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Garden-park landscapes and the econetwork system of the right-bank forest-steppe of Ukraine

A Law of Ukraine “About State program of formation national ecological networks of Ukraine on 2000-2015 years” was accepted in 2000. From this time a great work of the development of ecological network in Ukraine has been done. The including of garden-park landscapes in the structure of the ecological networks of Right-bank Forest-steppe of Ukraine were proposed in the article. Ought to say, the garden-park landscapes is a special group of anthropogenic landscapes. They are excellent examples of rational using of natural resources on the one hand and their conservation of the other. Garden-park landscapes are anthropogenic landscapes, created by man’s activity within the limits of which organized natural elements such as relief, water, soil, flora in combination with small architectural forms and constructions make up interconnected and correlated unity. Gardens and parks are the special scientific objects that devoted of the works of famous domestic and foreign scientists, which revealed the landscape-typological and artistic foundations of landscape architecture, technology issues creating green spaces, gardens and parks forming compositions, showed the role of social and ecological gardening. But from point of view of the physical geography and antropogenetic landscape science it isn’t investigated science problem. That why in article were showed role the garden-park landscapes in the structure of the ecological networks of the Right-bank Forest-steppe of Ukraine.

Key words: garden-park landscape, ecological networks, Right-bank Forest-steppe of Ukraine.

Кравцова І. В. Садово-паркові ландшафти та екомережа Правобережного Лісостепу України. Закон України "Про Державну програму формування національної екологічної мережі України на 2000-2015 роки" був прийнятий в 2000 році. З цього часу велика робота з розвитку екологічної мережі в Україні була зроблена. У статті пропонується розглянути включення садово-паркових ландшафтів в структуру екомережі Правобережному Лісостепу України. Варто зазначити, що садово-паркові ландшафти – це особлива група антропогенних ландшафтів. Вони є прекрасними зразками раціонального використання природних ресурсів, з одного боку, і їх збереження з іншого. Садово-паркові ландшафти – це антропогенні ландшафти, створені діяльністю людини, в межах якої природні елементи, такі як: рельєф, вода, ґрунт, рослинність в поєднанні з малими архітектурними формами і спорудами створюють взаємопов’язану і взаємообумовлену єдність. Сади і парки – це об’єкти наукового дослідження, вивченню яких присвячені роботи відомих вітчизняних та зарубіжних вчених, які дослідили ландшафтно-типологічні і художні основи ландшафтно-архітектури, розкрили питання технології створення зелених насаджень. Проте з точки зору фізичної географії та антропогенного ландшафтознавства – це не досліджена наукова проблема. Тому в статті була показана роль, яку садово-паркові ландшафти можуть відіграти в структурі екологічної мережі Правобережного Лісостепу України.

Ключові слова: садово-парковий ландшафт, екомережа, Правобережний Лісостеп України.

Кравцова И.В. Садово-парковые ландшафты и экологическая сеть Правобережной Лесостепи Украины. Закон Украины «Про Державну програму формування національної екологічної мережі України на 2000-2015 роки» был принят в 2000 году. С этого периода началась интенсивная работа по развитию экологической сети в Украине. В работе предлагается рассмотреть вопрос включения садово-парковых ландшафтов в структуру экосети Правобережной Лесостепи Украины. Следует отметить, что садово-парковые ландшафты – это особая группа антропогенных ландшафтов. Это прекрасные примеры рационального использования природных ресурсов с одной стороны и их сохранения с другой. Садово-парковые ландшафты – это антропогенные ландшафты, созданные деятельностью человека, в которых естественные элементы, такие как: рельеф, вода, почвы, растительность в соединении с малыми архитектурными формами и сооружениями создают взаимосвязанное и взаимообусловленное единство. Сады и парки – объекты научного исследования, изучению которых посвящены труды известных отечественных и зарубежных учёных, они раскрывают проблемы ландшафтно-типологических и художественных основ ландшафтной архитектуры, технологии создания

зелёных насаждений. Но с точки зрения физической географии и антропогенного ландшафтоведения – это не раскрытая в научном понимании проблема. Поэтому в статье показана роль садово-парковых ландшафтов в структуре экосети Правобережной Лесостепи Украины.

Ключевые слова: садово-парковый ландшафт, экосеть, Правобережная Лесостепь Украины.

