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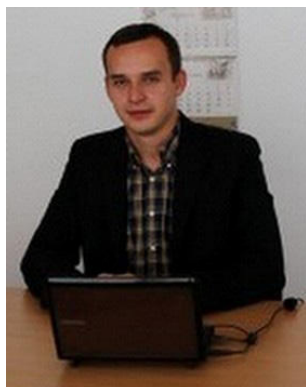
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УДК. 911.2.502

ПЕРЕДУМОВИ СТВОРЕННЯ ГЕОПАРКІВ У МЕЖАХ УКРАЇНСЬКИХ КАРПАТ**PREMISES FOR CREATION OF GEOPARKS
IN BOUNDS OF THE UKRAINIAN CARPATHIANS**

У статті акцентовано увагу на дослідженнях потенційних можливостей створення геопарків у межах Українських Карпат, як географічних територій, які є привабливими для туристів завдяки наявності унікальних або специфічних туристсько-рекреаційних ресурсів, зокрема, геолого-геоморфологічної спадщини.

Адже проблема створення геопарків в Україні викликана відсутністю паспортизації атрактивних об'єктів неживої природи, що призвело до активізації робіт з вивчення і збереження геоспадщини.

Метою статті є розкрити сутність міжнародної категорії збереження і сталого використання геоспадщини – геопарків – інноваційної природоохоронної одиниці.

Автори розкривають передумови створення геопарків, а також акцентують увагу на різноманітності геоморфологічної будови території Українських Карпат (рельєф представлений як гірськими хребтами так і рівнинними територіями з презентованістю поверхневих й підземних карстових форм). У статті аналізуються основні риси геології Українських Карпат, що відображена у природних (оголення стінок) та антропогенних (розробка кар'єрів) відслоненнях різних періодів, епох і презентована різними за літологічним складом та петрографією гірських порід. Звернено основну увагу на доцільність включення до складу геопарків археологічні, екологічні, історичні та культурні об'єкти. Їх формуванню повинно сприяти, крім правильності обрання об'єкту, також підтримка від держави на усіх етапах



його розвитку, місцевого населення та приватного бізнесу. Створення таких природоохоронних об'єктів сприятиме розвитку геотуризму, як виду туристичної діяльності, що передбачає надання освітнього забезпечення і послуг, які окрім отримання звичайних естетичних вражень, уможливають розуміння туристами геології і геоморфології місця (включаючи його роль у розвитку наук про Землю). Згідно аналізу перспектив їх розвитку одне з чільних місць на вітчизняному та пріоритетною на світовому туристичному ринку може зайняти Карпатська дестинація, враховуючи її рекреаційний потенціал й транскордонне положення.

Методологічними засадами дослідження є дослідження передумов розвитку створення геопарків у межах Українських Карпат на сполученні методів галузевого та територіального аналізу. Зокрема, для дослідження застосований системний підхід при використанні методів порівняння, статистичного, аналітичного аналізу тощо.

Таким чином, створення і розвиток геопарків у межах Українських Карпат сприятиме раціональному використанню геологічної і геоморфологічної спадщини гірських територій, зокрема, привабливих об'єктів неживої природи. Об'єкти геолого-геоморфологічної спадщини можуть слугувати основою для розвитку гео-, екотуризму, урізноманітнення послуг та товарів на туристичному ринку. Привабливі об'єкти неживої природи можуть слугувати основою для створення туристичного бренду Українських Карпат, що призведе до зростання туристичного потоку і залучення як вітчизняних так й іноземних туристів.

Ключові слова: геопарки, атрактивні об'єкти, геолого-геоморфологічна спадщина, види туристичної діяльності.

In the article attention is focused on the research potential creation heoparkiv within the Ukrainian Carpathians as geographic areas that are attractive to tourists thanks to the unique or specific recreational resources, including geological and geomorphological heritage.

The problem of creating heoparkiv in Ukraine caused vidsitnistyu certification atraktyvnyh inanimate objects, leading to activation of studies and conservation heospadschyny.

