

## **Ursynów Escarpment Linear Park design in the scope of a system of linear parks of the southern areas of left bank Warsaw**

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### **Introduction**

This article presents the concept of the greenways (linear parks) system in the southern region of left-bank Warsaw. This system is based on linear environmental structure of the terrain.

The methodical basis for the study is the project interpretation of natural landscape features, on which the city's urban composition should be based.

Natural lines and border zones, such as edges of high plains, river valleys, etc. should present the fabric to city planning. Those natural landmarks should be the places where important visual symbols will be located. They also may play the role of recreation areas or ecological corridors, as well as key elements of urban composition (Wejchert, K., 1974; Forman, R.T., Godron, M., 1986; Lynch, K., 1990; Searns, R.M., 1995; Walmsley, A., 1995; Wolski, P., 2000). In the contemporary urban planning of Warsaw, the linear layout of natural elements was exposed in a project called "Functional Warsaw" - designed by Chmielewski and Syrkus (1935). Yet nowadays, the value of border regions is not always valued. This potential was not utilised in Warsaw for over two hundred years. It was being destroyed, through locating of chance and mediocre architecture in the border areas. Such policy prevented continuation of rules of urban composition, which was developed along the escarpment strip since the middle ages till the end of the 18<sup>th</sup> century. These rules included locating of important culture objects along the edge of the Warsaw Escarpment (among others: the Citadel of Warsaw, the Royal Castle, the Ujazdowski Castle, the Royal Łazienki, Królikarnia (Rabbit Warren) Palace and Park, Ursynów Palace complex, Natolin Palace and Park). They were often accompanied by extensive landscaping. Urbanisation pressure endangers natural lines and border zones, leading to their fragmentation. Ignoring composition in the urbanisation process is one of many reasons of observed progressive degradation in these regions and the cause their potential is hardly ever used – especially in the last few years.

Frederick Law Olmsted is recognised as the originator of linear parks (greenways) idea. His 1865 project of Piedmont Way, as well as of Boston Park System from 1867 named Emerald Necklace are considered as the first objects of this type (Little, C.E., 1990; Searns, R.M., 1995; Fabos, J.G., 2004). In the second half of 20<sup>th</sup> century the "greenway movement" expansion in the USA has been resulting from the recommendation made by the President's Commission on American Outdoors in 1987. These recommendations postulated the creation of the greenways network,

which was based on natural landscape structure, especially the river systems and shoreline of the oceans (Fabos, J.G., 1995, 2004; Walmsay, A., 1995). Up to 1960s ancestral greenways were created (axes, boulevards, parkways), generally for communicational and recreational purposes. During second generation (1960-1985) their objective linked the need of the introduction of the green areas to the city with the automobile free communication. Both first generations of creating greenways had a priority to satisfy the human needs. The third generation (since 1985) has put the need to protect natural resources at the same level as the human needs (Searns, R.M., 1995). Nowadays, greenways' distinctive feature is their multipurpose character (Ahern, J., 1995; Searns, R.M., 1995; Fabos, J.G., 2004). One of the key functions of greenways planning is to indicate a combination of compatible uses with sustainable land use and to separate discordant ones. There are three main types of greenways (Fabos, J.G., 1995, 2004; Ahern, J., 1995): 1) Created for ecological purposes to protect the natural systems, especially along rivers, for biodiversity protection and facilitating the species migration; 2) Linking the different type recreational objects and recreational areas - for recreational purposes; 3) Created for historical and cultural resources protection for recreational and educational purposes. Also, creation of greenways could link all these goals together or any given combination of them (Ahern, J., 1995, Fabos, J.G., 1995, Searns, R.M., 1995).

Warsaw is located in the area of two main geomorphologic forms: the plain moraine plateau (Wysoczyzna Warszawska) and the Vistula Valley (Dolina Śródkowej Wisły). In result, we find an asymmetrical pattern of different plateaus, presenting natural border zones, with five distinct elements of the lie of the land: moraine plateau and at its edge - Warsaw Escarpment, upper terrace and its edge and lastly the lower terrace of the Vistula Valley. The two distinct border zones are the Warsaw Escarpment and the edge of its upper terrace. This is most clearly seen in the south terrains of left-bank Warsaw. The Warsaw Escarpment is a focal point of the city's landscape. The southern section of the Escarpment's slope (the so called Ursynów Escarpment) is largely overgrown with trees and is accompanied by three nature reserves: Kabacki Forest Nature Reserve, Natolin Nature Reserve and Ursynów Escarpment Nature Reserve. Natolin is a historic palace-park complex. At the edge of the upper terrace another historic palace-park complex is located – Wilanów - the former king's residence and an element of a historic complex, which was designated in 1994 by the President of the Polish Republic as the National Monument. In the area of the upper terrace, housing construction is implemented. On the lower terrace, numerous old river beds are found, situated along the edge of the upper terrace, together with a small valley of the Wilanówka River, flowing in the old river bed of Vistula River. Besides Vistula wetlands, located in the flood land area, one dense forest complex can be found in this location - Morysin Nature Reserve. Except for that, a mosaic of fields and meadows dominate the region.

