



## METHODOLOGICAL PRINCIPLES OF QUASI NATURAL LANDSCAPES

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To determine the values of quasi natural landscapes according to biodiversity specific parameters (number of major taxon, species that are protected, the concentration indices of species richness and relative species diversity, etc.), they usually use some principles that have the characteristics of value.

The first principle is minimally affected by the choice of ecosystems, rather large areas that do not undergo regular economic activity and often support a high richness of flora, fauna and ecosystems. There are few limits for application of the principle, but it is a less suitable on the background of large spaces of hardly affected or transformed states.

The second principle is a substantial contribution to maintaining biodiversity in the area. The difference between this principle from the previous is that it does not rely on chance, and specific data on the presence of certain species.

The third principle is the evaluation of contribution to landscape diversity, which has independent value and contributes to the conservation of flora and fauna within a large geographical areas (e.g. areas of land degradation, or unstable or intensive agriculture). The principle is implemented by keeping the structure and quality of landscape features, such as the characteristics of irregularities of the relief (in the case of large ravine systems).

The fourth principle is the assessment of the unique species of quasi natural landscape and its potential role in advertising and other public information support preservation: a) biological and landscape diversity, and b) the development of different areas (eco-tourism, differentiation of taxation and legal support).

The fifth principle is the assessment of the prospects of development of land in terms of preservation (loss) of biodiversity, sustainable use of natural resources and social development (economic value or potential). Selection of quasi natural landscaping is an environmental policy instrument that links conservation with economics, not with the idea of absolute commandments formalities or ignore values of natural resources.

1. Signs of biological values: natural species richness of "local" species; absence (minimum presence) of invasive species; minimum of violations of natural communities and territories; presence of endangered and vulnerable species and communities; topographically "sufficient" area for the estimated component of biodiversity (or at least environmentally) of the global territory for which a set of disorders is recognized as insignificant; abandonment of land, if living is without loss of vulnerable species, a small area accessible to the public.

2. Signs of landscape values: irregularity of relief; features of the geological genesis; availability of specific geological sections and denudation; representation of the landscape and its habitat if it is possible to estimate; (semi)-natural hydrological regime of the territory (minimal or natural fluctuations in groundwater level), presence of riding marshes of limited occurrence, ponds and watercourses; priority of conservation of quasi natural landscape type associated with poorly preserved ecosystems in the region, or in connection with the main migration routes of animals.

3. Signs of social attractiveness: quasi natural unique kind of landscape; attractiveness in terms of promoting the idea of biological and landscape diversity; attractiveness in the development of ecological tourism.

4. Favorable prospects of the territory: in terms of biological and landscape diversity; in terms of sustainable use of natural resources (including the ability to influence the mode of land use); from a social perspective.

5. Signs of economic classes for quasi natural landscapes: mosaic of agricultural areas and their small-outline; variety of types of land use and, properly, numerous ecotones (for crossing different habitats); agricultural land surrounded by natural ecosystems; extensive land use, minimum

chemicalization; resistant crop rotation to prevent the degradation of soil (usually with a high proportion of perennial legumes); appropriate level of environmental and agrarian culture, which is determined by environmental certification of production; relative stability of stakeholders; of sustainable traditional agriculture.

Critically important are the signs of biological and landscape values. Signs of social attractiveness and availability of favorable prospects of the area are successful in maintaining quasi natural landscapes. Signs of quasi natural landscapes economic classes allow outlining areas where there is a possible application of support schemes of quasi natural landscapes on the basis of EU experience and views, which are determined by the terms of a certain territory. It should be noted that the full set of these signs was not used in any country. The most regularly used features are natural species richness of "local" species, a minimum of violations of natural communities and areas, abandonment of land, if living is without loss of vulnerable species, unique species of quasi natural landscape.

Different systems criteria (systematic and ranked estimates of wealth, diversity, rarity, etc.) in many cases suitable for determining of quasi natural landscape, especially those that retain importance for biodiversity, despite the excessive influence of the people.

The need for special protection for small area of quasi natural landscapes is because for the last 10-15 years there has increased an anthropogenic impact on some of the unique natural beauties in the past, which few people visited. In addition, there was danger of some negative consequences of the transition forest and game lands to private individuals and businesses. Benefits of quasi natural landscapes to larger environmental objects are that a small area will better perform visual, auditory and control traces in its territory. Comprehensive protection of quasi natural landscape does not require much effort and resources and is not in violation of the traditional system of forest, game and water, and supplements it by providing for the interaction of the park and game reserves with adjacent areas [1 - 10].

*Research of quasi natural landscapes must meet three objectives:*

- 1) respect for all creatures that inhabit it, regardless of human sympathy;
- 2) attempt a deep knowledge of life and relationships in the area subject to conservation;
- 3) protection of "independence" of the territory against possible attacks.

*The procedure of quasi natural landscapes research includes the following stages:*

*The first stage.* Conducting research, previous evaluations of environmental conditions in the area, considered quasi natural. The assessment begins with determining its borders and detailed study for mapping, reference materials and by interviewing local scientists, local lore. Landscape should be relatively small without intensive economic development. In the case of fragmentation of the infrastructure, it is advisable to select several areas and evaluate each of them separately. When the assessment should take into account that the man-made objects and areas heavily modified by man shall be not more than 20% of the area. At this stage the observation points are laid over the projected route of research. Such sites are evenly distributed on the plot.

