ACTA UNIVERSITATIS AGRICULTURAE ET SILVICULTURAE MENDELIANAE BRUNENSIS

Volume 62 82 Number 4, 2014
http://dx.doi.org/10.11118/actaun201462040799

POSSIBILITIES OF EVALUATION OF THE RECREATIONAL POTENTIAL OF CLOSE TO NATURE WATERCOURSES

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Abstract

LAMPARTOVÁ IVANA, SCHNEIDER JIŘÍ. 2014. Possibilities of Evaluation of the Recreational Potential of Close to Nature Watercourses. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis,* 62(4): 799–809.

Creation of close-to-nature river beds is one of the results of watercourses revitalization. Watercourses are segments in the country increasing its recreational potential.The recreational potential of watercourses contributes to rich diversity of animal and plant species. They are well-preserved natural environment with a different atmosphere and an interesting psychological effect. The current goal of revitalization measures in the landscape primarily consists of the optimization of landscape water regime, incl. flood control measures and the promotion of biodiversity, but the current philosophy speaks of multifunctional land usage. However, the revitalization is currently underappreciated in the Czech Republic and it is important to increase the recreational potential of the landscape. The subject of this article is evaluation of close to nature watercourses from the point of view of recreation potential. The example locality of close to nature watercourse is part of Váh river near Ilava city. In this area some elements of recreational potential by the proposed methodology are discussed. Two river courses make a possible comparison between a technical canal and a modified one, but close-to-nature water course with all parameters of river phenomenon. Properties of nature and close-to-nature watercourses could be an inspiration for repairing(modifying, adjusting) river stretches within urban space.

Keywords: close to nature watercourses, recreational value, evaluation methodology

INTRODUCTION

Water areas of rivers, ponds, lakes, excavated gravel pits, natural swimming pools are an important natural ecosystem used by humans for recreational purposes. From the natural, ecological point of view the main goal of revitalization should be revival of the river and its surroundings.

According to the research results e.g. Blažková (2014) or Dospíšil (2014), general public is in favour of the importance of watercourses alterations as an enhancing agent for the recreational potential of the area. For example here is one of the questions in the questionnarie within a public survey on public awareness of the Holásecká lakes revitalization in Brno. "How is it possible to improve the conditions for recreation in the Holásecká lakes revitalization in Brno?"

Respondents in their replies created a list of possible actions: Out of 78 respondents, 48% stated improving access to water, 34% mentioned a creation of new pools for swimming and recreation, 46% reported improvement of recreational effect due to vegetation planting, 56% would appreciate a creation of rest areas, 26% a creation of new information boards, 32% river permeability through constructed bridges and footbridges.

Over the past years many different restoration actions have already taken place for which considerable financial resources have been spent. This is in accordance with Vrána (2004)

one of the main reasons for the need to establish an objective method of effect evaluation of revitalization activities. It is desirable to develop a methodology for quantifying the success and effectiveness of restoration actions, which would clearly concretized the target state and the procedure to evaluate the effectiveness and success of implementation.

However the earlier evaluation of the importance of close-to naturewatercources from the point of view of recreation potential, is not systematic. As an example, effects and solutions of recreational utilisation of natural monuments Meandry Struhy near Pardubice (Schneider, Žaloudková, 2008) were evaluated within a management plan of this protected area. There are fragments of close-to-nature floodplain forest stands, a nature stream course and a tourist path for walkers, cyclists and horse riders in the same area. Old oak trunks are an important niche for rare beetle species and at the same time aesthetic dominants for visitors.

It is a small watercourse, but in such a good condition that it offers recreational opportunities for residents of Pardubice and Přelouče.

On the other hand, watercourse woody debris, an important part of the forest stand ecosystem, could be percieved as a mess from the visitor's point of view.

1: *A narrow unpaved trail for walkers and cyclists leads directly beneath the crumbling century-old oaks on the crown of the stream of natural bulwark Struhy (Schneider, Žaloudková, 2008)*

2: *Damming he Struha stream surrounded by accompanying vegetation (Schneider, Žaloudková, 2008)*

Currently there are several methods to evaluate the revitalization effect. For the purpose of evaluating the revitalization success are mainly used methods of expert evaluation. These of course vary according to the specific objectives and the nature of revitalization measures (Holl and Cairns, 2002).