In the city's environmental system natural lines and border zones of the southern regions of the left-bank Warsaw act like climate corridors, which maintain connection with suburban terrains and ecological corridors; they are important to animal and plant migration and to game sanctuaries. This area is an important

biological reservoir in the city's scale. These grounds are found to be very important to protection of water resources.

Natural strips and border lines presented natural thresholds for Warsaw's building development. Numerous royal and aristocratic residences were erected along the edge of Warsaw Escarpment (e.g. Ujazdów, Łazienki Królewskie, Arkadia, Gucin Gaj, Rozkosz, Natolin). This direction of urban activities was discontinued during the period of partitions of Poland (1772-1918) and during the communist era of the People's Republic of Poland. In the 1980s, it was planned the route of the A2 motorway was to pass through this area, while multi-family housing and public services buildings were introduced in the Western Wilanów region. And it was only in the 1990s that the Warsaw Area of Protected Landscape was designated in the city plans.

Environmental structure of this area helps creating of a linear recreational system connected with open terrains both within the city and in the suburbia zones. Such a system would facilitate a non-collision recreational traffic from within the city to the suburban belt. To fulfil the recreational needs of Warsaw's inhabitants, the city should respect environmental and protective functions of these areas (Wolski, P., 1996).

There are plans to create four greenways of the total length of 46 kilometres:

1. Ursynów Escarpment Park, 10 kilometres long,
2. Six Lake Park, 14 kilometres long,
3. Wilanówka Valley Park, 9 kilometres long,
4. Vistula Wetlands Park, 13 kilometres long.

Recreation centres with appropriate infrastructure should be set up in the parks.

A project was drawn up to implement the System in the area of the Ursynów Escarpment in Warsaw (Wolski P., 1996). The designed park is a landscaping of over 180 ha area. Its programme implements three basic objectives of greenways (Ahern, J., 1995), i.e. protection of environmentally valuable sites, linking of cultural heritage objects and recreation. The Emerald Necklace landscaping in Boston was the inspiration to this project (Zaitzevsky C., 1982).

The following diagnosis was made on the Ursynów Escarpment resources. The located at this site, palace-park complexes are in poor condition and require restoration (Gucin Gaj, Rozkosz). Construction of the Wilanów Town housing estate at the foreground of the Castle in Wilanów severed historic scenic connections; this disturbance is especially pronounced in the visual perception field of the Escarpment and of Natolin. In many places, the Ursynów Escarpment undergoes anthropogenic transformation. Embankments were built, together with illegal bike racing tracks and bike obstacle courses (biking tracks). Additionally, the Escarpment is endangered due to progressive development of negative geomorphologic processes.



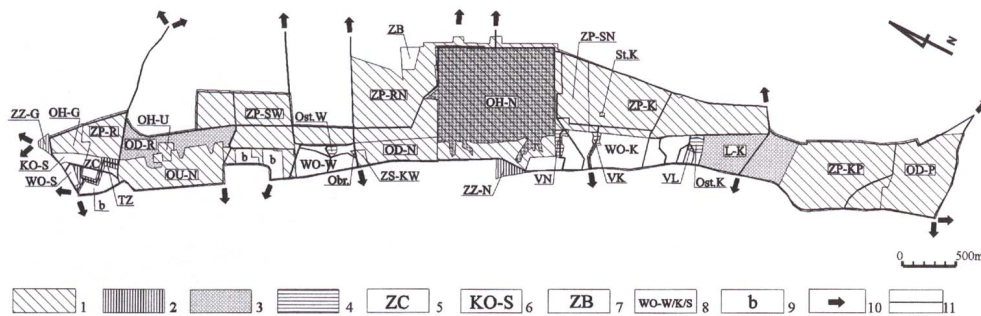
Figure 1. Ursynów Escarpment Linear Park in the system of linear parks of the Vistula Valley in southern left -bank Warsaw: A – Ursynów Escarpment Linear Park; B – belt of planned linear parks: B1 – Vistula Floodplain Forest Park; B2 – Wilanówka Valley

**Park; B3 – The Six Lake Park; C – recreational trails; D – Wilanów palace-park complex; E - Ursynów Escarpment; F – – underground stations**

Ursynów Escarpment is characterised by good “environmental quality”. The site’s diversity of environmental resources determines its attractiveness. The intensely expanding areas of housing development which are located in direct vicinity endanger the Escarpment, because new building sites are characterised by a small percentage of areas specifically assigned to recreation. Due to this the Escarpment becomes the main recreation site for Western Wilanów and Ursynów residents.