If a limited local area, sites should be chosen outside so as to assess the most expressive side. If the area is too large (> 1000 ha) and includes other features for landscapes, it is broken into smaller segments and each is evaluated separately.

*The second stage is a survey.* In those seasons, time of day and under such weather conditions, in which evaluative properties are the most distinct, the experts (scientists, professors, teachers, students, research groups) visit observation points for an assessment. At each site experts analyze the territory, photograph the area, make the panorama, give a brief description, which should include the following information:

- The name of the territory;
- Location (region, district, forestry);
- Land area (ha);
- Characteristics of the territory, land use;
- The total physical and geographical characteristics of the territory (geology, geomorphology, hydrology, climate, surface water, other landscapes);
- General description of the flora and the presence of rare species, including listed in the Green and Red Book of Ukraine;
- General characteristic fauna, rare species of fauna, including the Red Book of Ukraine;
- Historical and cultural significance of the territory;

- Aesthetic assessment of the area;
- The availability and the use of berries, medicinal mushroom raw game animals;
- Scientific, conservation value of this territory;
- Proposals for the category and type of territory and key recommendations for the regime;
- Total map-scheme of quasi natural landscape.

*Third stage* is visiting owners and users of natural resources from outside of quasi natural areas. After the research phase, the experts determine the value of the criteria: the ratio of natural and anthropogenic areas, the availability of field boundaries, unspoiled places, the presence in the area attractions: the rocks, waterfalls, caves, old trees, monuments of history and culture of the region, presence of a viewpoint in the area, conversion of the groundwater, conversion of terrain, diversity of plant communities, the diversity of wildlife areas by the respective scores of 0 to 2.

0 points – the landscape is hazy, indifferent, remote from civilization, savagery and ferocity are not felt; dominated by sounds and smells of human origin, there are man-made objects that strongly violate the landscape, landmarks are missing, no observation points, terrain is flat; water bodies are missing, or watching is short (for example, because of a strong overgrown coast rush), area covered with wood or monotonous grassy vegetation (bare steppe, meadows, and solid wood), one can meet only a few species of insects, small animals and birds.

1 point – a moderately picturesque landscape, the landscape is quite clear; the remoteness from civilization is felt, but there is no sense of wildness, innocence, sounds and smells of nature are changing sounds and smells of civilization, man-made objects that violate the landscape, there are several tracts, a small number of monuments, there is one observation site, mountainous or rugged terrain is present (or a border area), mostly transformed water bodies with muddy water, equal to the coast, vegetation on the area represented by at least two groups, alternating between each other (oak or birch trees in the coniferous forest), one can meet animals and birds.

2 points - a very beautiful scenery, acute savagery, wildness areas, remoteness from civilization; completeness of only natural sounds and smells, all man-made objects harmoniously blend into the landscape, there are more than 3 scenic tracts, many attractions, there are several viewpoints of several different views, very hilly terrain or mountain, most water bodies were transformed (clean water, picturesque banks), some plant communities (meadows, orchards, forest), one can meet the large animals and birds, including predators.

As a result of mathematical treatment, an overall score is received indicating the level of nature-oriented value of quasi natural landscape. If the amount of points for each criterion is 24,1-32,0, the area of a quasi natural landscape has on its territory the vast majority of wildlife. If total score is 16,1-24,0, the landscape is actually quasi natural. If total score is 0-16,0, the area has conservation value, but may be considered quasi natural.

The survey goes with a master document “Results of the environmental assessment of a quasi natural landscape”, which includes the name, location and area, scores of environmental assessment, evaluation and timing of the expert committee.

*The fourth stage.* The rights and public participation in managing the protection, conservation and use of the territory of a quasi natural landscape.

On the territory of quasi natural terrain there are possible a recreational land management research and environmental education work, and effective implementation of various environmental projects.

This area should not be closed for humans. It is, primarily of an educational function, it teaches the careful attitude to nature, the right contact with her, a better understanding of its laws. That’s why this area is open to cautious and attentive visitors. In order to implement this task, here are laid marked trails, to leave them it is not permitted, determined "observation points".

Special attention is paid to the involvement of environmental and educational activities of young people, strongly supporting the school, student and youth initiatives are widespread among them positive information about the role of quasi natural areas to form a favorable image of a fond affair. Increasing the participation of the younger generation to environmental protection, particularly in decision making, strategic planning, developing and implementing programs in reserve management are essential steps towards sustainable development. It is possible to group formation based on student school forest, students research the problem of environmental groups that have observed the rules of attending a little transformed nature and conducted diary studies of this area, taking photos and video. Allowed direct interference in the life of the quasi natural landscape should become activities aimed at

protecting rare and the Red Book plants and animals, for example, artificial nests for bumblebees hanging nesting boxes, watching anthills, breeding larvae of the Swallowtail Butterfly in laboratory conditions, etc.

At the present stage in front of new conservationists there is a task to join protected areas into a single system, which is called the ecological network. Its essence is revealed in the "Program of National Ecological Network of Ukraine for 2000-2015". The development of ecological networks is possible by creating a chain of regional quasi natural landscapes [1-10].

Thus, research of quasi natural landscapes will not only ensure successful reproduction of wild fauna of forest and water, create conditions for recreation and tourism, get regular, noticeable in the local budgets income, but can become now an important link in the state system of ecological networks and facilitate the formation ecological outlook of youth.

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