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BÁLINT KRISZTINA

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Bálint Krisztina

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The Doctoral School's

name: Landscape Architecture and Landscape Ecology

field: agricultural engineering

head: Dr. Bozó László
professor, DSc, MHAS
Hungarian University of Agriculture and Life
Sciences
Institute of Environmental Sciences
Department of Water Management and Climate
Adaptation

supervisor: Báthoryné Dr. Nagy Ildikó Réka
associate Professor, PhD
Hungarian University of Agriculture and Life
Sciences
Institute of Landscape Architecture, Urban
Planning and Garden Art
Department of Urban Planning and Urban Green
Infrastructure

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Approval of the head of Doctoral
School

Approval of the Supervisor

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1. BACKGROUND AND OBJECTIVES OF THE RESEARCH

In recent decades, the number of garden restorations in Hungary has increased significantly, owing to the domestic development of landscape architecture as a discipline and grants provided by the European Union. Within the framework of the '*Conservation and Restoration of Botanical Collections and Protected Historic Gardens*' funding scheme, part of the EU's Environment and Energy Operational Programme, more than 20 gardens have been restored. Furthermore, the National Castle Programme involves an additional 18 sites, where the programme includes at least partial garden restoration as part of its landscaping components. The relevance of this research is underscored not only by personal interest but also by the maintenance and operational challenges facing Hungarian heritage conservation. A shifting trend is observable in green space management in general, both in domestic and international practice. Securing and rationally allocating resources for management poses a growing challenge for site managers. As a solution, maintenance technologies focused on sustainability have also emerged in Hungary, such as nature-conscious techniques for lawn management, urban forestry for woody stock, and so-called "biodiverse" or "self-sustaining" ornamental plantings. At an international level, these solutions possess a more extensive research and practical background in the management of both public and historic gardens, and the potential for adapting these experiences to the Hungarian context is significant.

The primary objective of my work was to develop a research methodology for **identifying applicable landscape architecture methods for the value-preserving and sustainable management of landscape gardens**. To achieve this, further objectives were to theoretically explore the

context of landscape garden development and interpret the causal relationships of their operation, providing a basis for describing the methods historically used in their management. It was also essential to review the fundamental domestic and international literature on management and maintenance, identify potential alternative methods, and thereby establish the knowledge base upon which contemporary management can be implemented.

2. MATERIALS AND METHODS

The first stage of the methodology is a literature review of various related fields, divided into two main sections as illustrated in Figure 1. The first is a theoretical section examining the conceptual foundations, which explores the ideological basis and conceptual frameworks of landscape gardens and sustainability. The second is a practice-oriented theoretical section, which defines the context of management implementation and documents the applied and potentially applicable methods and technologies. The overall synthesis of these two fields enabled the definition of value-preserving and sustainable management, the establishment of scientific results, and the development of the research methodology. Based on this synthesis, it was possible to identify the existing knowledge base to build upon, as well as to determine which questions could be best answered through the collection and analysis of primary data, thereby responding most effectively to the research problem.