The current, passive protection of the Escarpment in the form of adding it to the Warsaw Area of Protected Landscape cannot be effective any longer. It is necessary to launch new protection measures, which would consist of landscape shaping and landscape maintenance (Wolski, P., 1999).

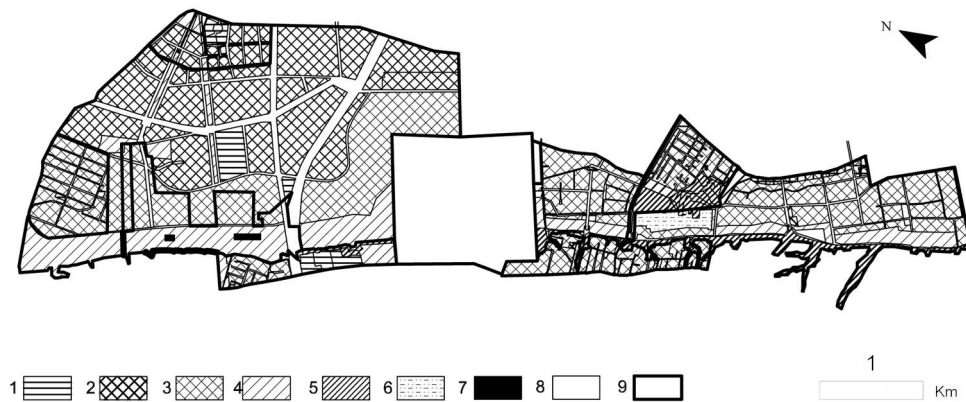
There is no document with the rank of a local law, which would cover the whole area of the Escarpment and at the same time would establish uniform rules of land development.



**Figure 2. Plan of Ursynów Escarpment Linear Park: 1 - parks, gardens and garden complexes: OH-N - Natolin Park, OH-G -Historical Garden Gucin-Gaj; OH-U - Historical Ursynów Garden Complex; ZP-KP - Culture and Recreation Park in Powsin; OU-N - Ursynow Palace; ZP-R - Park in Arbuzowa St.; ZP-SW - Służew-Wolica Park; ZP-RN - Northern Natolin Park; ZPP-SN -Southern Natolin Park; ZP-K - Kabaty Park; ZS-KW - WAU Riding Club; OD-N - Garden of Biotechnology, Genetics and Plant Breeding; OD-P - Academy of Science’s Botanical Garden; 2 - Lawns: ZZ-G - Northern lawn; TZ - Służew Hill lawn, ZZ-N -Natolin lawn; 3 - existing nature reserves: LK - Kabaty Forest; OH-N - Natolin Park; OD-R - Ursynów Escarpment reserve; 4 -planned ecological grounds and documentation points of non animated nature: VN - Natolin Park Gully; VK - Kabaty Park Main Gully, VL - Gully by Kabaty Forest; St.K. - Kabaty Pond; Ost.W. - Wolica monadlock; Ost.K. - Kabaty monadlock; Obr. - Upland Rim in Wolica; 5 - Sluzew cemetery; 6 - area around St. Catherine church; 7 - bord and supply base of Linear Park; 8 - area of former villages; 9 - building sites; 10 - direction of recreational thoroughfares links; 11 - recreational thoroughfares**

Ursynów Escarpment Protection Programme, drawn up in 1996, is a proposal to launch active protection in response to current administrative forms of protection, which have proved to be completely ineffective (Wolski, P., 1996, 1999). The project's aim is to add environmental, cultural and functional values to the designed site. The Programme assumes that the existing historic monuments (historic Gucin Gaj garden, garden at the Palace Settlement in Ursynów, Wilanów and Natolin), very well preserved picturesque sites situated at the bottom of the Ursynów Escarpment and the planned landscaping will be linked up, forming one greenway. Among local activities, protection of the Escarpment should be given the highest priority. There are suggestions to create an Ursynów Escarpment Landscape-Nature Protected Complex.