Introduction. Today a world's society hasn't the main problem than the problem of balanced development. More precisely, a human being ought to stop on the level of *Homo habilis* or later level *Homo ...* when he was a part of a living substance. In these conditions human being can live. A great transformation of natural's conditions and resources began with the development of the economical activity. The real features of the danger of the human activity had been realized in the 70-th years of XX centuries by the scientists of the "Rome's club". They had prognosticated the global influence over the economical development to a condition of natural environment. Yet the beginning of the third millennium reveals a moment in which changes in social, scientific and technological sectors are rapid and multiple. In a dynamic environment changes in nature too become more and more human-driven, while the landscape becomes human-dominated [2, 14]. That's why, a balanced development of territories and rational using of the natural resources is an actual scientific problem.

The aim of the research is to show a place of the garden-parks landscapes in the structure of the ecological networks of Right-bank Forest-steppe of Ukraine.

Outgoing materials. Throughout the centuries, land use was adapted to the restricted technical ability of people to change land in Europe this led to a rather stable pattern of landscapes until the second half of the XIX century. Then around 1850 the industrial revolution started. It meant a revolution not only in the urban environment, but also in the rural environment.

The history of nature conservation and of urban ecological networks started as a reaction to the industrial revolution. Already in the last half of the nineteenth century and the first period of the twentieth century nature was integrated into urban planning, for instance when the main axes of towns were developed into green boulevards, such as the Champs Elysees and the footpaths along the Seine in Paris (Searns 1995). In the USA Frederic Law Olmsted proposed in 1860 a plan for Brooklyn and later for Boston to link the urban parks and quarters by green corridors, the "parkways". These are routes to and from the urban parks surrounded by trees and with an aesthetic and recreation function. These parkways were between 65 and 150 m wide. The Boston plan is still partly extant and known as the "Emerald Necklace", and also has a drainage function for the town. Drainage remained an important function of plans for green corridors through the whole century.

In England in the same period Ebenezer Howard (1898) developed the greenbelt concept, meant to regulate the urban sprawl of London and other urbanizing areas in England by surrounding the inner city with parks about 8 km wide. Behind this belt commercial and industrial areas should develop. London is the clearest example of this approach. The difference between the two approaches is the linking function of the parkways and the dividing function of the green belts.

In other countries, such as the Netherlands, developments took place comparable to those in the USA and England. The industrial revolution had a heavy impact on the cities and a need for urban green developed: the Amsterdam Vondelpark was one of the first urban parks, established in 1870. The Dutch housing law of 1901 allowed town authorities to designate areas as open space for public use. The city of Arnhem was, around that period, the first town that officially designated a park as "public green

space” and there the park system still reaches from outside town into its city centre.

Interesting experience nature conservation has Poland. The first legislative act, which allowed protect natural sites was established in 1918 as s Regency Council decree on the care of monuments of art and culture. Poland was one of the first countries in the world which introduce legal protection of geological objects. As a form of protection nature monument appeared in the first Polish Nature Protection Law issued in 1934, which was one of several such law instruments in Europe. Nature reserve, as the legal form of protection, was introduced to the next Nature Protection Law in 1949, but the nature reserves were created in Poland already in the XIX century [15].

Nature conservation and urban development joined forces in the 1920s. At the international congress on housing and urban development in Amsterdam in 1924 the statement was made that nature is important for outdoor recreation, for its scenic beauty and its intrinsic value. Urban planners and architects pleaded for the development of parkways and in this period several were constructed. After the first nature conservation year, 1970, changes took place in nature conservation in Western Europe. Nature conservation acts were revisited in many western European states, in some cases by amending existing legislation and in other cases by formulating a new and more integrated nature conservation policy relating issues such as recreation, urbanization, regional planning and agriculture. In this period nature conservation obtained a more or less accepted position in policy [14].

In 2000 a Law of Ukraine “About State program of formation national ecological networks of Ukraine on 2000-2015 years” was accepted. Today questions of working out of the ecological networks of Ukraine are showed in many scientific works such scientist’s as V. Domashlinec [1], Yu. Shelyag-Sosonko [2, 12], Ya. Movchan [4, 5], V. Nikiforov [6], G. Parchuk [7], V. Samoilenko [9], L. Tsarik [11] and others.

Results and discussion. An ecological network is recognized as a framework of ecological components: core areas, corridors and buffer zones, which provide the physical conditions necessary for ecosystems and species populations to survive in a human-dominated landscape [14]. Ecological network is a complicated, of different levels, spatial system, which includes natural biotic and abiotic elements, ecosystems, changed and degraded landscapes, which linked functionally and territorially [2, 3, 8, 12].

A special group of anthropogenic landscapes is a group of garden-park landscapes. It’s unique group in which natural’s components, anthropogenic and engineering systems are combined. Garden-park landscapes are anthropogenic landscapes, created by man’s activity within the limits of which organized natural elements such as relief, water, soil, flora in combination with small architectural forms and constructions make up interconnected and correlated unity.