Kupec, Schneider, Šlezingr (2009) emphasize, however, that none of these measures apply universally, and it is always necessary to take into account local conditions, the purpose and scope of revitalization. For a successful evaluation of the revitalization project it is necessary to know the status of the site before the revitalization, but it is not always available. For this reason, most methods work with "reference state", or are based on the expertise of the evaluator.Therefore the results of the methodologies are usually not quite exact. An objective assessment of the effect can be reached by evaluating the flow parameters before and after the revitalization.

The overview of the methodologies used to evaluate the revitalization effect actions on water elements are available, e.g. on the website of the Ministry of Environment.

Evaluation methodologies of the recreational potential are used to define a part of the territory, which may increase their attractiveness mainly for visitors and locals. The status of the area is evaluated and assessed in terms of importance for the quality of the landscape, which may be positive, neutral or negative. For the purposes of the landscape evaluation in terms of recreation potential, attractiveness and its use, the following methodologies are most often applied: Evaluation of the recreational potential by TERPLAN method (natural recreational potential of the landscape) (TERPLAN, 1974), Evaluation of the tourism potential (Vepřek, 2002), Methodological construction of evaluation of the tourism potential (Bína, 2002). Methods according to Vepřek and Bína evaluate the potential of tourism, which is based on the recreational potential of the landscape, but it also includes the currently preferred recreational activities.

As illustrated by Bergen *et al.* (1995) Arriaza *et al.* (2004) or Acar and Sakici (2008) the presence of a water element in the landscape scene makes a positive perception of it. Bulut and Yilmaz (2009) have examined the nature of the most preferred water elements and found that the most preferred element is a natural pond, which is a part of urban environment (e.g. a pond in the park). The least preferred element is the scene of a branched river bed in the open countryside. The authors see the reason for these preferences in a higher number of people living in cities, where the direct experience with urban type of water feature dominates, which reflects their preferences.

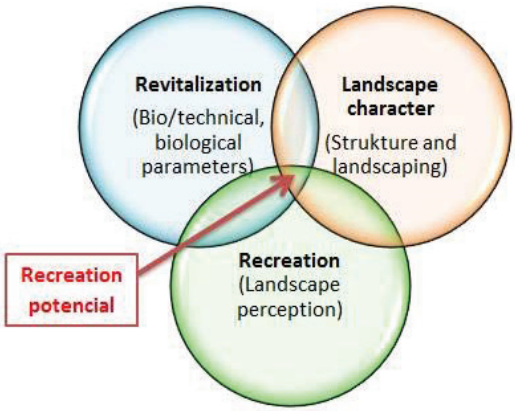
A part of the recreational potential of an area is the character of the landscape. Water features are an inseparable part of the landscape and contribute to its creation. Landscape character expresses natural, socio-economic and cultural-historical relations of the landscape characteristics. Taking care of the landscape must be applied even in urban areas, where the landscape is of an important value. It's not just protected areas and natural parks, but also waterway corridors, forest and agricultural land (Vorel *et al.*, 2004).

In the Czech Republic there is no precisely defined way in which the landscape could be assessed, but there is a wide range of methodologies from many authors. These include the works of Vorel, Bukáček, Matějka (2004), Löw, Míchal (2003) and others.

MATERIALS AND METHODS

The goal and the expected outcome of this work is to propose an ongoing methodology for the assessment of the importance of revitalization measures in terms of recreation potential of the landscape, and therefore their influence on the development opportunities of the region. This provisional proposal will be created on the basis of the analysis of practical examples of revitalization in the Czech Republic and abroad, field research, comparison and synthesis of existing evaluation methodologies. For the proposal of a methodological evaluation procedure of revitalization, evaluation indicators will be selected from methodologies for the evaluation revitalization actions, landscape and recreational potential of the area. See Fig. 3.