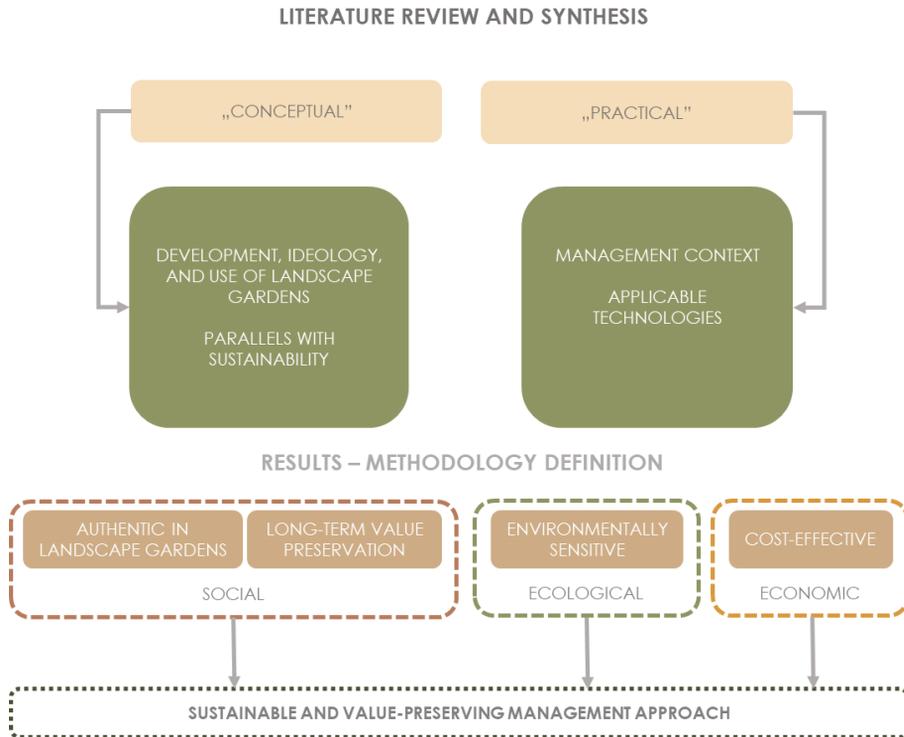


Figure 1.: Methodology I.

To achieve these objectives, I chose to conduct case studies. This investigation aimed to demonstrate the available management options and the potential changes resulting from the application of different technologies. Based on the literature review and the narrowing of the research scope, the subject of the investigation is the maintenance of the historically valuable spatial structure of landscape-style parks located in the territory of historical Hungary. The criteria for site selection were as follows:

- Potential for the application of stewardship-based management methods.
- Availability of baseline data that could be obtained within a realistic framework.

- Sufficient local knowledge to bridge the gap between the necessary planning and research in the absence of unified management plans.

The measured and organized data were primarily analysed using descriptive statistical methods, following the structure shown in Figure 2. I selected three case study sites: the park of the Andrassy Castle in Betlér, the Erdódy Castle in Doba, and the Festetics Castle in Dég. At these sites, I examined the distribution of green spaces by type, their composition according to management requirements, and the proportion of areas with differing needs. Based on this analysis, I identified the areas suitable for management using stewardship-oriented, nature-conscious maintenance methods.

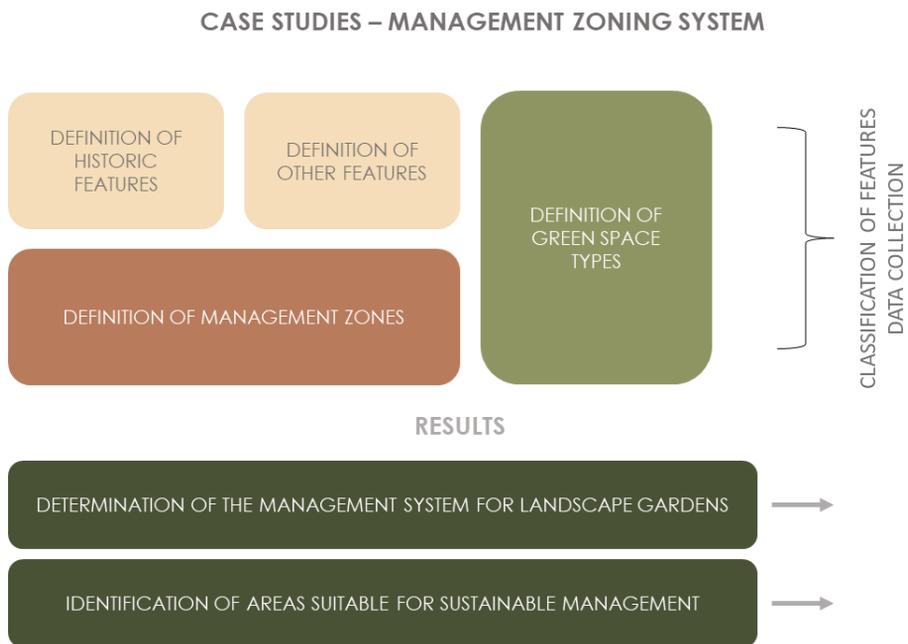


Figure 2.: Methodology II.