The article aims to reveal the essence of the international category of conservation and sustainable use heospadschyny - heoparkiv - innovative conservation units. The authors reveal the prerequisites of heoparkiv and emphasize the diversity of geomorphological structure of the Ukrainian Carpathians (relief introduced as mountain ranges and plains areas with prezentovanistyu surface and underground karst forms). This article analyzes the main features of the geology of the Ukrainian Carpathians, which is reflected in the natural (baring walls) and anthropogenic (quarrying) outcrops of different periods, different ages and presented by lithology and petrology of rocks. Attention is attention to the inclusion of feasibility heoparkiv archaeological, ecological, historical and cultural sites. They should contribute to the formation, in addition to the correctness of the election of the object, as support from the state at all stages of its development, local communities and private businesses. Creation of environmental protection facilities heoturizmu promote development, as a form of tourism that provides educational software and services in addition to receiving the usual aesthetic experience, enabling understanding of geology and geomorphology tourist places (including its role in the development of Earth Sciences). According to the analysis of the prospects of one of the first places a priority on national and global tourism market may take Carpathian destinations, given its recreational potential and cross-border situation.

Methodological principles of research is to study the creation of preconditions heoparkiv within the Ukrainian Carpathians on a combination of methods sectoral and spatial analysis. Specifically, the study used a systematic approach using the methods of comparison, statistical, analytical analysis and more.

Thus, the creation and development heoparkov within the Ukrainian Carpathians potential for geological and geomorphological heritage of mountain areas, particularly attractive inanimate. Objects geological and geomorphological heritage can serve as a basis for the development of geo, eco-tourism, diversification of products and services in the tourism market. Attractive inanimate nature can serve as the basis for creating tourist brand Ukrainian Carpathians, which will increase the flow of tourists and attract both domestic and foreign tourists.

Key words: geoparks, attractive objects, geological and geomorphological heritage, kinds of touristic activities.

В статье акцентировано внимание на исследованиях потенциальных возможностей создания геопарков в пределах Украинских Карпат, как географических территорий, которые являются привлекательными для туристов благодаря наличию уникальных или специфических туристско-рекреационных ресурсов, в частности, геолого-геоморфологической наследия.

Ведь проблема создания геопарков в Украине вызвана отсутствием паспортизации аттрактивных объектов неживой природы, что привело к активизации работ по изучению и сохранению геонаследия.

Цель статьи - раскрыть сущность международной категории сохранения и устойчивого использования геонаследия - геопарков - инновационной природоохранной единицы.

Авторы раскрывают предпосылки создания геопарков, а также акцентируют внимание на разнообразии геоморфологического строения территории Украинских Карпат (рельеф представлен как горными хребтами так и равнинными территориями с презентованистью поверхностных и подземных карстовых форм). В статье анализируются основные черты геологии Украинских Карпат, отраженная в естественных (обнажение стенок) и антропогенных (разработка карьеров) обнажениях различных периодов, эпох и представлена различными по литологическим составом и петрографией горных пород. Обращено основное внимание на целесообразность включения в состав геопарков археологических, экологических, исторических и культурных объектов. Их формированию должно способствовать, кроме правильности избрания объекта, также поддержка от государства на всех этапах его развития, местного населения и частного бизнеса. Создание таких природоохранных объектов будет способствовать развитию геотуризма как вида туристической деятельности, предусматривающего предоставление образовательного обеспечения и услуг, которые кроме получения обычных эстетических впечатлений, делают понимание туристами геологии и геоморфологии места (включая его роль в развитии наук о Земле). Согласно анализу перспектив их развития одно из ведущих мест на отечественном и приоритетной на мировом туристическом рынке может занять Карпатская дестинация, учитывая ее рекреационный потенциал и трансграничное положение.

Методологическими основами исследования является исследование предпосылок развития создания геопарков в пределах Украинских Карпат на сочетании методов отраслевого и территориального анализа. В частности, для



исследования применен системный подход при использовании методов сравнения, статистического, аналитического анализа и тому подобное.

Выводы. Таким образом, создание и развитие геопарков в пределах Украинских Карпат будет способствовать рациональному использованию геологической и геоморфологической наследия горных территорий, в частности, привлекательных объектов неживой природы. Объекты геолого-геоморфологической наследия могут служить основой для развития гео-, экотуризма, разнообразие услуг и товаров на туристическом рынке. Привлекательные объекты неживой природы могут служить основой для создания туристического бренда Украинских Карпат, приведет к росту туристического потока и привлечения как отечественных так и иностранных туристов.