In terms of evaluation of revitalization measures on watercourses the following methodologies were chosen for the selection of evaluation indicators: Methodology (HEM) Hydroecological monitoring, (Langhammer, 2008), Evaluation methodology of implemented revitalization actions – Selected watercourses and small water tanks (Vrána, Dostál, Vokurka, 2003), Method of assessing the state of the riparian areas – QBR index of river quality (F. E. M. Research Group, 2000), Method of evaluation of the current state of riparian vegetation of the watercourse (Šlezingr, Úradníček,



3: *Scheme of recreational potential and its placement within overlay of landscape character, revitalisation and recreation*

2002). The overview of these methods was chosen on the basis of the the importance of the individual indicators (e.g. riparian vegetation, water quality, river bed morphology), as elements in urban areas and the surrounding landscape, which significantly enhance the recreational potential of the revitalized area. According to Kupec, Schneider, Šlezingr (2009) HEM methodology, by its full name Hydroecological monitoring, is nowadays applied as the official methodology of CR for evaluating the effectiveness of revitalization.

For the selection of evaluation indicators in terms of the landscape and the landscape character, Methodology assessing the impact of the proposed construction, activities or changes in land use on the landscape (Vorel *et al*., 2004) was chosen for this work. The author of this methodology perceives aesthetic value, as a key term in the evaluation of landscape quality, landscape composition and creation. The hallmark of the work of Vorel *et al*. (2004) is a greater emphasis on the evaluation of visual impact of the landscape. There is an effort to maximize the objectification of evaluation in order to create a maximum standardized procedure.

To evaluate the recreational potential of the landscape (tourism) the following methodology will be selected – the methodology TERPLAN (1974), according to the methodology by Vepřek (2002), and the methodology by Bína (2002), where the following issues will be selected: e.g. evaluation criteria by geographic, landscape-natural, cultural and historical values of the area. Specific criteria will be set for the evaluation of the observed indicators – recreational and aesthetic (e.g. sports facilities and trails, natural attractions, service facilities and their equipment, architectural and construction attractiveness, etc.) indicators for the landscape formation (natural, cultural and historical characteristics) technical and biotechnical elements of revitalization measures (e.g. the resulting character of the dam, bank reinforcement, character of the alluvial zone, accompanying vegetation plantings, etc.) The weight of these indicators and their criteria will be assessed in terms of the total recreational potential of the landscape and of recreational use. Finally, a table of evaluation indicators and their criteria will be set up. Subsequently, a proposal to create summarizing tables (field notebook) will be described in order to determine the overall effect of revitalization of recreational activities in practice. It will be possible to apply the proposed evaluation procedure to revitalization measures in urban environment and its surroundings.

Finally, some elements of revitalization measures will be discussed from the point of view of recreation potential of the river Váh in Iľava in Slovakia under the proposed methodology. This river was chosen for evaluation because of the fundamental changes in the stream in the past. However, despite all these adjustments, the river is nearing close-to-nature state at least. The Middle part of Váh river is an optimal model watercourse for comparing a technical canal and a modified one, but close-to-nature watercourse with all parameters of river phenomenon:

1. It flows parallelly in two watercourses with different parameters and recreational utilisation.
2. Surrounding landscape is long-time managed with various type of land-use.
3. Both watercourses are important parts of mid-large cities and villages urban areas (e.g. Trenčín or Piešťany).

RESULTS

The outcome of the work is to propose an ongoing systematic procedure for assessment of the relevance of revitalization actions in terms of the recreational potential of the landscape and their impact on the development opportunities of the region. The result is a complex evaluation table that contains indicators and their criteria. The selection of these indicators and criteria has been carried out on the basis of the analyses of practical examples of revitalization in the Czech Republic and abroad, field research, comparison and synthesis of existing evaluation methodologies. See Tab. I.

This table is assessed by a combination of two methods. Indicators and their criteria, which are the content of the assessment of the stated methodologies, are identified by the character „X“. Numerically, e.g. (1.1) are marked indicators and criteria that have an impact on other indicators of the mentioned methodologies. As an example, an indicator of the HEM methodology is stated, Langhamer (2008) – The riverside and the inundation area. This indicator also occurs in evaluation of methodologies by Vrána *et al*. (2008), QBR (2000), Šlezingr, Úradníček (2002) and is marked with „X“. Revitalizing measures leading to riverside regulations and flood plain amendments have a significant impact on recreation and the creation of social security and amenities of the area. Furthermore, they are an important natural and aesthetic component of the landscape. These influences of revitalization (bio/technical, biological parameters) on recreation (perception of the landscape), the landscape character (structure and landscaping) are in the table marked numerically (3.2). Revitalizing treatment of riversides and inundation areas allow to increase the recreational potential of the area. However, the actual figures for recreation and the landscape character are not the condition for the revitalization of the riverbanks and flood plains.

