promotion in Serbia.

Conclusion

Although the legislations of medieval Serbia, parts of which are broadly related to the protection of nature and geodiversity - geographic environment, Dušan's Code and Law on the holes, were not applied directly to water and its phenomena, it did not endanger the assumption that water as life-giving element in this region was one of the first segments of the natural environment, which man, seeing its overall value, was trying to protect and preserve. Not diminishing the significance of these acts, the beginnings of organized labour in developing legislation on nature protection, geodiversity and hydrological heritage should be sought only in the time of the creation of an independent state of Serbia, in the XIX century. These "seeds" are expectedly consistent with the most significant period in the development of the complex field of nature protection, at the turn of the XIX into the XX century, which was initiated primarily by strong foundation and development of natural sciences in Serbia.

⁵ According to unofficial data of the Institute for Nature Conservation of Serbia.

However, institutional and systematic introduction to the social life of nature protection in the form of legislation had to wait for the post-war period. Then it came to its greatest prosperity, but also to approaching to the concrete needs of society.

The period after the World War II is characterized by outstanding work in both professional and scientific terms - "natural resources" were being discovered, explored and protected around the former country, and the legislation was being developed along with them, providing, promoting and enabling legal and social framework to such activities. At that time a lot was done to protect the "non-living world", now covered by the terms of geodiversity and geoheritage. The water phenomena also found their place in the protection and their importance as part of basic natural systems seemed to be better understood then, and their independent value as natural objects respected. This is confirmed by the first protected natural monument in Serbia in 1949, waterfalls (Velika Ripaljka and Mala Ripaljka) near Sokobanja - hydrological heritage sites today.

Unfortunately, the last decades of the XX century in line with general social trends – concerning also the nature conservation in Serbia, brought a slowdown, first in the professional sphere, and then in the appropriate legal and statutory regulations. This trend is present even today. Even the fundamental issues of nature protection in existing legislation, notably the Nature Protection Act, are not addressed appropriately. From the aspect of the geodiversity and hydrological heritage protection, except extremely outdated and incomplete approach to the subject, an unequal position has still been present, reflected in unchanged trend of identification of nature protection with the protection of living world, which is obviously reflected in the current regulation.

If we look in the protection of nature in Serbia today, except the stagnation in the professional sphere, the decline in the fundamental sense can also be observed – in the incorporation of nature conservation into the consciousness of the individual and general social awareness. Establishment of appropriate legislation is one of important preconditions, especially for the implementation of specific activities, but it is also unsatisfactory, since it is tightly conditioned by the general situation in this area. The overall status of nature protection in Serbia is not promising and it is just the expected result of the fact that the existing system is not very stimulating to this elementary – and therefore socially important sphere. Hence the position of geodiversity, geoheritage and hydrological heritage, which have recently been established and accepted as separate themes and disciplines in the profession - the protection of nature and in

science, is even more serious. The only way is faster, complex and properly oriented development, because the challenges that await them are great.

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