Ключевые слова: геопарк, аттрактивные объекты, геолого-геоморфологическая наследие, виды туристической деятельности.

Problem in general and its connection with important scientific and practical tasks. Ukrainian Carpathians feature among the Carpathian arc and presentable variety of unique and / or specific recreational facilities geological and geomorphological heritage, but their role and importance is not fully represented. Scientific and educational emphasis on geological and geomorphological heritage preceded the creation heoparkiv as innovative conservation units that attract tourists.

Analysis of recent research and publications. The study of the prerequisites of becoming heoparkiv in Ukraine dedicated work Kravchuk Ya., Zinkiv Yu., Shevchuk O. Projected development schemes demonstration models of the evolution of the Earth, the operation of the example heoparkiv Ukrainian Carpathians engaged Kravchuk Ya., Brusak B. Definition of conceptual and methodological foundations of study online in heoparkiv Ukraine devoted to the works of A. Bohutsky. State heoparkovoyi network, particularly within the Ukrainian Carpathians is still white gap to fill it and the subject of this article.

The article aims to reveal the essence of the international category of conservation and sustainable use heospadschyny – heoparkiv as innovative environmental unit.

Presenting main material. The Ukrainian Carpathians are a part of the mountainous system of the Eastern Carpathians (which are traditionally divided into the External Eastern Carpathians and the Internal Eastern Carpathians) in the West of Ukraine. The Eastern Carpathians stretch from the upper reaches of the San to the headwaters of the Suchava. They are 280 km long and 110 km wide. They partially occupy the mountainous territory of Zakarpattia Oblast, Lviv Oblast, Ivano-Frankivsk Oblast, Chernivtsi Oblast.

Their area is over 24000 kml. The Ukrainian Carpathians are presented by the eastern part of Beskids, Gorgany, Chornohora, Vihorlat-Gutin Area, Marmarosy and Chyvchyn Mountains.

The relief of the system is represented by the mountainous ranges divided by longitudinal lowlands and deep cross-cut valleys that stretch mainly from the north-west to the south-east. The height of the ranges varies from 120-400 m above the sea level at the foot of the mountains to 500-800 m in the cross-mountainous valleys and 1500-2000 m along the main ranges.

The highest peaks – Hoverla (2061 m), Brebeneskul (2032 m), Pop Ivan (2028 m), Petros (2020 m), HutynTomnatyk (2016 m), Rebra (2001 m) – are situated in the Chornohora range. The highest peak of the Gorgany is Syvulia.

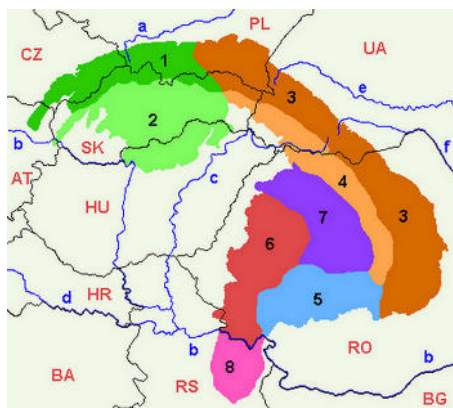


Fig. 1 The Carpathian Mountains (http://uk.wikipedia.org/wiki/Українські_Карпати).

1 – The Western External Carpathians; 2 – The Western Internal Carpathians; 3 – The Eastern External Carpathians; 4 – The Eastern Internal Carpathians; 5 – The Southern Carpathians; 6 – The Apuseni Mountains; 7 – The Transylvanian Plateau; 8 – The Serbian Carpathians.

The variety of geomorphological structure of the territory of the Ukrainian Carpathians is a result of complicated long-term geological transformations of the territory. The geological structure is represented both by the natural (denudation of the walls) and anthropogenic (development of the open pits) exfoliations of different periods and epochs, and by the rocks that differ in their lithologic structure and petrography [2]. Geopark is an innovative ecological category with the international meaning [1].

Creating a successful geopark demands proper choice of the object, getting support from the state on all the stages, securing support from the local population and from the private industry. In completing the functional task of the park



not only the objects of the geological heritage have important meaning, but also esthetic and attractive landscapes. The level of conditions for entertainment, meeting professional geologic interests, availability of historical and cultural objects, well developed infrastructure and information campaign are also of great importance. As a rule the geoparks are created on the basis of nature protection territories, separate objects of various classes, their parts and nearby areas [3].