Summary table (field notebook) for the evaluation of specific revitalization actions and the subsequent determination of total recreational effect of these actions will be designed according to the selected indicators, their criteria and will be complemented

		Evaluation methodologies							
		Revitalisation of water elements				Recreation			Landscape
	Evaluation indicators and their criteria	HEM – Langhamer (2008)	Vrána *et al.* (2003)	QBR (2000)	Šlezingr, Úradníček (2002)	Bína (2002)	Vepřek (2002)	TERPLAN (1974)	Vorel *et. al.* (2004)
Revitalization (technical, biotechnical and biological parameters)	**1. River bed and flow path**	X	X			5., 6., 7., 9.	5., 6., 7.		7.
	1.1 trimness of flow path	X	X			5., 6., 7., 9.	5.1		7.
	1.2 longitudinal river bed throughput	X	X			6.4, 6.7, 6.8, 7., 9.	5.1		7.
	1.3 river bed widths	X				6.7, 6.8	5.1		7.
	1.4 countersink in the longitudinal profile	X				6.4, 6.7	5.1		7.
	1.5 countersink in the transverse profile	X				6.4, 6.7	5.1		7.
	2. Bottom	X	X			6., 7., 9.	6., 7.		7.
	2.1 bottom structure	X	X			6.4, 6.7, 6.8, 6.9			7.
	2.2 bottom substrate	X				6.4, 6.7, 6.8			7.
	2.3 bottom neatness	X				6.4, 6.9, 9.			7., 9.
	2.4 dead wood in the river bed	X				7., 9.			7., 9.
	3. Riverside and inundation area	X	X	X	X	5., 6., 7., 8., 9.	5., 6., 7., 8.	X	7., 9.
	3.1 riverside neatness	X		X		5., 6., 9.	5.1	X	7., 9.
	3.2 riverside vegetation	X	X	X	X	5., 6., 7., 9.	5.1	X	7., 9.
	3.3 utilization of the riverside	X		X		5., 6., 7., 9.	5.1	X	7.,9.
	3.4 utilization of floodplains	X		X		5., 6., 7., 8., 9.	5.1	X	7.,9.
	4. Flow and hydrological regime	X				6., 7., 9.	6., 7.		7.
	4.1 nature of the flow	X				6.4, 6.7, 6.8, 6.9			7., 9.
	4.2 influencing the hydrological regime	X				6.4, 6.7, 6.9			7.
	4.3 throughput of floodplains	X				5., 6., 8., 9.			7., 8., 9.
	4.4 flow variability	X				6.4, 6.7, 6.11			7.

