Valuation of the contemporary state of home gardens in the Kampinos National Park buffer zone

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Abstract: Valuation of the contemporary state of home gardens in the Kampinos National Park buffer zone. Gardens inspired by nature can reinforce both the natural and buffer functions of the Kampinos National Park (KNP) buffer zone. It is why this type of garden should be widely implemented in this area. An important question follows: how naturalistic are these gardens already? The aim of this article is to depict the results of the questionnaire-based research which gathered information about the contemporary state of home gardens within the buffer zone of the Kampinos National Park and to examine the preferences of the gardens’ owners. The analysis of the survey did not indicate any commonality of shaping the gardens based on a model of wild gardens using native species nor on a model of traditional rural gardens. Additionally, data was collected regarding natural gardens regardless of location using an Internet-based survey tool at the www.ankietka.pl website. After comparing both surveys, it was found that there were far less fruit plants and herbs, larger surfaces of lawns, fewer species of deciduous trees and bushes, and fewer aquatic elements in gardens in the KNP buffer zone. The owners within the buffer zone would twice more frequently remove all spontaneously appearing synanthropic plants on their lands, often used mineral fertilizers and chemical plant protection, and rarely used or rarely plan to introduce protected plants. In half of the visited gardens not even one native tree existed, which should form the basis of naturalistic assumptions.

Key words: garden inspired by nature, buffer zone, questionnaire.

INTRODUCTION

While planning surroundings and designing space around the house, we much too often consider only two goals – to ensure esthetic principles and to fulfill the users’ needs. However, garden foundation should fulfill the diversified landscape functions – protect landscape identity and improve natural functions: climatic, aquatic, biological.

The human designed space should play mostly a biocenotic role in accordance to decreasing natural territories of plants and animals under the urban pressure and agricultural area enlargement. The constant development of housing and its associated road infrastructure significantly degrade the impact of nature on the undeveloped areas. Habitat fragmentation, meaning dividing ecosystems into small, isolated areas, disturbs natural ecological communication by creating barriers for genetic exchange. In these isolated areas, the quantity of animals and plants are reduced, as well as its genetic variety. We can minimize these adverse changes by enriching the ecological structure of the settling entities, especially if they border upon regions of particular natural values, such as the Kampinos National Park.
Locality placed within the buffer zone, through the way of management, directly or indirectly influence the state of the Kampinos Woods native wildlife, because legally protected areas without proper management become isolated surfaces. Another problem in rural areas is the increasing disappearance of the traditional village home garden, which is a rich reservoir of old ornamental and usable plant varieties. Gardens inspired by nature are particularly recommended to owners of plots which are located within the attractive landscape areas. By making the decision to create a naturalistic garden, everyone can contribute to natural, cultural and visual environment protection work.

MATERIAL AND METHODS
The aim of this article is to depict the results of the questionnaire-based research which gathered information about the contemporary state of home gardens in the buffer zone of the Kampinos National Park and to examine the preferences of their owners. The research was conducted in a period from July to mid September 2009, including 28 respondents in 7 local villages. The villages chosen for the investigation were those that were considered the most typical for the area, i.e. as the most common for the Kampinos National Park buffer zone: rural character (the domination of farms over suburban buildings) and from 100 to 1000 inhabitants. The investigations were conducted in villages located in three types of areas which are most common in the park buffer zone: riparian forests, wet ground forests and coniferous forests. The information was collected in person, and the number of respondents depended on the number of people who were willing to answer the questions. Additionally, other data regarding natural gardens was collected regardless of the location, using the Internet questionnaire tool at the www.ankietka.pl website. There were 52 answers collected using this method. Within this subject none of the gardens were located in the national park buffer zone. 29% of houses were located in a city, 29% in a suburb, 26% in the country with majority of detached (unifamiliar) houses with only 16% estates in villages with farm housing. This part of the survey was, therefore, an examination of opinions from people who are interested in the idea of naturalistic gardens.