Chart 1

***Nature reserves and National Parks of the Ukrainian Eastern Carpathians
(Ivano-Frankivsk, Lviv, Zakarpattia, Chernivtsi oblast as of 2012)***

#	Name of the nature protection objects	Area, hectare	The year of creation
Ivano-Frankivsk oblast			
1	Nature reserve "Gorgany"	5344.2	1966
2	Carpathian National Park	50300.0	1980
3	National Park "Gutsulshchyna"	32271.0	2002
4	Halych National Park	14684.8	2004
5	National Park "Synyohora"	10866.0	2009
6	Verkhovyna National Park	12022.9	2010
-	Total area	125489.0	-
Lviv oblast			
1	Nature preserve "Roztochia"	2084.5	1984
2	Iavoriv National Park	7078.6	1998
3	National Park "Skole Beskids"	35684.0	1999
4	National Park "PivnichnePodilla"	15587.9	2010
-	Total area	60435.0	-
Zakarpattia oblast			
1	Carpathian Biosphere Reserve	53630.0	1968
2	National Park "Synevyr"	40400.0	1989
3	Uzhansky National Park	39159.0	1999
4	National Park "ZatcharovanyKray"	6101.0	2009
-	Total area	60435.0	-
Chernivtsi oblast			
1	Vyzhnytsia National Park	7928.4	1995
2	Cheremosh National Park	7117.5	2009
3	Khotyn National Park	9446.1	2010
-	Total area	24492.0	-
	Total area of nature protection objects in bounds of the Eastern Carpathians	349705.0	-

Distribution of the animals in the Carpathians is complicated and tessellated. Most of the Carpathian animals – bear, deer, wild boar, lynx, Carpathian squirrel, wildcat, weasel, European pine marten, dormouse, etc., many kinds of amphibians, birds and fish – have a widespread territory. They inhabit the territory from the foothills valleys, which are situated 200 meters above the sea level, to the subalpine shrub, which are situated 1600 and even 1850 meters above the sea level. Shrew, crocidura, most of the bats, steppe polecat, lutra, mink, spermophilus, European hamster, and muskrat has limited vertical distribution. They do not inhabit highlands. There are only two typical highland species that inhabit the territory which is 1650-2000 meters above the sea level, they are Alpine shrew and European snow vole.

The Ukrainian part of the Carpathians makes only 10.3% of their total area, but there are more than 1500 objects of the nature protection fund (NPF) located there, with the total area of 0.5 million hectares (8.6%).

There are two nature reserves ("Roztochia" and "Gorgany"), a biosphere reserve ("Carpathian") and 14 national parks, with the total area of about 350,000 hectares, functioning in the territory. The area of nature protection objects is constantly growing (Chart 1).

Among the other nature protection objects there are nature landscape parks, natural monuments (botanical, hydrologic, complex, geologic, arboretum), zakazniks (landscape, forest, botanical, common zoological, ornithological, ichthyological, common geological, paleontological, karstic-speleological), botanical gardens, monuments of garden design, nature reserve areas etc. (Chart 2).

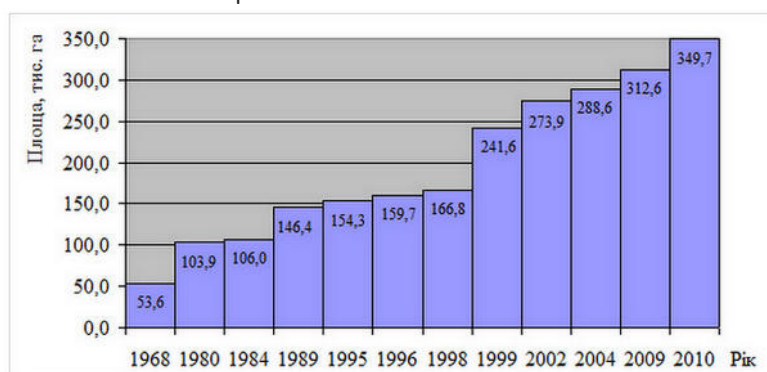


Chart 2

Nature protection objects of the Ukrainian Eastern Carpathians (Ivano-Frankivsk, Lviv, Zakarpattia, Chernivtsi oblast)