		Evaluation methodologies							
		Revitalisation of water elements				Recreation			Landscape
	Evaluation indicators and their criteria	HEM – Langhamer (2008)	Vrána *et al.* (2003)	QBR (2000)	Šlezingr, Úradníček (2002)	Bína (2002)	Vepřek (2002)	TERPLAN (1974)	Vorel *et. al.* (2004)
Recreation (landscape perception)	**5. Presence of social amenities and security**	1., 3., 4	1., 3.	3.	3.	X	X		7., 8., 9.
	5.1 presence of service facilities	1.1, 3.1–3.4, 4.3	1.1, 3.2	3.1–3.4	3.2	X	X	3.1–3.4	7., 8., 9.
	5.2 presence of information and educational elements	1.1, 3.1–3.4, 4.3	1.1, 3.2	3.1–3.4	3.2			3.1–3.4	7., 8., 9.
	5.3 presence of rest mobiliary	1.1, 3.1–3.4, 4.3	1.1, 3.2	3.1–3.4	3.2			3.1–3.4	7., 8., 9.
	5.4 presence of suitable transport infrastructure	1.1, 3.1–3.4, 4.3	1.1, 3.2	3.1–3.4	3.2			3.1–3.4	7., 8., 9.
	5.5 suitability of the landscape for disabled people	1.1, 3.1–3.4, 4.3	1.1, ,3.2	3.1–3.4	3.2			3.1–3.4	7., 8., 9.
	6. Suitability of land for recreation	1., 2., 3., 4.	1., 2., 3.	3.	3.	X	X	3.	7., 8., 9.
	6.1 suitability of the landscape for walking and hiking	1.1, 3.1–3.4, 4.3	1.1, 2., 3.2	3.1–3.4	3.2	X		3.1–3.4	7., 8., 9.
	6.2 suitability of the landscape for cycling	1.1, 3.1-3.4, 4.3	1.1, 2., 3.2	3.1–3.4	3.2	X		3.1–3.4	7., 8., 9.
	6.3 suitability of the landscape for ski hiking	1.1, 3.1–3.4, 4.3	1.1, 2., 3.2	3.1–3.4	3.2	X		3.1–3.4	7., 9.
	6.4 suitability of the landscape for recreation by the water	1.1, 1.2, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1–3.4, 4.1, 4.2, 4.3, 4.4	1.1, 1.2, 2.1, 3.2	3.1–3.4	3.2	X		3.1–3.4	7., 8., 9.
	6.5 suitability of the landscape for recreation-type forests/ mountains	3.1–3.4	1.1, 2., 3.2	3.1-3.4	3.2	X		3.1–3.4	7., 9.
	6.6 suitability of the landscape for rural tourism	3.1–3.4	1.1, 2., 3.2	3.1–3.4	3.2	X		3.1–3.4	7., 8., 9.
	6.7 suitability of the landscape for water tourism	1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 3.1–3.4, 4.1, 4.2, 4.3, 4.4	1.1, 1.2, 2.1, 3.2	3.1–3.4	3.2	X		3.1.–3.4	7., 8., 9.
	6.8 suitability of the landscape for sport fishing	1.1, 1.2, 1.3, 2.1, 2.2, 3.1–3.4, 4.1, 4.2, 4.3, 4.4	1.1, 1.2, 2.1, 3.2	3.1–3.4	3.2	X		3.1–3.4	7., 9.
	6.9 suitability of the landscape for watching water birds, animals	1.1, 2.1, 2.3, 2.4, 3.1–3.4, 4.1, 4.2, 4.3, 4.4	1.1, 2.1, 3.2	3.1–3.4	3.2	X		3.1–3.4	7., 9.
Landscape character (structure and land-scaping)	**7. Signs of natural characteristics**	1.1, 1.2, 2.2, 3.2–3.4, 4.	1.1, 1.2, 3.	3.	3.2–3.4	X	X	3.	X
	8. Signs of cultural and historical characteristics	3.4, 4.3.			3.4	X	X		X
	9. Signs of aesthetic value of the landscape	1.1, 1.2, 2.1, 3.1–3.4, 4.1, 4.3	1.1, 1.2, 3.2	3.2	3.1–3.4			3.2	X

by other specific elements. Individual revitalization measures will be evaluated separately.

This off-road notebook will be complemented by another clear table with a description of the selected indicators, criteria and elements in terms of direct and indirect impact on the recreational potential of the territory. We will take into account the recreational, aesthetic, hygienic, safety, environmental, and technical aspects of revitalization measures. The proposed evaluation procedure can be applied to revitalization measures in urban environment and its surroundings.

Currently there are methodology proposals verified on practical examples of revitalization in the Czech Republic and abroad. The following section is devoted to the assessment of some indicators of the proposed methodology on the example of the river Vah close to the town of Iľava in Slovakia. The river Vah is regulated in a natural way. The aerial photo in Fig. 4 shows a selected regulated river part and a section modified in a natural way. There are highlighted sections in the Fig. 4, which were taken from the following photos, see Figs. 5, 6. Fig. 5 shows a meander of the river Váh after the close-to-nature modifications

Fig. 6 shows concrete details (6a–6f) of the river bed of Váh. Subsequently they are described according to selected evaluation indicators of the proposed methodology. The recreational aspect is discussed mainly.