Building on this analysis, I conducted a comparative study, which, due to the broad nature of the topic, I narrowed to the issue of grassland management. As there is currently no literature addressing the application of nature-conscious and stewardship-based technologies as part of green space management under Hungarian climatic conditions, I supplemented the research for the comparative analysis with interviews on this subject. The interviewees were agricultural engineering practitioners with both scientific backgrounds and practical experience (2 persons). The purpose of the interviews was to explore the practical feasibility of grazing as a grassland management model in landscape gardens. The guiding questions covered applicable animal species, grazing methods, and technological details.

Based on the interview results and the findings of the literature review, I prepared the comparative analysis. Given the complexity of grassland management, this analysis was **based on the removal and utilization of the produced biomass**, as shown in Figure 3. For hay meadow use, the comparison included mowing, the associated collection of cuttings, and the usability of the produced hay. For meadow and pasture use, I accounted for the care of the animals and supplementary mowing. I conducted the comparison based on two aspects: firstly, in terms of labor hours, considering mechanical mowing, collection of cuttings, daily care of the animals, and their movement. Secondly, on a cost-value basis, where, according to data from the Hungarian Central Statistical Office (HCSO), I calculated the cost of unskilled and skilled labor hours, the estimated fuel consumption of the lawn tractor, the value of the produced hay, the provision of winter fodder, and the estimated value of livestock based on their weight.

COMPARATIVE ANALYSIS OF TECHNOLOGIES

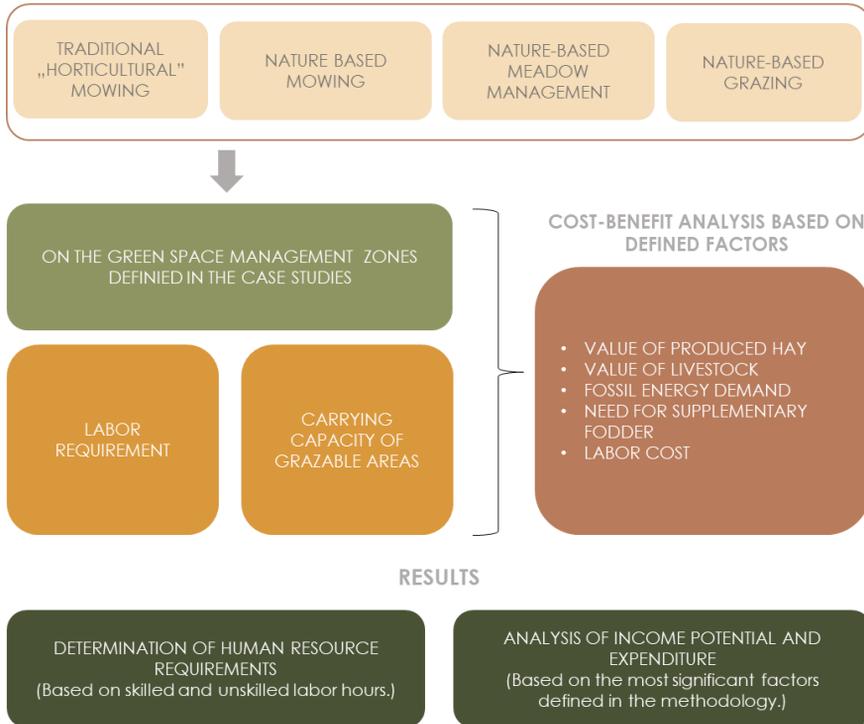


Figure 3.: Methodology III.

3. CONCLUSIONS AND RECOMMENDATIONS

The management of English-style landscape gardens, which constitute a significant proportion of Hungary's historic garden portfolio, is essential for the long-term conservation of existing and restored values. To this end, the application of a sustainable approach is advisable. The origins of these gardens can be traced back to medieval parks, where the practices of game, forest, and agricultural management appeared within parks that also functioned as representative status symbols. Their amalgamation with gardens surrounding residences, combined with a paradigm shift in English garden culture, resulted in landscape gardens that presented aesthetics embedded in naturalness in a profitable manner. The fundamental principles of the English landscape garden movement are closely aligned with the three pillars of sustainability—the simultaneous implementation of ecological, economic, and social aspects.

