Sych Vitaliy. The network systematics of recreational and tourist potential. Journal of Education, Health and Sport. 2019;9(9):1333-1343. eISSN 2391-8306. DOI http://dx.doi.org/10.5281/zenodo.4086000
http://ojs.ukw.edu.pl/index.php/johs/article/view/7829

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part B item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eISSN 2391-8306 7

The authors declare that there is no conflict of interests regarding the publication of this paper.
Received: 05.09.2019. Revised: 16.09.2019. Accepted: 30.09.2019.

The network systematics of recreational and tourist potential

Vitaliy Sych

Odesa I. I. Mechnikov National University

Abstract

Practical requests for recreational and tourist activities require the characterization and assessment of specific conditions and resources, specific facilities, areas and territories. Therefore, scientists and practitioners try to develop "working methods" for the assessment of recreational and tourist potential. This is how we explain the need to form a network systematics of recreational and tourist potential as a new direction of evaluation of recreational benefits. The main objectives of this article is the introduction and development of the concept of recreational cluster as the unit of the network systematics of recreational and tourist potential. Material and methods: as a methodological basis used developments that are set out in the scientific works of Ukrainian scientists and previous author's developments. Both general scientific methods (analysis and synthesis, system approach, induction and deduction) and specific scientific methods were used in the work. Results and discussion: the problem of developing integrated assessments of recreational and tourist potential remains as a core methodological direction, which is still far from being developed. We illustrate this approach with a formalized methodological scheme. It presents two areas of hierarchical systematics of recreational and tourist potential – component and functional. Another direction at the intersection of hierarchical classifications is formed by the network systematics of recreational and tourist potential. Conclusions: recreational cluster – is a unit of network taxonomy, which is formed at the intersection (of the component classification of

recreational and tourist potential and functional taxonomy of recreational and tourist activity. The network systematics of recreational and tourist potential means combining recreational conditions and resources with their consumption in different types and forms of recreational and tourist activity.

Key words: network systematics; recreational and tourist potential; recreational geography and tourism; recreational cluster.

Мережева систематика рекреаційно-туристичного потенціалу

Виталий Сич

Одеський національний університет імені І. І. Мечникова

Анотація

Сучасні практичні запити на рекреаційно-туристичну діяльність вимагають оцінки конкретних умов та ресурсів, об'єктів та територій. Існує необхідність формування мережевої систематики рекреаційно-туристичного потенціалу як нового напрямку оцінки рекреаційних переваг. Основними цілями цієї статті є впровадження та розвиток концепції рекреаційного кластеру як одиниці мережевої систематики рекреаційно-туристичного потенціалу. Матеріал і методи: в якості методологічної основи використані розробки, викладені в наукових працях українських вчених та попередніх авторських розробках. У роботі використовувались як загальнонаукові методи, так і конкретні наукові методи. Результати та обговорення: проблема розробки інтегрованих оцінок рекреаційно-туристичного потенціалу залишається основним методологічним напрямком, який ще далеко не розроблений. В статті запропоновано формалізована методологічна схема, в якій представлені дві області ієрархічної систематики рекреаційно-туристичного потенціалу - компонентна та функціональна. Інший напрямок на перетині ієрархічної класифікації формує мережева систематика рекреаційного та туристичного потенціалу. Висновки: в статті розглянуто рекреаційний кластер як одиницю мережевої систематики, яка формується на перетині компонентної класифікації рекреаційно-туристичного потенціалу та функціональної систематики рекреаційно-туристичної діяльності. Мережева систематика рекреаційно-туристичного потенціалу означає поєднання рекреаційних умов та ресурсів з їх споживанням в різних видах та формах рекреаційно-туристичної діяльності.

Ключові слова: мережева систематика; рекреаційно-туристичний потенціал; рекреаційна географія та туризм; рекреаційний кластер.

Introduction

The core problem of research of recreational and tourist potential (RTP) is the systematics and classification of recreational and tourist conditions and resources. In its modern developments, general approaches aimed at substantiating the general principles and methods of classification of RTP are combined with specific studies of individual objects and areas of recreational and tourist activities (RTA). Theoretical and methodological development of the general system of recreational benefits is supplemented by an inventory and assessment of recreational conditions and recreational resources of individual areas and territories, facilities and complexes of RTA. The theoretical and methodological direction is focused on the substantiation of a single classification of recreational conditions and resources, and specific developments are focused on applied requests for inventory and assessment of RTP.