Gardens and parks are the special scientific objects that devoted of the works of famous domestic and foreign scientists, which revealed the landscape-typological and architectural and artistic foundations of landscape architecture, technology issues creating green spaces, gardens and parks forming compositions, showed the role of social and ecological gardening. Significant number of works contains the information about the design, construction and renovation of parks and gardens, the features of their architectural planning and landscape organization, the basic techniques of composition trees and shrubs and flower-ornamental plantings, their features for color decisions, rules, planting and care etc.

The researches are conducted of the floristic composition of parks and gardens, historical experience introduction and acclimatization of woody plants, morphological

characteristics of native and exotic plant species, the annual cycle of development, methods of reproduction, and prospects for planting.

Gardens and parks are original expression of an epoch, man's attitude to nature; they embodied different religious and ethnical concepts. In antiquity in the Middle and Far East a garden meant "paradise" – a place of paradise pleasure; a garden – a dwelling of spirits, pagan deities; the symbolical image of nature, a place of profound internal contemplation of the world. In Europe in absolutism times gardens and parks demonstrated man's power over the nature. In the 18-th century a garden was the subject of romantic delight before the majesty of nature, the place inhabited by legends, antique myths and historical associations. But at the same time parks are considered to be museums of nature, and the question of their preservation is simultaneously developed. This is the way of overcoming man's separation from natural environment. They are a special compromise between necessities to transformation, using nature and at the same time to conserve it, forming comfort conditions for human's living and activities [13].

The formation of garden-park landscapes of the territory of research was influenced by two main factors. First, the characteristics of cross-border position territory for centuries. It does not matter that it was the limit: between North and South, or between East and West. As the barrier and function boundaries combination led some interesting trends. Or it was the isolation from the outside or outside influence diffusion. Secondly, the wave of development in which are in turn due to migration flows and historical features of the area. They are not only the branches of a single cultural and historical environment but also a variety of the ethnic elements. Overlay primary historical and cultural heritage of later accretions related to exposure to complications of existing technological elements, allows for the results of ethnic influences and features many ethnic groups.

In different historical times, man has sought to harmonize the environment that surrounded his. The first harbingers of modern garden-park landscapes were orchards with ancient villages and forest lands. According to N. Nehuzhenko [108] objects that formed the basis for modern historical and cultural landscapes were sacred tracts. Sacred tracts considered the seat of divine beings. They carefully guarded and kept in the inviolable condition. Beside them, prohibits any economic activity. As sacred objects were selected tracts of nature, distinguished by a special beauty or had unusual quality.

There are 114 garden-park landscapes on the territory of Right-bank Forest-steppe of Ukraine. They are included in to the natural-reserved fond and the register of the monuments of architectural and town-planning of Ukraine. These objects not only support a balance of the investigated territory, but carry out the recreation, historical-cultural role and the functions of water and soil protection. Ecological networks are different in purpose, function and domain. They can function at ecological, human and artificial levels. We offer to include the gardening-park landscapes into the structure of the regional and local networks of Right-bank Forest-steppe of Ukraine. The gardening-park landscapes that have considerable size or they are known as a masterpiece of gardening-park art can be core areas of regional networks. Such core areas can be National dendrological park "Sofiyvka" of NAS of Ukraine (168, 4 hectares), park "Olexandria" of NAS of Ukraine (200 hectares), Korsun-Shevchenkiivskiy park (97 hectares), etc. Small gardening-park landscapes can be core areas of local networks.

Gardens and parks created in areas unsuitable for agriculture. Within the

research of the territory they are confined to valleys, so the landscape structure view riverbed, floodplain, slopes and watershed types of areas. The studies have shown that in the structure of the riverbed type areas can distinguish natural aquatic systems and aquatic antropogenetic systems presented ponds, canals, waterfalls and more. Type of floodplain areas expressed in river valleys. Characteristic group tracts are various types of meadows, compound alluvial sediments of different grain size in meadow and meadow-marsh soils. Slope type of terrain represented slopes of varying steepness, morphology complicated. There tracts steep slopes (350), the so-called wall, many gullies, ravines and natural outcrops - scarps, cornices, various forms of weathering. They are covered with forests; plantations park partially fenced and terraced retaining walls, various available paths and stairs. Watershed type represented tracts plains areas and (0-30) surfaces, mostly busy park plantings. Typically, within this type of terrain built palaces, located commercial buildings, broke rides and more.