In the Hungarian context, the medieval parks that are the origin of landscape gardens can be paralleled with Hungarian “vadaskertek”. As elements known worldwide, their fundamental purpose in early Hungarian examples was also game management, but their more significant proliferation for recreational and representative purposes occurred later, during the Baroque era. Consequently, their connection to landscape gardens lacking Baroque precedents is currently unknown. Current studies do not separately address the characteristic “parkland” character of English landscape gardens that appears within them. As a domestic equivalent to the “parkland” character, wooded pastures, pasture-woodlands, and afforested pastures can be examined; however, these are interpreted as more organically developing areas operating primarily within a forestry framework. During the research,

no substantive parallel could be identified between these types and the English "parkland." For a deeper understanding of the topic, the works of Rapaics, Zádor, and Csöre are noteworthy; however, the focus of their scholarship was not on the development of Hungarian landscape gardens. Therefore, a recommendation is made to conduct research that comprehensively examines the development and use of landscape gardens in Hungary.

Despite their different developmental histories, Hungarian landscape gardens are ideologically clearly aligned with their English counterparts. The examples of Petri and Nebbien corroborate this: creating a flourishing, functional landscape—by harnessing the potential of the estate—was a fundamental principle in the design of Hungarian landscape gardens as well. This is well illustrated by Nebbien's competition entry for the City Park, in which he described the issue of the park's operation as being of central importance:

"Its maintenance should not require higher costs than the yield it itself generates, because those gardens that do not meet this requirement will become neglected and deteriorate."

The fundamental point of departure for this research is the changing role of our domestic gardens, particularly the fragmentation that occurred in the post-1945 period, the disappearance of the manorial and thus the maintenance framework, and the loss of clear garden boundaries and functions. Following these processes, the exploration of garden heritage and the recognition, research, and restoration of historical values became a priority, which in turn necessarily raised the need for long-term, sustainable conservation.

The foundational literature concerning both the use of landscape gardens and 21st-century sustainability confirms that their ideology is closely aligned with

the concept of sustainability. In addition to their social objectives—which once primarily involved recreation but are now supplemented by historical value—an ecological and economic perspective has also emerged. Accordingly, their value-preserving and sustainable management can be interpreted through the three pillars of sustainability. Therefore, it can be defined today **as a form of management that aims to preserve the values of cultural and natural heritage through a comprehensive approach, in which the long-term sustainability of the sites is ensured by balancing ecological, economic, and social aspects.**

In the examination of the "practical" domain following the theoretical conclusions, the scientifically substantiated domestic frameworks for green space management are relatively limited; they focus primarily on operational and maintenance technologies and the organizational tasks required for their implementation. A comprehensive presentation of public space management systems, strategy development, and specialized management principles for historic gardens is available in its entirety primarily in English- and German-speaking contexts. The German "Parkpflgewerk" can be interpreted as a multi-stage process in which historical research, the lessons of developmental history, an assessment of the current state, and contemporary use shaped by social engagement collectively form the basis for long-term maintenance and restoration objectives. The maintenance plan is ultimately prepared along these guidelines as the final chapter of the process. The English "Conservation Management Plan" follows similar principles but operates with an interdisciplinary approach: it defines conservation and maintenance tasks based on complex research involving various disciplines, and it also specifically addresses funding issues. In the Hungarian context, the "historic garden documentation" (kerttörténeti tudományos dokumentáció) and the

"maintenance plan" (fenntartási terv) can be considered equivalents to these international methods. **However, these two are not yet organically linked. A further significant difference is that historic garden documentation in Hungary—in contrast to English practice—does not require the joint involvement of multiple disciplines and also lacks the focus on contemporary use and social consultation characteristic of the German model. In Hungarian practice, the "maintenance plan" is typically not considered a fixed, uniform concept.** It is generally confined to a technological description and lacks elements of long-term strategic planning and the consideration of funding options. The practical implementation of value-preserving and sustainable management is highly dependent on a site's specific attributes and challenges. Accordingly, **it would be justified to adapt international models within a unified system, involving multiple disciplines, social consultation, and the definition of long-, medium-, and short-term strategies for management and maintenance tasks.** In this way, the 'Conservation Management Plan' and 'Parkpflögewerk' methods could be integrated into the domestic context. By becoming an integral part of the Hungarian legal system and practice, they would contribute to the development of the gardens. The methodology for nature conservation management plans, as established in legislation, could serve as a guideline for this process.