The first direction requires methodological unity and methodological integrity, the second – to some extent takes into account the general methodological principles and at the same time is a "search area" in which researchers test a variety of approaches and methods. The second direction can be considered as a fragmentary and partial development of the general problem of RTP taxonomy.

Objective

The main objectives of this article is the introduction and development of the concept of *recreational cluster* as a taxonomic unit of taxonomy and classification of recreational and tourist potential. In modern recreational geography and tourism studies dominate component –resource (by types of recreational resources) and functional (by types and forms of recreational and tourist activities) approaches to the systematics of recreational and tourist potential. Modern requests for the classification of areas of recreational and tourist activities need to expand and deepen the methodological foundations of this issue.

Material and method

As a methodological basis used developments that are set out in the scientific works of Beydik O. O., Korshz N. V., Pupp V. V., Sichkarenko K. O., Jones C. and previous author's developments. Both general scientific methods (analysis and synthesis, system approach, induction and deduction) and specific scientific methods were used in the work.

Results

These issues have the following methodological features [7]. General classifications are usually hierarchical and multilevel. The set of objects to be classified is sequentially divided from top to bottom into taxonomic levels, within which objects are grouped according to classification into different classes, and the volumes of classes become more detailed and small, up to individual classification volumes. Such taxonomies and classifications are called hierarchical. We emphasize their *main methodological features*:

– hierarchical systematics is a clearly ordered and integral classification, in which all objects of classification take their place;

– hierarchical classification has a single methodological basis – the main classification feature;

– hierarchical systematics is multilevel, and taxonomic levels are terminated by the corresponding names of objects of classification;

– hierarchical ordering involves a separate consideration of objects of a certain level, but always with its neighbors – the "upper" and "lower" taxonomic levels;

– hierarchically formalized taxonomy is a graph–tree, the roots of which are a classified set of objects, and the directions of the taxonomy form a branched crown of such a tree; according to the taxonomic organization, the graph–tree is shown with the crown down;

– another formalized approach considers the hierarchical systematics as a pyramid, in which its taxonomic levels expand from top to bottom, from the whole set of objects of classification to individual elements; such a formalization is sometimes called a classification pyramid.

Along with hierarchical classifications, the so–called facet classifications [13], which divide the set of objects into *facets* (facet – frame), have become widespread. The main difference between faceted taxonomies – they do not have a mandatory methodological requirement of a single classification feature: facets can be distinguished by any features of interest to the researcher, including "side", such that do not correspond to the subject classified population.

Another feature of faceted classifications is that they lack hierarchical organization. Systematics of objects is developed at a certain level of organization and has no connections and relations with neighbors. Faceted taxonomies to some extent take into account the general principles and requirements of classification, but in many cases develop their own standards.

In recent decades, the world economy has undergone a shift from tightly coordinated and centralized management, forming hierarchical multilevel "management pyramids", to

more flexible network structures. The network organization makes more use of market mechanisms as opposed to centralized ones. Researchers believe that the network management organization is more in line with modern demands of socio–economic development [8, 16, 22, 24, 25], in particular the general trend towards decentralization of economic activity.

The principles of network organization also apply to recreational and tourist activities [6, 10]. Along with the traditional management pyramids, which preserve the high centralization of management decisions, network forms of organization of RTD are multiplied, under which market mechanisms of its functioning are significantly strengthened [1, 3]. A powerful factor in the formation of the network organization of RTA was the massive spread of information technology and economic development of telecommunications networks [18].

The network principle of RTA organization is the consistent replacement of multilevel management hierarchies in the tourism industry and recreation by organizational combinations – clusters of firms and production units coordinated by market mechanisms [4]. The subjects of the network economy organize equal relations with each other, without subcontracting. In other words, the main principle of traditional organization – the hierarchy and centralization of management, recedes into the background. And another methodological feature: network structures have a high self–organization and form "bottom–up", not "top–down" [11].

These trends of the modern combination of hierarchical and network forms of RTA organization must be sufficiently taken into account in the development of the core problem – inventory and evaluation of RTP. Along with the traditional development of hierarchical RTP systematics, the principles and methods of network systematics of recreational benefits should be considered in accordance with the latest forms of network organization of RTP.