Gravel banks in the watercourse are evaluated in Fig. 6a). These banks are evaluated as a very positive level according to the proposed methodology in terms of recreation potential. They can be used not only for relaxation, sunbathing,

4: *Aerial photograph showing the close-to-nature and regulated watercourse of Váh river in Slovakia (maps.sk)*

5: *Close-to-nature watercourse of Váh river in Slovakia*

walking, but also for observing, taking pictures of birds, aquatic animals and riparian vegetation.

6b) Within the framework of the river Váh, the banks were revitalized and reinforced with stone pavement, which can serve the citizens as a place to relax and enjoy the sun by the watercourse. These elements along the river banks are important not only to strengthen, but also to increase the "wet circuit". It is important for the possible presence of aquatic animals and plants. It also helps the process of self-purification of water. Under the proposed methodology the reinforced stone pavement is found very appropriate in terms of revitalization, ecology and recreation.

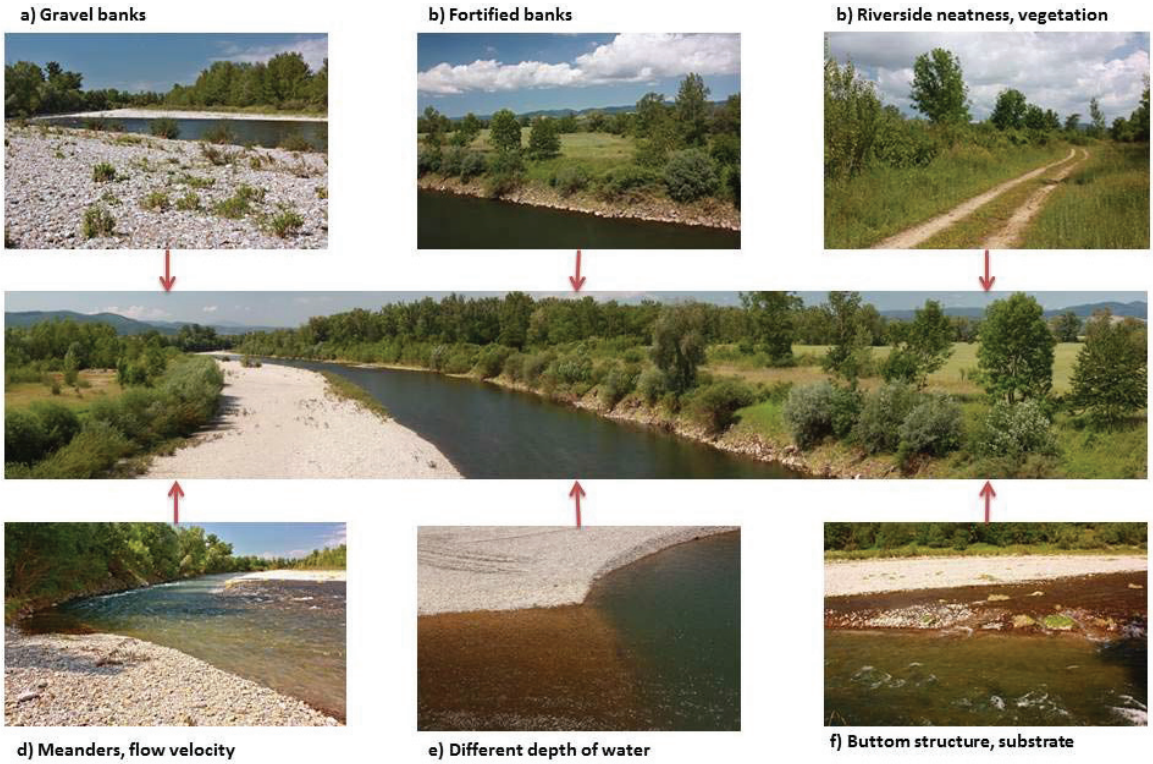
6c) On the banks of the river Váh riparian vegetation occurs frequently. This vegetation is according to the methodology suitable not only to shelter animals, for bird nesting, as a source of food, but also in terms of improving the microclimate conditions of the surroundings. Within this space there are noticeable hiking trails that can be used not only for walking, but also for cycling and cross country skiing.