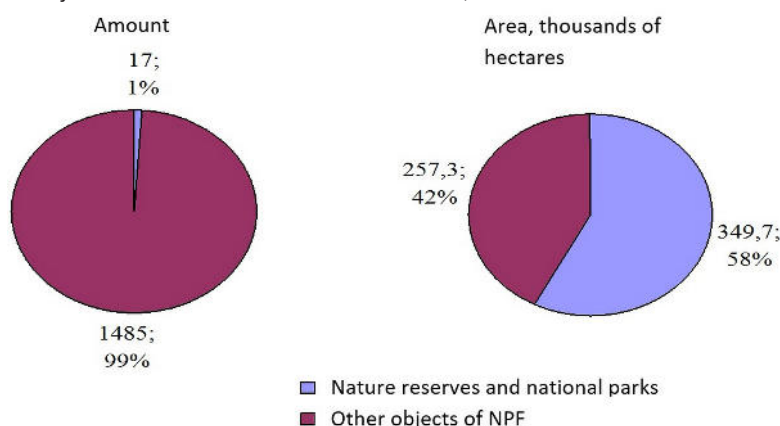
#	Administra-tive oblast	Amount of nature protection objects	Area, thousands of hectares	Nature reserves and national parks		Other nature protection objects	
				Amount	Area, thou-sands of hectares	Amount	Area, thou-sands of hectares
1	Ivano-Frankivsk	456	195.6	6	125.5	450	70.1
2	Lviv	347	148.6	4	60.4	343	88.2
3	Zakarpattia	456	177.0	4	139.3	452	37.7
4	Chernivtsi	243	85.8	3	24.5	240	61.3
	Total	1502	607.0	17	349.7	1485	257.3

As one can see in the chart 2 the average area of the nature reserves and national parks is more than 20.000 hectares, the largest one, with the area of 35.000 hectares, is situated in Zakarpattia oblast, the smallest one, with the area of 84 hectares, is also situated in Zakarpattia oblast.



Pic.2 The growth of the territory of nature reserves and national parks in the Eastern Carpathians during 1968-2010.

All the powerful recreational potential of the nature reserve fund of the Eastern Carpathians is not properly used for the development of recreation, namely for the development of tourism. A part of these educationally and scientifically important objects has already been included into touristic routes, but most of them are not used nowadays.



The available potential is not the main criterion for creation of the geoparks. Their creation is preceded by the scientific investigation and recreational valuing of the geological and geomorphological objects, which will serve as the resource base for the geoparks. Some of the objects of the inanimate nature in bounds of the Ukrainian Carpathians were picked out in the process of analysis of the attractive objects that can be included into the geoparks. They are as follows:



1. Hoverla – the highest peak of the Ukrainian Carpathians. It is 2061 meters above the sea level. It is situated on the bound between Ivano-Frankivsk and Zakarpattia oblast on the Chornohora range, which is the highest mountainous range in Ukraine. “Hoverla” means “snow mount” in Hungarian.

2. The peak Pikuy (1405 m) is situated on the VerkhovynaVododilny range. The range stretches from the reaches of the rivers San and Uzh to the headwaters of the Rika River. It consists of the sandstones. The range is asymmetric and has wavy ridge. The main Carpathian watershed goes along the top of the range. Here are the reaches of some of the Carpathian rivers – the Latorica, the Sryi, the Rika. There are several convenient mountain passes here, as Uzhok Pass, Verecke Pass.

3. Bald and deserted Gorganywhich are hot in the day time and frozen at night. Even moss can hardly grow there. These are “The Gregots” or as they are also called “The Tsokots” or the “The Grokhots”. “The Gregots” are constantly moving.

4. The rocks in bounds of the Outer Carpathians. These are remains of the Paleocene Epoch, with the approximate age of about 55.000.000 years. The rocks consist of grey, massive, quartz sandstones, the strata of which, due to the tectonic movements, have been put almost vertically creating plumb walls.

5. Protiati Kameni–geological monument of the local meaning, a group of picturesque rocks located in the Pokuty-Bukovinian Carpathians on the bounds of Putyla and Vyzhnytsia Raion of Chernivtsi oblast. The rocks consist of the dissected strata of sandstones. Some of them have slots and passages, that is why they are called “ProtiatiKameni” (eng. Crosscut Stones).