The respondents in both questionnaires were dominated by women, in both cases constituting about 80% of those tested. Additionally, most respondents were between 46–65 years old. From within the range 15–25 age group were 16 people, and in the eldest age group, over 65, there were 8 respondents. Of all the respondents, 61% had a Master’s level university education, (from the Internet questionnaire, 78% had a Master’s level university education).

College graduates constituted over one fourth of all questioned, technical/vaccational college graduates – 9% and only 3 respondents had an elementary education.

Deriving inspiration from the surrounding nature, from natural and semi-natural ecosystems situated in the closest neighborhood, is a fundamental condition to recognize if the garden is naturalistic. It is an important significance to have a properly prepared
choice of plants, which can contribute to intensified features of a native landscape (Wolski, 2006). Estate management by their residents and an interest in gardens following nature was an examined issue. Questions were prepared according to the basic rules of creating naturalistic gardens.

**RULES OF CREATING GARDENS FOLLOWING NATURE**

- Space management friendly for the settlement of native plant and animal species is typical for all naturalistic foundations. It helps the spontaneous growth of plants appropriate for a given habitat, which are not only ornamental but also create shelter and food for native animals, i.e. animals that share evolitional history in a specific area (Tallamy, 2007). To create conditions suitable for animals to inhabit in the garden, we must remember the dependencies between organisms in the food chain (Stawicka et al., 2007). Native plant species attract many precious and practical animal species.

Information collected from garden owners from the area surrounding the KNP shows that the involvement of native tree and shrub species is slight; only 17.8% of questioned garden owners could boast of a significant contribution of such plants, in 50% of gardens there were none. 42.8% of garden owners show a dominance of coniferous tree and shrub species, together with the presence of lawn occupying over half of the garden area (53.5% visited homesteads) and the universal use of alien units, which makes a picture far from natural, unfamiliar in the traditional face of a village.

Very often gardens located around houses are arranged in trite way: coniferous, frequently in a column shape and home turf (Dzięciołowska and Latkowska, 2008). Regularly, a key part of the garden is low clipped grass, with a densely planted column or cone shape coniferous on its edge (Cała and Orzechowska, 2007). The results of the polls entitled: Modern garden design in Poland also confirm this regularity. Despite the style of the garden, lawn showS up in 96.4% designed compositions (www.ankietka.pl/wyniki-badania/27198/wspolczesne-projektowanie-ogrodow-w-polsce). Plurality and attractiveness of modern varieties, in many cases originated from foreign gardens and their general accessibility decides of their common planting, not only in the public green areas but also in private gardens (Kołodziejska-Degórska and Kukier-Wyrwicka, 2008).

Much more interest in deciduous trees and shrubs was found among those questioned, because they did not appear in only 15.6% of gardens. For gardens in the USA it was found that people equally like native species often more than the exotic foliage plants (Nasauer, 1993).

- An important feature is to maintain biodiversity by creating diversified habitats and using habitat elements such as pathways facilitating animal migrations through the garden and supporting ecological communication is important for nature protection (channels in ground works, fences with wide openings, feeding trays, brut places) (Mizejewski, 2004; Źarska, 2005). It results from both polls that the most common feature was the use of wire fences (60.6% KNP, 90.2% for the rest of the examined). Areas of
difficult migration for animals due to the use of brickworks or fences with high substructure occurred in 64.6% of gardens in the area of the national park buffer zone and 32.2% of parcels from the internet poll.

Gardens are the mainstay for plant species under full or partial protection which are cultivated as ornamental plants. Of course, only those derived from the horticultural nursery and not from natural sites. Owners of the land within the KNP buffer zone questioned about introducing protected plants into their gardens, in 78.6% of cases did not express any interest. The internet poll respondents were twice as interested as compared to inhabitants of the buffer zone (45%), in growing plant units considered as protected. The lack of interest might be derived from a lack of knowledge about protected species, because it is highly probable that in most gardens such plants already exist. Such commonly known species like *Vinca minor*, *Hedera helix*, *Dianthus barbatus*, *Adonis vernalis*, *Digitalis purpurea* or *Colchicum autumnale* are ubiquitous.