Following the identification of possibilities, I determined the applicability of value-preserving and sustainable management: specifically, what to manage and how. According to domestic experience, the greatest challenges after the spatial restoration of our English-style gardens are the preservation of the expanded grassland areas and the suppression of ecological succession. Consequently, it was justified to primarily investigate

management alternatives for grasslands and to identify areas suitable for forest management. Management options can be examined along two main approaches: traditional ornamental horticultural maintenance and the application of nature-conscious technologies.

For grasslands, the former is a well-known method in Hungarian literature. The nature-conscious approach, however, can be interpreted in two ways. Firstly, as **nature-conscious mowing**, achievable with currently available tools. The development of such practices in parks has been internationally driven by the challenges of urban green space maintenance. An outstanding example in Hungary is the practice of the 'Wildflower Veszprém' R&D project. The second nature-conscious approach involves **integrating a grassland stewardship perspective**, where the area is interpreted and utilized as a semi-natural hay meadow, meadow, or pasture. Regarding forests, the domestic green space management literature provides no description; thus, it becomes necessary to delineate areas where close-to-nature forestry can be applied. The comparison of specific methods—whether mowing frequency, grazing period, or rotation period—should be based on domestic research to account for climatic factors. Based on the review of literature and practices, a relevant research direction is the integration of sustainable tools into the management of domestic landscape gardens, with special attention to harmonizing stewardship (grassland, forest, or other agricultural land) and close-to-nature perspectives. The methods of value-preserving and sustainable management can be realized along the three pillars of sustainability: the application of nature-conscious ("ecological") and economically-oriented ("economic") methods can only occur on surfaces where it does not harm historical values (e.g., parterres) or, conversely, serves

their conservation (e.g., a grassy spatial structure), thereby also strengthening social sustainability.

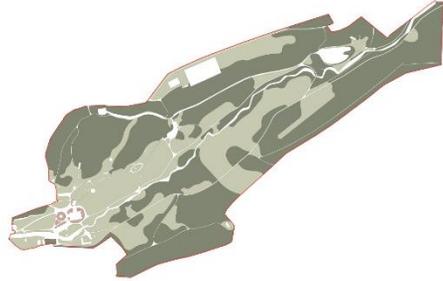
To compare the methods, I first investigated their applicability, for which the definition of a management system provided the basis. During the case study investigation, I determined the composition of management needs based on the built elements, following the principle of minimum intervention. An example of the management zone system established accordingly in the case study areas is shown in Figure 4. Overall, on average, more than 97% of the green spaces in the analyzed parks are suitable for the application of alternative, nature-conscious technologies, with the distribution detailed in Table 1.

DISTRIBUTION OF PARK GREEN SPACES BY MANAGEMENT ZONES							
SITE	AREA	SUPER-INTENSIVE		MEDIAN		COMPARABLE	
	The green spaces of the garden are delineated using the cadastral map of the land parcels and an orthophoto.	Highly Representative Area: typically the pleasure ground located in the immediate surroundings of the main building (e.g., manor house, former residence, small chateau).		Area Developed for Use: Any area made accessible for a specific function. These surfaces are designated for the park's recreational, secondary representative, ancillary tourist, management and maintenance, or other purposes.		Green spaces amenable to alternative, non-horticultural management.	
Betlér	500 104 m ²	1 923 m ²	0,4 %	25 636 m ²	5,1 %	472 545 m ²	94,5 %
Dég	2 700 090 m ²	1 114 m ²	0,0 %	14 971 m ²	0,6 %	2 684 005 m ²	99,4 %
Doba	830 563 m ²	2 389 m ²	0,3 %	20 125 m ²	2,4 %	808 049 m ²	97,3 %
<i>Average</i>	<i>1 343 586 m²</i>	<i>1 809 m²</i>	<i>0,2 %</i>	<i>20 244 m²</i>	<i>2,7 %</i>	<i>1 321 533 m²</i>	<i>97,1 %</i>

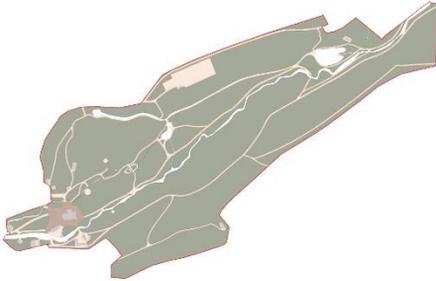
Table 1.: Distribution of Green Spaces by Management Zones