Consider the possibility of using hierarchical and network systematics RTP, let's taking into account their main methodological differences. Hierarchical classifications of RTA conditions and resources have a clear orderly and multilevel structure. The place of each component of RTP – its conditions and resources, in such a system is clearly defined, and the general development of the classification pyramid of RTP currently remains a purely theoretical direction, as the composition and rubrication of conditions and resources of RTP are constantly updated and evaluated. The network systematics of RTA conditions and resources are devoid of such methodological limitations: different types and forms of RTA

require certain combinations of recreational conditions and resources for their functioning, which are currently sufficiently defined and characterized. The emergence of new varieties of RTP requires the establishment of an appropriate combination of initial conditions and resources and does not require a revision of the general classification of components of RTP.

Various types of hierarchical systematics of RTP, in particular their component and functional classification, are widespread in domestic recreational geography and tourism. In the component taxonomies of RTP, recreational conditions and resources are represented by multilevel hierarchical classification pyramids [2, 9, 17, 21], divided into resource blocks – natural–geographical, historical–cultural and socio–economic. Multilevel classification consistently details and grinds these blocks down to individual components and indicators. The functional structure has the same structure, according to which RTAs are classified by types and forms of recreation and tourism. And in this case it has a typical hierarchical systematics, in which the RTA is divided into areas and types of "top–down", from the whole sector of the economy to individual varieties and forms of recreation and tourism.

It becomes necessary to supplement the traditional approaches to the hierarchical systematics of RTP – component and functional, with a new methodological direction focused on the study of the latest trends in the transformation of RTP. It is a question of the *network approach*, about introduction in modern taxonomies and classifications of RTP of principles of the *network organization* of RTA.

In the traditional development of RTA operation constantly compare the component classification of recreational conditions and resources with the functional system of existing and possible types and forms of recreation and health of the population. In our opinion, it is in this area that the principles and methods of the network approach should be included in the study and evaluation of RTP. Each type of RTA has its own set of recreational conditions and resources that ensure its functioning. In contrast to the general assessment of RTP, it is only a characteristic and typical combination of conditions and resources for the implementation of certain types of RTP. The problem of developing integrated assessments of RTP remains as a core methodological direction, which is still far from being developed. At the same time, it is not the theoretical resource potentials with their still insufficiently characterized volumes that are subject to assessment, but rather specific and limited combinations of recreational conditions and resources. This approach significantly simplifies the calculation of RTP and makes it possible to assess it by the characteristic combinations of recreational conditions and resources that correspond to certain types and forms of RTP. Mathematicians use this approach to calculate the components of integrals and call it "integration by parts."

We illustrate this approach with a formalized methodological scheme. It presents two areas of hierarchical systematics of RTP – component and functional. Another direction at the intersection of hierarchical classifications is formed by the *network systematics* of RTP.

Elements of component classification are resource components of RTP – natural–geographical, historical–cultural, socio–economic, which are further detailed to individual characteristics – k1, k2, k3, etc. The functional systematics of RTA has a similar structure, represented by several blocks – medical and health RTA, health and sports RTA, mass unorganized (amateur) recreation, household recreation, etc., each of which is additionally classified to the elementary components of tourism and recreation – f1, f2, f3.

The intersection of these two classifications of RTP shows the characteristic and typical combinations of certain resource components ($\sum k_i$) for certain types of RTP (f_i). For example, for a mass amateur recreation on the coast are necessary beach area, sea area, warm season, existing infrastructure and services. Such examples are easy to continue because they are well known to vacationers. However, recreational geography is not yet able to terminate such characteristic and typical combinations of recreational conditions and resources for different types and forms of RTA. Various authors call them "sets of recreational conditions and resources," "combinations of recreational benefits," "complexes of conditions and resources of RTAs," and so on. In local tourism, characteristic combinations and combinations of components in network structures are called clusters [4, 12]. Currently, the concept of "cluster" has many different meaningful definitions, but in all developments it denotes a set of primary objects that have a certain functional cohesion and unity. For such reasons, we terminate *recreational clusters* as typical combinations of recreational conditions and resources with certain types of RTA. In our scheme they are marked as C_i: c1, c2, c3 ... The whole range of recreational clusters is a network system of recreational benefits for a given area or a given object of RTA.