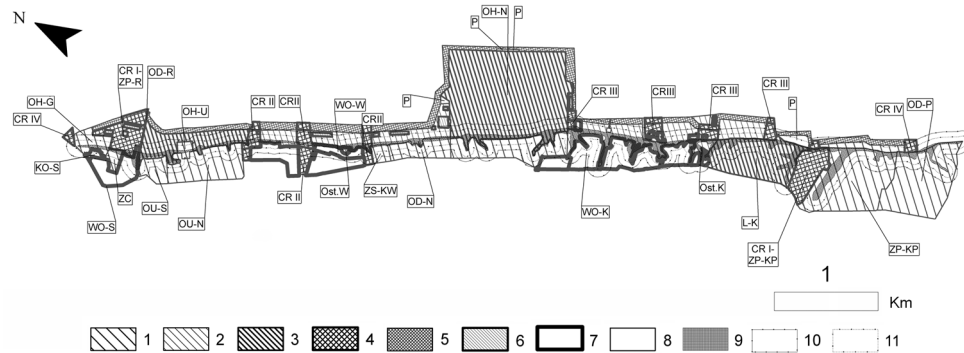
Objects making up the designed greenway will be linked by recreational routes. The main tracts will allow taking strolls in a carriage, or in case of the impaired to drive up to the site in a car; they will also allow for technical services in the park. In winter, some routes will be used for cross-country skiing. It is planned that food courts, toilets, rain shelters, wells with drinking water, parking spaces for bikes and stables for horse will be located at the Park's interchange points. Resting places, located in picturesque sites and close to environmental objects, encouraging contemplation and nature observation will represent a separate category of the Park's equipment (Wolski, P., et al., 1996, Wolski P., 1999).



**Figure 3. Planning decisions for the Ursynów Escarpment area: 1. facilities; 2 – high density housing area; 3 – low density housing area; 4 – recreational green areas; 5 – natural green areas; 6 – agricultural area; 7 – planned water reservoirs; 8 – communication's areas; 9 – master plan's borders**

Due to numerous negative planning decisions made in the last twelve years, it is impossible to implement a full range protection programme. Nevertheless, it is still possible to set up a greenway which will upkeep the continuity and restoration (at least a partly one) of historic axes and composition arrangements, through restoration of palace-park complexes; to compensate the lowering level of groundwater by means of sensible, comprehensive management of precipitation

waters in the areas neighbouring the Escarpment; to protect against negative geomorphologic processes within the Escarpment.



**Figure 4. Plan of Ursynów Escarpment Linear Park: 1 - parks, gardens and garden complexes: OH-N - Natolin Park, OH-G -historical Garden Gucin-Gaj; ZC - Służew cemetery; OH-U - historical Ursynów Garden Complex; ZP-KP - Culture and Recreation Park in Powsin; OU-N - Ursynów Palace; ZP-R - Park in Arbuzowa St.; ZS-KW - Riding Club; OD-N - Garden of Biotechnology, Genetics and Plant Breeding; OD-P - Academy of Science's Botanical Garden; 2 – extensive recreation areas; 3 - existing nature reserves: LK - Kabaty Forest; OH-N - Natolin Park; OD-R - Ursynów Escarpment reserve; 4 – recreational centers: CR I - recreational centers first category, CR II - recreational centers second category, CR III - recreational centers third category, CR IV - recreational centers fourth category; 5 – the main park’s by-pass; 6 – planned water reservoirs; ; 7 – housing areas, WO-K/W/S - area of former villages; KO-S - area around St. Catherine church; 8 - communication’s areas, P – parking places; 9 - Ursynów Escarpment, OstW. - Wolica monadlock; Ost.K. - Kabaty monadlock; 10 - Ursynów Escarpment’s direct protection zone; 11 - Ursynów Escarpment’s indirect protection zone**

Some new directives were drawn up for the Ursynów Escarpment local plan of spatial development, to adapt it to the present situation (Rędzińska, K. et. al., 2007). The project speaks of shaping the Park’s strip along the Escarpment, with the varied width between one hundred and two hundred metres, designed in the linear-interchange arrangement. The structure of this arrangement is shaped by the main by-pass of the Park and linked to it Recreation Centres, serviced by public communication and equipped with parking spaces. The main assumption concerns concentrating the park’s users in the areas of the planned recreation centres, which will offer a wide variety of recreation and sports services. Recreational centres programmes have been diversified and hierarchized. The primary role of remaining park areas will be for extensive recreation use. The Park’s area will be divided into two parts: the northern part, neighbouring with the intensely urbanised lands and the southern part leading to areas with low degree of urbanisation. In order to minimise the arduousness related with the planned clearway, it is proposed to route it in an excavation so that it will run in a tunnel throughout the whole park’s length. A hierarchized system of bicycle lanes was created, with a layout of interchange points

and interlined with the system of public transport. The rules for car parking were set. Bicycle transportation will be privileged, while car communication will be largely limited.

### Conclusion

Implementation of the greenway Project along the Ursynów Escarpment will allow to effectively protect the most valuable relicts of the natural landscape of Warsaw, will strengthen functioning of the environmental system of the city and will facilitate development of all recreation forms which are related to physical activity. In order to implement the project, it is necessary to draw up a spatial development plan for the whole region of the Ursynów Escarpment.

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