- Cultivation of species derived from the synanthropic community should not be avoided, especially as species of the native origin, derived from natural and semi-natural habitats, have in their anthropogenic homes, i.e. gardens, their second site of occurrence (Wysocki and Sikorski, 2009). Naming those synanthropic plants “weeds” to a large extent expresses the garden owners’ attitude toward this group of plants. As much as 61% of the residents of the KNP buffer zone view synanthropes as enemies, while among internet respondents, opponents to spontaneously occurring plants comprise a group of 30%. Tolerance for “weeds” within the cultivated part of the garden characterizes 14% of village residents around the KNP and 41% of others. Over 25% of people in both groups expressed the will to leave all decorative, blooming synanthropes intact in their gardens.

- Cultivation crops of old varieties of fruit, vegetable and flower plants specific for a concrete region and perfectly harmonized with Mother Nature induce an increase in biological diversity (Allen and Allen, 2008). It happens by the preservation of locally cultured forms of cultivated plants, for which new varieties, more fertile, of scrub and short-living plants become a danger (Dziubiak, 2005). Other assets are their taste and health values and no need for the intense chemical protection (Kotlińska, 2003). They are more resistant to climatic conditions, e.g. regarding the sensitivity to freezing (Kołodziejska-Degórska and Kukierska-Wyrwicka, 2008). Moreover, unlike dwarf varieties, they remain a perfect place for nesting of many species of birds (Stawicka et al., 2007). Respondents from the area around the national park, definitely chose old varieties of trees (73.7%). Those interviewed on the Internet who preferred these varieties of trees and shrubs consisting only 30%, people undecided in their preferences for old varieties were three times as much (35%) then among those questioned in the KNP.

- Ways of management of the nature following gardens should be compliant to biological crop cultivation principles. Among them are the following:
reducing consumption of chemicals, abandon monoculture, using principles of good neighboring in relation to plant allelopathic influence and the use of organic fertilization, most of all compost (Metera, 1989; Kreuter, 2009). Respondents answered questions concerning the application of plant protection agents (pesticides): in the KNP buffer zone 57% of garden owners use them, mainly chemical agents. 63% of those interviewed on the Internet using plant protection agents, often used biological methods apart from chemical agents (Fig. 1).

Most respondents decided to use fertilization in their gardens: in the KNP buffer zone prevailed the usage of chemical fertilization (66.6%), whereas the internet poll results show that the most popular was the equal usage of chemical and organic fertilizers (48.6%) (Fig. 2).

- Care for improvement of water conditions is possible due to the proper choice of plants, along with trees, mulching the soil and using different water reservoirs. In gardens located in the KNP buffer zone only 14.2% respondents aimed for the presence of any water reservoirs in gardens, in half of the cases there were small water ponds. In 50% of those questioned by Internet, different water forms exist in gardens, among which small water ponds dominate, but there are also lakes, pools, brooks, and wall springs (Fig. 3).

Residents of the KNP buffer zone (53% respondents) accept the way of managing their gardens more, than Internet respondents. Only 17.6% ques-

![FIGURE 1. The use of different crop protection systems in gardens in the buffer zone of Kampinos National Park (KNP) and outside – the Internet (INTERNET)](image_url)
FIGURE 2. The use of different types of fertilizers in gardens in the buffer zone of Kampinos National Park (KNP) and outside – the Internet (INTERNET).

FIGURE 3. The use of reservoirs in the gardens in the buffer zone of Kampinos National Park (KNP) and outside – the Internet (INTERNET).
tioned among them were satisfied with their gardens. They point out different defects; the first place takes the insufficient attention (KNP 14.2% and others 9.8%). Internet respondents indicated unsatisfactory area (7.8%), lack of pond (7.8%). Questioned village residents of the KNP buffer zone complained about too many unwanted animals chicken (7.1%), voles (7.1%), snails (7.1%).