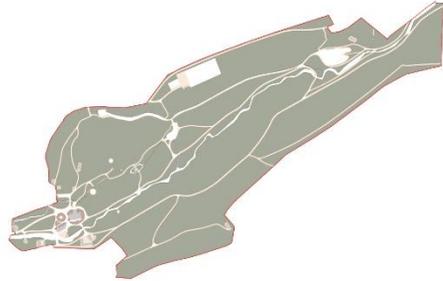
Layer 1: The park's structure and elements



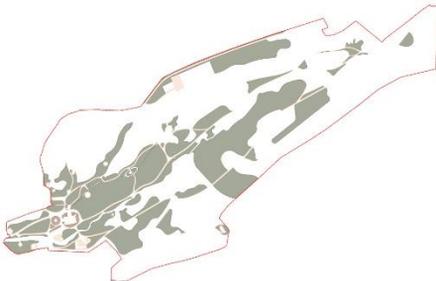
Layer 2: Green area categories as defined by the methodology



Layer 3: Management zoning of the entire area, as defined by Appendix 2



Layer 4: Management zoning of green areas



Layer 5: Management zoning of grasslands and parklands



Layer 6: Management zoning of the forest stand

Figure 4.: Management zones: The Case of the Andrassy Castle Park in Betlér

The results of the subsequent comparative analysis support the hypothesis that nature-conscious stewardship activities, when integrated with the goal of value preservation, are more favorable in terms of both labor input and estimated costs, as detailed in Figure 5.

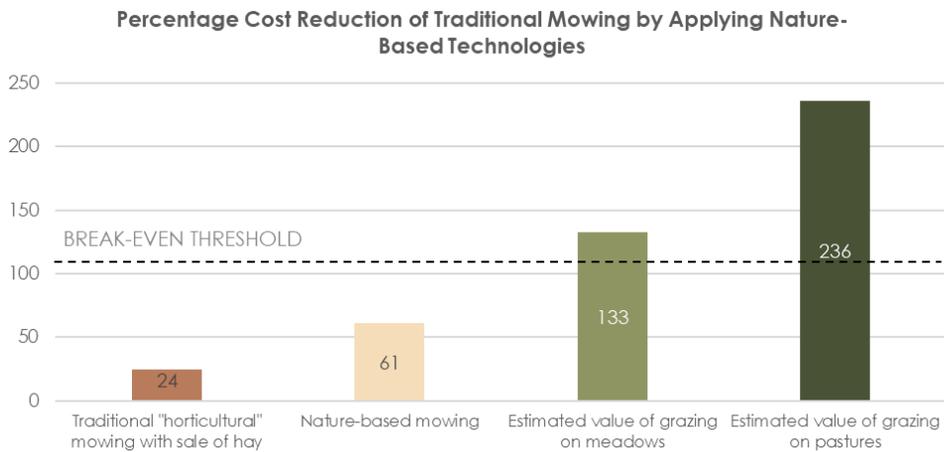


Figure 5.: Reduction of Costs in Traditional Horticultural Management by Type of Technology Applied

As a concluding recommendation, **I propose the practical testing of these technological shifts.** Although the data presented in this dissertation show highly favorable results, numerous influencing factors exist beyond the parameters examined. These include the feasibility of establishing partnerships with land managers, the issue of machinery, veterinary interventions, and details of transport and work organization. Such factors can be effectively explored during technological transitions implemented with the involvement of the related discipline of grassland management.

4. NEW SCIENTIFIC RESULTS

T1 The value-preserving management of landscape gardens, extending beyond the provisions of the Florence Charter, requires a sustainable management model achieved through the integrated application of public interest, historically-grounded economic activity, and nature conservation management methods. The literature highlights a key shortcoming of the Florence Charter regarding the conservation of historic gardens: it does not adequately address the challenges of sustainability. To resolve this deficiency, the sustainable and value-preserving management model formulated in this research integrates the establishment of an economic basis with a response to the challenges of climate change, thereby encompassing the conservation and enhancement of habitat value.