6d) Within the adjustments the watercourse of the river Vah was modified in a natural way. Regular meanders were created on the river. The creation of such meanders affects the flow velocity in the watercourse. and this affects e.g. the presence of certain species of aquatic animals and plants. With respect to recreation the river bed morphology and the associated change in the flow velocity has an impact on e.g. swimming possibilities, sport fishing, water tourism.

6e) There is a common occurrence of different high water levels at graveled rivers due to graveled silt. The resulting pools, shallows in the watercourse influence e.g. occurrence of aquatic animals in the river. In terms of recreation these places are suitable for wading, animal watching, sports fishing, etc.

6f) The river Vah is of a graveled character. In the evaluation section there is a system of gravel banks with the presence of stones and boulders. This bottom substrate is suitable for surfing, sunbathing, swimming, birdwatching, watching aquatic animals and art activities (e.g. taking photographs).

Despite all the adjustments on the river Vah, the river is now nearing a close-to-nature state at least. With a system of parallel artificial channels it makes a very attractive location for water sports and recreation. It is used by paddlers e.g. for rafting. The river Váh, partly artificially meandered, offers better conditions for swimming and recreation than straightened parallel canals. Water in the meander river does not flow as quickly as in the straightened parallel canals. In many sections of the riverbed there are sedimentary and gravel banks, islands, which may serve to relax, for wading or bird watching. There is also a better environment for fishing. Throughout the length of the river there is a number of side branches, pools, ponds (e.g. Ilavský), lakes (e.g. Štěrkovecké).



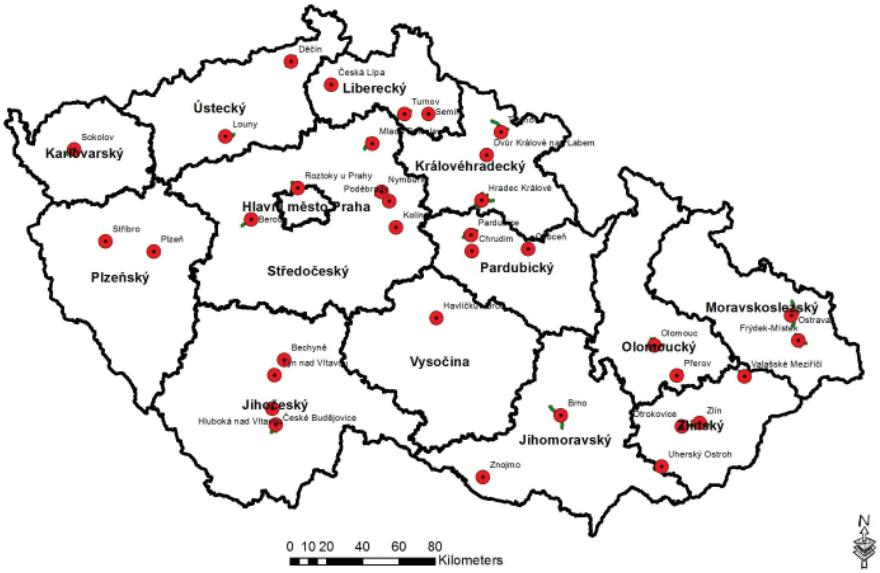
6: *Evaluated elements of Váh river, a close-to-nature watercourse*

Vážska cyclo route runs alternately along the river and parallel canals, which is also widely used for roller skating, as it is conducted on paved roads. For hiking people prefer the original riverbed of Váh, whose banks and adjacent floodplain are lined with riparian vegetation. Castles along the river canal are a big attraction (e.g. Beckov, Trenčín, Považský, Budatín). Moreover in recent decades the near-nature character of the canal sections has enabled the come back of rafting as a specific tourist attraction.