National dendrological Park "Sofiyivka", NAS of Ukraine was established on the area covered by steppe vegetation. The area is dissected beamed and the river valley Bagno with outputs crystalline rocks to the surface. Today "Sofiyivka" is a monument of world Landscape type of landscape art of the XVIII – early XIX centuries. It grows more than 2,000 species of trees and shrubs (of local and exotic), including: taksodium (cypress swamp), Weymouth pine, tulip tree, sycamore, spruce and many others.

Old park "Alexandria" was founded in 1797 originally as a summer and then the main residence of Count Branicki. It stretches over the river Ros on the south-western outskirts of the city Bila Cherkva on the area of 200 hectares on a former natural oak. The basis of the the relief of the park is sloping to the river slope southern exposure, cut in three deep beams into four parts. These wooded beams gradually expanded to the river and on the basis of their rates have been established covering about 12 hectares. In the coastal part of the ground breaking sources of curative water and granite. All this contributed to the creation of dynamic water streams with cascades and waterfalls. Landscape Park supplemented and enhanced affluent the river Ros and its lush valley, the water surface area within the park which exceeds 10 hectares.

On the outskirts of the village Sinitsa Khrystynivka district of Cherkasy region is Sinitsky park-monument of landscape art XVIII – XIX centuries. T. Yalovitsky initiated the creation of the park landscape in a picturesque village Sinitsa in the same river valley. Was excavated pond in the shape of a semicircle; poured four islands across the pond was built brick arch bridge in Venetian style. Opposite the bridge was central entry. In the eastern part of the park was built one-storey house with four columns at the entrance, stables, outbuildings; were planted rare species of trees: larch (*Larix decidua* Mill.), Crimean pine (*Pinus pallasiana* D. Don), plane trees (*Platanus* L.), broad-leaved linden (*Tilia platyphyllos* Scop.), tulip tree (*Liriodendron tulipiferum* L.). Area of the park is 42,3 ha.

The Nemirovsky park is a park-monument of landscape architecture and monuments of architecture and urban planning that situated in the city Nemirof of the Vinnytsia region. As for the History of the park, the exact time the park laying wasn't determined. Small parter adjacent to the western facade of the palace, and a larger (0.75 hectares) to the east. Today, the design of the parterers used with hedges Spruce (*Picea pungens*), berry yew (*Taxus baccata* L.) and evergreen boxwood (*Buxus sempervirens* L.). There are walls of hornbeam. Previously, a number of parterers had lawns. Through them you can see fields outside the park, to which more than 400 m. Today, the prospect blocked of the palace of culture. Parterers occupy about 1 ha of the 85 ha. South

of the palace is the slope. It is based on a cascade of large ponds. On the shore of one of them created a composition from granite boulders that resembles natural outputs crystalline rocks to the surface. Sometime in the park were 250 species of trees and shrubs, in 1941 - 100, in 1945 – 75, today – 113.

Park in the village Pechera of Tulchinsky district of Vinnytsia region was laid by G. Duka in 1682. Initially its plan had the shape of an elongated rectangle parallel to the river, divided in half on the larger side of the broad avenue Four-formed of linden tree from the gate to the palace. At the end of the eighteenth century, when fashion spread of the landscaped park, new home, Sveykovski, built a palace, greatly expanded area of the park through the valley and left bank of the Bug. In the Pecherskij park survived the last explosion past epochs: Romanesque architecture styled mausoleum. The inscriptions on the plinth made in Polish: "Designed Vladislav Gorodetsky," Constantine built and Yanina Potocki, wife Potocki, 1904. In the early nineteenth century, Jan Sveykovskyy built on the site of the former estate of the great palace in the classical style. From the entrance to the palace was a Four-linden alley. Planning Park on plane plateau was regular. The slopes were covered to the Bug of natural forest. On the slopes were natural stones that exits to the surface. Today Pecherskij park called just right-bank part, which occupies 19 hectares. Left bank called Sokiletskij park which has area of 26 hectares.

Garden-park landscapes are forward to:

- conservation and reproduction of the landscapes, specific and genetic diversity; preservation of the phytogenofond and phytocenofond;
- stabilization and supporting of dynamic equilibrium of the natural and economical systems;
- expansion and organization of the tourist and recreation system of the region;
- optimization of the nature using;
- amelioration of the living conditions.

Conclusions. The development of ecological networks in Ukraine is a logical development in the history of nature conservation and rational used of the natural resources. An increased understanding of the functioning of ecosystems and populations on the one hand, and the huge changes in the structure of the Ukrainian landscape on the other, made scientists, policy makers and planners aware that nature conservation through site protection would not be sustainable in the long term. Ecological networks and gardening-park landscapes as core areas in the structure of them are decision a great problem of harmonization the areas of human living and formation rational organized space.

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