T2 The developmental history of Hungarian landscape gardens fundamentally differs from the English model: since the “vadaskert”, the Hungarian counterpart to the ‘park’ developed not as a precedent to the landscape garden but in parallel with the Baroque garden, no organic connection between the two can be demonstrated at the level of this research. Furthermore, a connection between wooded pastures with a ‘parkland’ character and landscape gardens cannot be substantiated based on the research. To understand original modes of use and authentic forms of management, the research compares the developmental history model of the English landscape garden with conditions in Hungary. In England, landscape gardens emerged from the union of the "park" (developed from the medieval parks) and the "garden" (as an ornamental garden), a process driven by the changing economic role of game parks. Initially, game parks (as facilities known worldwide) served game and agricultural

management purposes; however, due to technological advancements and social changes, they became costly status symbols. Their renewal and conservation were achieved through their integration into the landscape garden. In contrast, this pattern does not appear in the development of Hungarian gardens. According to available research, the establishment of Hungarian “vadaskert” occurred in temporal parallel with Baroque gardens; thus, the sequential development characteristic of the English model did not take place. The primary difference lies in the sequence of functions: in Hungary, they were created in a more developed agrarian context, and their primary function was representation. Economic utilization later assumed a secondary role, driven by the pressure of maintenance costs. The research also examines the "parkland" character as a potential parallel. In morphological terms, the "parkland" character of English game parks and landscape gardens is embodied by Hungarian wooded pastures. Based on the research, however, these appear to be elements independent of the history of garden art, as their connection to either game parks or landscape gardens cannot be demonstrated.

T3. Based on an examination of the developmental and management history of landscape gardens, it can be established that the functioning of this garden type corresponded with the principles of 21st-century sustainability: they fulfilled a complex social role, economic factors were integral to their use and management, and they possessed considerable ecological significance. The maintenance of these gardens was primarily driven by the social demand for recreation and aesthetics. While their historical ecological value is not known, important conclusions can be drawn from their mode of use. Based on the research, the stewardship clearly aimed to preserve the beauty of nature, and thus its methods can be equated with

modern nature conservation management. The ecological significance of their former use is further supported by the fact that the use of English-style gardens and the medieval parks that served as their precedents corresponds to the type of forest use highlighted in the Forest Principles adopted at the 1992 Earth Summit. In the summit's publications, this use is presented as having the greatest potential for sustainable development.

T4. The current Hungarian practice for conserving landscape gardens, which separates historic garden documentation from the maintenance plan, justifies the development of a unified heritage management plan methodology, for which international models and the nature conservation habitat management applied in Hungarian practice provide precedents. The practice of conserving landscape gardens in Hungary is characterized by a fundamental duality: the historic garden documentation and the maintenance plan are two separate, methodologically independent tools. As a consequence, the values identified during scientific research and the resulting expert recommendations are not incorporated into maintenance practice, causing the theory and practice of conservation to become detached. This phenomenon is further complicated by the absence of a unified, established method for developing the organizational and financial framework needed to ensure the long-term, value-centered management of the gardens. This duality can be resolved from two main sources. Firstly, by adapting international models—such as the English 'Conservation Management Plan' and the German 'Parkpflegewerk'—which treat historical research and practical management as a single, integrated framework, taking into account the different strengths of the two tools, such as the interdisciplinarity and financial planning of the English method, and the German model's

requirement for social engagement. The second source is the adoption of elements from domestic nature conservation practice, which is a scientifically grounded, legally regulated field with strong traditions, and whose management principles show numerous parallels with those of landscape gardens. Both fields fundamentally face the same theoretical and practical challenge: the sustainable conservation of a specific, non-profitable value—be it natural or related to garden art—and the character of an assemblage. In terms of practice, numerous operational elements can be directly integrated. These include establishing a scientifically grounded management structure, developing financial models, considering aspects of public presentation, and the strategic planning and implementation of nature conservation management technologies. However, the fundamental difference lies in the nature of the value to be protected. In landscape gardens, nature conservation management and economic aspects are subordinate to historical and use value; their primary goal is to make the conservation of heritage sustainable. Accordingly, their application requires compromises between nature conservation, economic, and monument protection aspects. The international models provide guidance in developing these compromises.