**CONCLUSIONS**

The analysis of the survey did not indicate any common features of shaping the gardens based on a model of wild gardens using native species nor on a model of traditional rural gardens. After comparing both surveys, it was found that there are much less fruit plants and herbs, larger surfaces of lawns, fewer species of deciduous trees and bushes and fewer aquatic elements in gardens in the KNP buffer zone. Twice more frequently their owners remove all spontaneously appearing synanthropic plants, often use mineral fertilizers and chemical plant protection agents, and less use or plan to introduce protected plants. In half of the visited gardens not even one native tree appeared, although they should form the basis of naturalistic assumptions.

The Internet respondents represented views on the necessity of planting different commercial plants in the gardens to create flower-beds and also to use protected plants, to tolerate synanthropic plants and to reduce chemicals.

With the disappearance of garden diversity through their unification, the popularization of the idea of nature-gardens in the areas surrounding Kampinos National Park and taking action to create a “trend” for objects of this type of landscape architecture is necessary. The milestone should be the educational action carried out both in schools and in mass media and actions promoting this type of garden management, for example by organizing competitions in the adaptation of space around your home. Use of species well suited to local conditions and certain types of fertilizers and plant protection should be promoted. Gardens modeled on wildlife are modest and ordered, contain plants requiring the lowest physical effort with their cultivation. They do not have excessively rich colours and diversity typical for garden collections. It simultaneously meets the needs of the people: to create original living spaces and at the same time imitate – Nature in this case.

**REFERENCES**


WOLSKI P., 2006: Krajobrazowe funkcje szańców, czyli takie, jakich w otulinie Kampinoskiego Parku Narodowego. Celem pracy jest przedstawienie badań ankietowych, które w celu popularyzacji idei ogrodów przydomowych w otulinie KPN i opinii ich właścicieli na temat ogrodów inspirowanych naturą. Badanie ankietowe przeprowadzane zostało w ramach badań terenowych w okresie od lipca do połowy września 2009 roku na liczbie 28 respondentów w 6 miejscowościach. Wybrane zostały miejscowości typowe dla obszaru ośrodka, czyli takie, jakich w otulinie Kampinoskiego Parku Narodowego jest najwięcej: o wiejskim charakterze (z przewagą zabudowy zagrodowej nad podmiejską) oraz o liczbie mieszkańców od stu do tysiąca. Informacje były zbierane osobiście, a liczba respondentów uzupełniona od liczby chętnych do udzielania odpowiedzi na pytania. Dodatkowo zostały zgromadzone dane na temat ogrodów wzorowanych na naturze, niezależnie od ich usytuowania, za pomocą e-mail: joannakaras1@gmail.com, e-mail: joannakaras1@gmail.com

**Streszczenie:** Ocena zagospodarowania ogrodów przydomowych w otulinie Kampinoskiego Parku Narodowego. Celem pracy jest przedstawienie badań ankietowych, dzięki którym zostały zebrane informacje dotyczące ogrodów przydomowych w otulinie KPN i opinii ich właścicieli na temat ogrodów inspirowanych naturalnymi funkcjami. Badanie ankietowe przeprowadzane zostało w ramach badań terenowych w okresie od lipca do połowy września 2009 roku na liczbie 28 respondentów w 6 miejscowościach. Wybrane zostały miejscowości typowe dla obszaru ośrodka, czyli takie, jakich w otulinie Kampinoskiego Parku Narodowego jest najwięcej: o wiejskim charakterze (z przewagą zabudowy zagrodowej nad podmiejską) oraz o liczbie mieszkańców od stu do tysiąca. Informacje były zbierane osobiście, a liczba respondentów uzupełniona od liczby chętnych do udzielania odpowiedzi na pytania. Dodatkowo zostały zgromadzone dane na temat ogrodów wzorowanych na naturze, niezależnie od ich usytuowania, za pomocą e-mail: joannakaras1@gmail.com, e-mail: joannakaras1@gmail.com

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