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## **Geodiversity: new category in the development of the Nature reserve fund of Ukraine**

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**As part of the set geodiversity role in shaping the Nature reserve fund of Ukraine. The history of the emergence of the concept: geodiversity. Historical background of geological monuments as a new category of Natural reserve fund Ukraine. Create geosites, geotops and geopark as a way to protect geodiversity. The problem of preserving the diversity of abiotic world for future generations.**

*Key words:* nature Reserve Fund of Ukraine, geodiversity, geosites, geopark.

## **Георізноманітність: нова категорія в розвитку природно-заповідного фонду України**

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**Установлено роль георізноманітності у формуванні природно-заповідного фонду України. Розглянуто історію поняття «георізноманітність». Проаналізовано історичні передумови виникнення геологічних пам'яток як нової категорії природно-заповідного фонду України. Показано важливість геосайтів, геотопів, геопарків як способів захисту георізноманітності. Висвітлено проблему збереження різноманітності абіотичного світу для нащадків.**

*Ключові слова:* природно-заповідний фонд України, георізноманітність, геологічні пам'ятки, геопарки.

**Introduction.** Nature Reserve Fund (NRF) of Ukraine are areas of land and water area, natural systems and objects which have a special nature, scientific, aesthetic, recreational and other value and marked to preserve the natural diversity of landscapes,

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animal and plant gene pool in the world, maintaining general ecological balance and provide background environmental monitoring.

Geodiversity is a relatively new category of the NRF in Ukraine. Create geological heritage monuments in Ukraine began in the 30s of the last century (Monastyrski cliffs).

In 1961 of geological monuments first gained official status. In 1985, he issued a guide directory «Geological monuments of Ukraine» Ukraine 1993 is a participant of the Central ProGeo (European Association for the Conservation of geological heritage). That is membership in this international organization revived movement for the conservation of geological heritage in our country. The project GEOSITES developed in 1995 by the International Union of Geological Sciences (IUGS) with the support of UNESCO Ukraine updated register of monuments of geological heritage and has released four volumes of the book «Geological natural monuments of Ukraine» [10].

Currently in the NRF recorded 370 geological sites, with different environmental status [1]. Among them are the different types: stratigraphic, geochronological, paleontological, mineralogical, petrological, tectonic, volcanic, cosmogenic and geomorphological and landscape, hydrological and hydrogeological, beautiful (aesthetic), technogenic, complex.

**Material and methods of research.** When developing the methodological framework programs for the conservation of biological and landscape diversity, the concept geodiversity included in conservation practice in Europe [13].

Geodiversity can be defined simply as a set of geological (rocks, minerals, fossils), geomorphological (landscape, physical processes) and hydrogeological processes (natural and artificial sources). It includes their complexes, relationships, properties and interpretation system [6].

The term first appeared in articles Tasmanian and Australian scientists in the mid-1990s [4; 9; 11], shortly after the adoption by many countries of the United Nations (UN) Summit in Rio de Janeiro in 1992, the Convention on Biological Diversity on Earth. Tasmanian Geophysics realized that there are many parallels between biological diversity and variety in abiotic world [7].

Over time, the use of the term «gediversity» spread, particularly in Australia [2; 3], Scandinavia [8] and the UK [6].

Some definitions from the UK and Europe include cultural aspects, as an example of the wording of the Manifesto of the European heritage of the Earth and geodiversity «Geodiversity connects the Earth, its people and its culture ...» [7].

So, gediversity - a variety of elements of geology - rocks, minerals, fossils and natural landforms that are formed over geological time, together with natural processes such as erosion and landslides that are active today.

Therefore, recognition geodiversity enables to increase awareness of the importance of abiotic (physical, rather than biological) parts of the ecosystem.

**Results and discussion.** Create geosites, geotops and geopark is a way to protect geodiversity. Geosites defined as sites of special scientific interest, and geotops - a valuable geological and geomorphological formation, covering a territory.

At the level of environmental practices in geoheritage implemented a number of international and national programs to geosites selection of international importance, extension of protected categories and creating geopark - innovative forms of conservation and recreational use geoheritage.

The European Geoparks Network (EGN), established in 2015, now consists of 64

Geoparks from 22 European Countries. Working together, the members co-operate to promote the protection of their geological heritage and to use that heritage to promote sustainable economic development in their respective regions.

The concerned communities established the Global Geopark Network (GGN) supported by UNESCO in 2004 to conserve Earth's geological heritage, as well as to promote the sustainable research and development. The GGN membership is formed by national geological parks, or geoparks — local areas focused on the protection of geological features and heritage.

Of the 936 sites inscribed on the World Heritage List, 725 are cultural, 183 are natural and 28 are mixed sites. Only 20 are inscribed primarily because of their geological interest.

In Ukraine, the World Heritage List includes only one historical and geological monument – Kamyana Mohyla (2006) [12]. But, there are many sites that deserve to be credited to the World Heritage List.

During the English Geodiversity Forum (2013) in the UK has developed a program recommendations for actions to preserve, care and use geodiversity (Geodiversity Charter for England) [5] for citizens, organizations, land users, landowners, industrialists, business sector, local and state authorities, educational sector investors. Its position can be adapted to Ukraine.

1. To develop their own sense of pride should visit, explore and encourage others to store objects of the geological heritage of Ukraine.

2. To promote local attractions, use them for recreation, photo shoots and celebration.

3. Placing information on social networks about visiting geological monuments.

4. Refrain from vandalism and stretching historic sites.

5. Assist in the identification and registration of new geosites.

6. Arrange for school, travel and study tours.

7. Make geological features elements of local history of his native land.

8. Promote the value and use geodiversity Ukraine through research and presenting them to the public domain.

9. Actively cooperate with other countries to share knowledge and experience in the creation and protection geosites and geopark.

10. Hold conferences, forums, congresses, seminars, public lectures on all levels.

11. Exchange of students, graduate students and young scientists.

12. Create thematic web sites for kids and adults.

13. Establish a strong bond of culture and nature.

Privacy geodiversity allows solving the following problems: the possibility of a variety of organic life, the preservation of characteristic forms of important geological outcrops and hydrological objects to preserve the structure of natural and cultivated landscapes.

It is clear that the provision of geological heritage objects official status does not guarantee complete protection. Constant change economic policy, moral values, political opinion adversely affected sites.

Therefore, protecting our heritage we thus raise national awareness and love of country.

**Conclusion.** All geological objects are particularly vulnerable not only to human

influence but to a variety of natural processes such as invasion of vegetation, weathering, which over time can lead to a significant deterioration of monuments or even destroy it (Outcrop of Miocene Tomakivski layers).

Recognition of place as the geological nature monument to take a certain action to prevent these processes. There are many geological sites around the world that are of international importance, and we are responsible for ensuring that the geological heritage. Only by working together, we can ensure that geodiversity our time, we are proud to be passed on to future generations.

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