In the presented scheme the recreational cluster c1 combines two types of health–improving RTA (f1 and f2) with a natural–geographical resource (k1) and a historical–cultural component (k4). In the recreational cluster c2 several types of health–improving RTA (f1 and f3) and one direction of mass unorganized recreation (f7) use natural–geographical recreational resources of type k1 and historical–cultural components of type k5. It is clear that these examples have a formalized, purely methodological nature.

The methodological ratio of hierarchical and network systematics of RTP components is represented by the following scheme: on it the traditional directions of classification of RTP and RTA – component–branch and functional are supplemented by a new approach – *network*

systematics. The first two directions belong to the so–called hierarchical taxonomies, in which the integral objects to be classified, consistently and hierarchically – at different levels of taxonomies, are divided into smaller and smaller classification units. Hierarchical taxonomy usually forms a "classification pyramid", in which all objects are distributed at different levels and have their own classification features. Numerous component–branch (component) classifications of RTP and functional taxonomies of RTD are built on such bases.

It will be recalled that the main feature of network structures is direct economic relations and direct coordination of market activities between all major links – from the supply of raw materials to the sale of finished goods and services. For RTA, this means combining recreational conditions and resources with their consumption in different types and forms of RTA. The formation of the network direction of the system of recreational benefits is focused on the consistent solution of this problem.

Let's make preliminary methodological generalizations from the given review of directions of systematization of RTP. One of the target guidelines of recreational geography and tourism is to develop theoretical and methodological principles of inventory and assessment of recreational and tourist potential. We emphasize that at present this problem is still far from being solved, and along with this target guidance we have to keep records and assess the recreational conditions and resources of numerous RTD facilities and sites, regardless of the general level of theoretical and methodological assessment of RTP. Practical requests for recreational and tourist activities again and again require the characterization and assessment of specific conditions and resources, specific facilities, areas and territories. Therefore, scientists and practitioners develop "working methods" for the assessment of RTP, insufficiently related to the theoretical and methodological principles of this area and evaluation indicators that have an approximate (in the language of mathematicians – iterative) nature. This is how we explain the need to form a *network systematics* of RTP as a new direction of evaluation of recreational benefits.

As mentioned, the classification unit of *network systematics* is marked by a recreational cluster. Let's explain the meaning of this concept, remembering that the term "recreational cluster" is defined differently by modern researchers – as a group of RTA objects, and as a set of recreational services, and as a combination of types and forms of RTA [5, 14, 15, 19, 20, 23].

Conclusion

Thereby, recreational cluster is a unit of network taxonomy, which is formed at the intersection (due to interaction) of the component classification of RTP and functional

rubrication (taxonomy) of RTA. In other words, a recreational cluster is a spatial combination (complex) of certain types and forms of recreational and tourist activities and recreational conditions and resources necessary for their functioning. The main differences of recreational clusters, compared with the component and functional taxonomies of RTP are:

1) they do not have an organizational hierarchy; recreational clusters are classification units of one level;

2) recreational clusters are distinguished not by certain types of classification features, but by typical combinations of component and functional characteristics;

3) typical recreational clusters can be used as units of the following generalizations and classifications of recreational benefits;

4) the target guideline of hierarchical taxonomies is the establishment of classification units – classes and the development of their multilevel taxonomy; network systematics develops a one–level division of the original classification objects and defines them as types.

The given methodological scheme shows the relationship and interaction of the main directions of systematization of RTP. Note that the component–industry classification of RTP and functional classification of RTP have become widespread in recreational geography and tourism and are already traditional areas of taxonomy, which are called component and functional. The classification of recreational conditions and resources and types of RTA in both directions is multilevel and hierarchical: the basic objects to be systematically, consistently, "top–down" are classified according to the appropriate characteristics, and the detail of such classifications lead to individual features and characteristics. The result is a "classification pyramid". In general scientific methodology, this direction is called hierarchical systematics.

A relatively new direction is the *network systematics* of RTP, which is devoid of hierarchical organization and is not divided into classification levels. The basic units of such taxonomy are recreational clusters, which are characteristic complexes (combinations, combinations) of initial resource characteristics that ensure the functioning of various types and forms of RTA. And the main methodological remark: the correspondence of complexes of recreational conditions and resources to different types of RTA has long been known and is already a kind of "axiom" or "basic postulate" of recreational geography. However, this provision does not eliminate the problem of developing tourism clusters. The main feature of RTA is that the individual types and forms of health and recreation function in combination, in a variety of combinations.