The nature and characteristics of typical near-nature watercourses are an inspiration near-nature improvements and revitalization (the mutual interpenetration of these terms) in the urbanized environment of cities and villages. A typical example is the Thaya River in Znojmo representing both recreation-irreplaceable element for local citizens

7: *Rafts on the river Váh, near Strečno. Without a preserved river environment with alternating fast and slow water, rapids and attractive surroundings incl. riparian vegetation it would be uninteresting for tourists*

8: *The river as a part of an urbanized area. The adjusted riverbed of the Thaya in Znojmo still bears the distinctive, close to nature and natural elements (riparian vegetation and other accompanying vegetation, differently deep and fast water, close to nature bank reinforcement). Therefore the river represents a major aesthetic, recreational and for tourists attractive feature of the city.*



9: *The system of model sites for the evaluation of the recreational potential of close to nature and revitalized sections of watercourses in urban areas*

and one of the major tourist attractions for visitors (see Fig. 8).

There are many similar examples of the importance of near-nature elements of watercourses for urbanized environment like the Thaya in Znojmo in the Czech Republic. Department of Environmentalistic and Natural Resouces Faculty of Regional Development and International Studies MENDELU in Brno work on the description and classification of the selected examples presented in Fig. 9.

CONCLUSION

To determine the significance of revitalization measures in terms of recreation potential of the landscape, the following combination of methodologies were used:

A. Methodology for Assessing the Effectiveness (Success) of Revitalization

- Methodology (HEM) Hydroecological monitoring (Langhammer, 2008).
- The evaluation methodology of implemented revitalization actions – Selected waterways and small water tanks (Vrána, Dostál, Vokurka, 2003).
- The method of assessing the state of the riparian area – QBR index of river quality (F. E. M. Research Group, 2000).
- The method of evaluation of the current state of riparian vegetation of the watercourse (Šlezingr, Úradníček, 2002).

B. Methodology for Assessing the Recreational Potential (or Potential Tourism)

- Assessment of recreational potential by the method of TERPLAN (natural recreational potential of the landscape) (TERPLAN, 1974).
- Evaluation of the potential of tourism (Vepřek, 2002).
- Methodical construction of evaluation of the tourism potential (Bína, 2002).

C. Methodology for Assessing the Landscape Character

- Methodology for assessing the impact of the proposed construction, activities or changes in land use on the landscape character (Vorel *et al.*, 2004).

Based on the experience with application in practice, the methodology will be further specified (particularly in the potential coefficients and weights of criteria).

Model locality Váh example assessment of the nature and character of typical near natural watercourses will be used in the creation of classification for near-natural adjustment and revitalization in the urban environment of cities and villages.

SUMMARY

The overall outcome of this work was to propose an ongoing methodological procedure to evaluate the importance of revitalization measures in terms of recreation potential of the landscape. The result was the creation of a table showing the evaluation indicators and criteria. Subsequently, it was the proposal of the creation of a summary table (field notebook) in order to determine the overall

revitalization effect on recreational activities in practice. This ongoing proposal has been formed on the basis of preceding analyses of practical examples of revitalization in the Czech and Slovak Republics and abroad, field research, comparison and synthesis of existing evaluation methodologies. For the proposal of a methodological procedure of revitalization evaluation were selected assessment indicators from methodologies for the evaluation of revitalization actions, landscape character and recreational potential of the area. The overview of these methods was chosen on the basis of the the importance of the individual indicators (e.g. riparian vegetation, water quality, river bed morphology), as elements in urban areas and the surrounding landscape, which significantly enhance the recreational potential of the revitalized area. The example locality of close to nature watercourse is part of Váh river near Iľava city. The middle part of river is an optimal model watercourse for comparing a technical canal and a modified one, but close-to-nature watercourse with all parameters of river phenomenon. The nature and characteristics of typical near-nature watercourses are an inspiration near-nature improvements and revitalization (the mutual interpenetration of these terms) in the urbanized environment of cities and villages. A typical example is the Thaya River in Znojmo. The adjusted riverbed still bears the distinctive, close to nature and natural elements (riparian vegetation and other accompanying vegetation, differently deep and fast water, close to nature bank reinforcement). The Thaya River in Znojmo representing both recreation-irreplaceable element for local citizens and one of the major tourist attractions for visitors.

Acknowledgement

This article was prepared within the project IGA FRDIS Mendel University in Brno "Conflicts of recreation and nature protection in the context of regional development in the area of large especially protected territories."

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