6. Clinker flow in the suburbs of Uzhhorod (Radvan open pit), connected with the Vihorlat-Hutin Area. It appeared about 3.000.000 million years ago as a result of volcanic eruption. In the relief it is presented by the tracks of lava flow going through the rock side cracks to the surface.

7. Starunia mud volcano located in the village Starunia, Bohorodchany Raion, Ivano-Frankivsk oblast. It is the geologic nature monument, which is unique in the Carpathian region, as well as in the world. It appeared due to the exploitation of ozocerite and oil deposits about a hundred years ago. Now the underground waters enriched with the oxygen reaching the oil layers cause their oxygenation, giving them energy “to nourish” the volcano.

8. Druzhba Cave is the biggest calciferous cave in the Ukrainian Carpathians. Its passages are 1 km long and go 46 m under the ground. The entrance to the cave is located in the village Mala Uholka (Tiachi Raion, Zakarpattia Oblast). This area is characterized by the well-developedkarst that is why different karst forms can be found here.

9. Molochny Kamin – karst cave located in Tiachiv Raion, Zakarpattia Oblast near the village Velyka Uholka. It is situated in the calciferous rock of the same name.

10. Pysany Kamin was once the Slavic pagan sanctuary, where people prayed to the Sun. It is an important monument of nature, history and culture of the Gutsul Region and of Ukraine.

11. Column of the volcanic tuff – “KamianaKvitka” – a rock, which has a form of a column that appeared as a result of eruption of one of the biggest ancient volcanoes. Today it is the remains of the side volcano crater Antalovocka Poliana, which is 8 meters high. The monument is situated near the village Nevytske (UzhhorodRaion, Zakarpattia Oblast).

12. Soimen outcrop of Eocene sediments –the geologic monument of Ukraine (Zakarpattia Oblast). In the rocks on the left bank of the Rika River there are outcrops of the terrigenous deposits of the paleogene period which are 300 meters long and 10 meters high and which are not characteristic of the Ukrainian Carpathians, which are represented by the sandstones with the argillite and siltstone layers. Vialov O.S. characterized them as a part of Soimen Suite. It is interesting because of the sandstones of “Shypit type”, similar to the ones in the Duklian and Chornohora Zones. This picturesque place is often visited by the tourists.

13. The outcrops of the rocks of Menilit Suite on the right bank of the Opir River in town Skole. This term was used to refer to the thick of rocks, made of black argillites and silicites enriched with the organics.

14. Holiatynka outcrops of the cretaceous rocks – the gologic monument situated on the right bank of the Holiatynka River in the picturesque valley. In the outcrops, which are 100 m long and 10m high, there is an open contact of black quarzilitic sandstones and argillites of the lower cretaceous with red and green argillites and chalky clay.

15. Geologic nature monument “Skeli Dovbusha” (Eng. “Dovbush Rocks”) is a natural fortress of the 10th century, which is situated 668 meters above the sea level. These rocky ledges of the sandstone appeared more than 70.000.000 years ago on the sea ground. They are about 80 m high. The rocky “maze” stretches for almost 1 km in the forest. In the 10th-11th century here was the pagan sanctuary – “paleoobservatory”. According with the legends in the 17th -18th centuries here lived opryshky, who used the rocks as their cover.

16. The outcrops of the volcanoes “Chorna Hora”. To the East from the town Vynohradiv, on the right bank of the Tisa River, one can see the rocky precipice, which is 500m long and up to 100m high. Here are the outcrops of the andesite, which makes the volcano crater. After its appearance the volcanic-tectonic rise was a rocky island in the piece of water of the lake-sea type, which covered the territory of today’s Zakarpattia. The depth near the island was from few meters to few hundred of meters. The rise remained as a mountain due to the stability of the rocks that form it.

17. The rock “Zakamianila Bahachka” is situated on the bank of the Carpathian River Putyla. It is a rock, which is 30 meters high and resembles the monument of strict woman. It appeared due to the weathering of the sand stones of Paleogenic period.