References

1. Atamanchuk Z.A. Formation of the network tourist industry as a form of global integration of countries / Economic space. – 2019. – 141. – P. 49–64.

2. Beidik O.O. Recreational and tourist resources of Ukraine: methodology and methods of analysis, terminology, zoning. – Kyiv: University, 2001. – 395 p.

3. Bosovska M.V. Integration processes in tourism: monograph. – Kyiv: KNTEU, 2015. – 832 p.

4. Katkalo V.S., Shemrakova V.N. Network strategies of hotel business. – St. Petersburg: Higher School of Management, 2009. – 384 p.

5. Klyuchenko A.V. Integral assessment of the synergetic effect as an indicator of the effectiveness of the recreational cluster – Global and national economic problems. – 9. – P. 542–546

6. Korzh N.V. Management of tourist destinations. – Vinnytsia: PE "TD Edelweiss and K", 2017. – 322 p.

7. Kushnarenko N. Scientific processing of documents: Textbook, VK Udalova. – K.: Znanniy, 2006. – 334 c.

8. Mazina N.E. Network relations in economic activity of enterprises: institutional aspect/ Methodology, theory and practice of sociological analysis of society. – 2009. – 15 – p.250–253

9. Malskaya M.P. Tourism business: theory and practice. Teaching. pos. – Kyiv: Center for Educational Literature, 2007. – 424 p

10. Papp V.V The role of social and business networks in the activities of tourist enterprises. Economy and Society. – 2018. – 3. – P. 24–32.

11. Paturel R. Creation of network organizational structures / R. Paturel // Problems of management theory and practice. – 1997. – 3. – P. 76–81.

12. Plakhotnik O.O. Methodological principles of formation of management mechanisms of modern enterprises. Bulletin of Odessa National University. Series: Economics. – 2014. – Vol.19, (3). – P. 169–174.

13. Ranganathan Sh. R. Classification by a colon. Basic classification.– M .: GPNTB SSSR, 1970

14. Semenov V. Regional recreational cluster in the context of structural restructuring of the region's economy / Regionalna ekonomika. – 2006. – 3. – P.78–89

15. Semenov V.F. Cluster policy in regional management tourism development / Regionalna ekonomika.– 2011. – 40 – P.381–387

16. Sichkarenko K.O. Network organization of innovation activity: scientific report / NAS of Ukraine, SRI "Institute of Economics and Forecasting of NAS of Ukraine". – K., 2015. – 48 p

17. Smal I.V. Tourist resources of the world. – Nizhyn: Nizhyn State University named after Mykola Gogol, 2010. – 336 p.

18. Falko E.A. Development of informatization of international tourism business in the context of globalization: dis. ... candidate economist. Sciences: 08.00.02 / Falko Elina Arturivna. – Dnipro: Dnipro. nat. un–t. Dnipropetrovsk, 2014. – 296 p.

19. Filippova S.V. Some aspects of the formation of the cluster strategy of the tourist and recreational complex of the region / Economics: the realities of time – 2013. – No 1 (6). – P. 186–189

20. Kharichkov S.K. Directions of restructuring and formation of conditions for progressive development of the recreational and tourist complex of the region:: scientific report / / Institute of Market Problems and Economic and Ecological Research of the National Academy of Sciences of Ukraine. – Odessa, 2009. – 27 p.

21. Cherchyk L. Strategic potential of the recreational system of the region: theory, methodology, evaluation / L. Cherchyk, N. Kolenda. – Lutsk: LNTU, 2008. – 224 p

22. Shvedyuk O. Definition of network structure as a modern form of coordination of economic activity // Actual problems of economy. – 2010. – №5. – p.22–29.

23. Shvets I.Yu. Regional management of competitiveness of tourist services: methodology and practice: author's ref. dis. ... Doctor of Economics / Council for the Study of Productive Forces of Ukraine of the National Academy of Sciences of Ukraine. – K., 2009. – 37 c.

24. Jones C. A general theory of network governance: Exchange conditions and social mechanisms / Academy of Management Journal. – 1997. – Vol. 2. – № 4. – P. 911–945.

25. Webser J. Networks of Collaboration or Conflict? Electronic Data Interchange and Power in the Supply Chain / The Journal of Strategic Information Systems. 1995. – Vol. 4. – № 1. – P. 31–42.