Except the objects of geologic and geomorphologic heritage to the geoparks should be included archeological, ecological, historical and cultural objects [4]. Creating such nature protection object will support the development of the geotourism, as a kind of touristic activity, for educational purposes and services, which will provide understanding of the geology and geomorphology of the place (along with its role in the development of the sciences about the Earth), as well as getting esthetic impressions [5]. Hence there can be pointed out the main functions of the geoparks:

- Nature protection – realized through protection and reasonable use of the regional geologic and geomorphologic heritage along with the landscape;
- Geological-ecological educational – provides getting of the knowledge about geologic and geomorphologic heritage of the territory in comparison with the other nature protection objects by the tourists;
- Pedagogic – realized through promotion of the meaning of geologic and geomorphologic heritage in the consciousness of the society and formation and functioning of the system of norms of behavior in the environment;
- Scientifically-promoting – realized through the usage of wide range of popularizing instrument, which will ensure the development of the education and providing knowledge about the Earth, and geoparks as educational centres;
- Etc.

Conclusions and recommendations for further research. So, creation and development of the geoparks in bounds of the Ukrainian Carpathians will bring us to rational usage of geologic and geomorphologic heritage of the mountainous territory, represented by the attractive objects of the inanimate nature. The objects of this heritage can be the basis for the development of geotourism, to vary services and goods in the touristic market, to facilitate protection of the geologic and geomorphologic heritage of the Ukrainian Carpathians. Attractive objects of the inanimate nature can serve as the basis for creation of touristic brand of the Ukrainian Carpathians, which will lead to the growth of the touristic stream and attraction of both Ukrainian and foreign tourists.

1. Богуцький А. Концептуальні і методичні засади обґрунтування мережі геопарків в Україні /А. Богуцький, Я. Кравчук, В. Брусак, Ю. Зінько, К. Москалюк, О. Шевчук. – Режим доступу. – <http://www.geomandry.com.ua>.
2. Зінько Ю. Формування міжнародного геопарку «Скелясті Бескиди» як центру геотуризму. – Режим доступу. – http://tourlib.net/statti_ukr/zinko4.htm
3. Кравчук Я. Проектовані геопарки Українських Карпат як демонстраційні моделі еволюції Землі /Я.Кравчук, А. Богуцький, В. Брусак, Ю. Зінько, О. Шевчук. – Режим доступу. – <http://collectedpapers.com.ua>.
4. Шевчук О. Геопарки як форма збереження геоспадщини, розвитку геосвіти та геотуризму. – Режим доступу. – http://geograf.lnu.edu.ua/Publik/Period/visn/38/042_Shevchuk.pdf
5. Шевчук О. Методичні засади створення національних геопарків в Україні. – Режим доступу. – <http://collectedpapers.com.ua>
6. Шлях «Гео-Карпати» створений при фінансовій допомозі Європейського Союзу в рамках Програми Транскордонної Співпраці Польща – Білорусь – Україна 2007–2013. – Режим доступу. – <https://www.pwsz.krosno.pl/gfx/pwszkrosno/pl/defaultaktualnosc>

Reference

1. Bogucki A. Conceptual and methodological principles of justification network in Ukraine heoparkiv / A. Bogucki, J. Kravchuk Brusak V. Yu Zinko, K. Moskaliuk O. Shevchuk. – Access mode. – [Http://www.geomandry.com.ua](http://www.geomandry.com.ua).
2. Zinko Yu Formation International heoparku «Beskid Rocky» as the center heoturizmu. – Access mode. – http://tourlib.net/statti_ukr/zinko4.htm
3. Kravchuk J. Projected heoparku Ukrainian Carpathians as a demonstration model of the evolution of the Earth /Ya.Kravchuk, A. Bogucki, V. Brusak, Yu Zinko, O. Shevchuk. – Access mode. – [Http://collectedpapers.com.ua](http://collectedpapers.com.ua).
4. Shevchuk O. Heoparku as a form of preservation heospadschyny, development and heoosvity heoturizmu. – Access. – http://geograf.lnu.edu.ua/Publik/Period/visn/38/042_Shevchuk.pdf
5. Shevchuk O. Methodological bases for National heoparkiv in Ukraine. – Access mode. – <http://collectedpapers.com.ua>
6. Way «Geo-Carpathians» was created with funding from the European Union under the Cross-Border Cooperation Programme Poland – Belarus – Ukraine 2007 – 2013. – Access mode. – <https://www.pwsz.krosno.pl/gfx/pwszkrosno/pl/defaultaktualnosc>