T5. The literature used for the management of Hungarian historic gardens, which is based exclusively on a traditional horticultural approach, is insufficient to address the sustainability and heritage conservation challenges of the 21st century. Effective value preservation requires a new interdisciplinary framework that integrates the economic and nature conservation management principles already established in the international literature. The research identifies a fundamental contradiction between the domestic and international scholarly literature. The

Hungarian literature on green space maintenance and management focuses almost exclusively on a traditional, technology-centered horticultural approach. This approach interprets gardens on an intensive-extensive scale while systematically disregarding their ecological impacts and financial framework. In contrast, international practice—although funding issues are also underrepresented there—has already seen the emergence of a holistic approach to sustainability. This encompasses strategic planning, nature conservation requirements, and the selection of optimal technologies. The conceptual difference between the two systems necessitates the development of the domestic system. The solution lies in establishing an interdisciplinary framework that follows international trends, integrating the strengths of international models while also addressing their financial shortcomings.

T6 The management zones of a landscape garden are delineated by its current functions, historic and contemporary built structures, and their associated buffer zones; management intensity and maintenance technology are then aligned with these zones. The intensity of management, as well as the extent and design of the buffer zone, is always a function of the specific function and value, requiring a case-by-case assessment during the creation of the management plan. The research method seeks to address the dual challenge of historic garden maintenance: preserving historical value while shifting management towards sustainability. The basis of the methodology is the identification of management needs through the definition of a management zone system. The zone system is established in three steps. The first step is to identify key historical and functional garden elements. The second step is to delineate a functional buffer zone system around them, ensuring the preservation of these values and the

operation of contemporary functions. It is important to emphasize that the buffer zone is not static; its extent is determined by the specific use and requires a case-by-case assessment during the creation of the management plan. Its size depends on numerous factors, such as the value to be protected, the current function, and technological conditions. The third step is to assign management intensity based on the character of the delineated areas. Typically, the historic and functional core areas require higher management intensity, the surrounding buffer zones have a medium intensity, while the remaining, more distant areas become suitable for introducing alternative management methods that embody a sustainable and value-preserving approach. However, the typical distribution of management intensity can be modified for technological or strategic purposes, a good example being the use of a "biodiverse" perennial planting to evoke a parterre.

T7 From a management perspective, the green spaces of a landscape garden can be fundamentally divided into three main types: representative ornamental gardens, parklands, and woodlands. The applicable green space maintenance technology is determined based on these green space types and the given management zone. Explanation: A prerequisite for selecting the appropriate maintenance technology is an understanding of the fundamental character of the plant stock. Three main types can be distinguished: Areas of representative ornamental gardens, which traditionally require high management intensity, such as parterres, rose gardens, and other ornamental shrub, perennial, or annual plantings. Areas of parklands, which, in keeping with the 'parkland' character, predominantly require grassland management (it should be noted that the care of solitary or grouped, typically old trees also belongs to this category, a subject beyond the

scope of this research). Areas of woodlands, which typically appear as closed, three-tiered vegetation with relatively low management needs. The applicable technology is determined by the combination of the green space type and its assigned management zone. The site-specific fine-tuning of the resulting method is then to be detailed in the management plan.

T8 Two methods are applicable for managing representative surfaces: in the case of an authentic restoration, only traditional technologies are available, whereas for an evocation, nature conservation management alternatives may also be employed. Representative garden areas, such as formal plantings and parterres, constitute a negligible proportion of a garden's total area, yet their management needs impose a significant burden on operations due to their meticulous ornamental character. For the management of these surfaces, if an authentic restoration is being performed, only meticulous ornamental horticultural methods are permissible, as this was required by their original state. Thus, the nature conservation management and resource-optimizing principles of a value-preserving and sustainable approach must be subordinated to the preservation of the garden feature as an element of historical value. However, if the restoration does not extend to these representative areas, it is possible to temporarily apply reversible solutions that are also consistent with a nature conservation management and resource-optimizing approach, such as a "biodiverse" perennial planting.

T9 In the grassland management of landscape gardens, rotational sheep grazing can be considered an ideal solution because this form of stewardship is capable of reconciling habitat and heritage conservation objectives: on the one hand, it promotes the formation of species-rich grassland communities, and on the other, through the specific grazing

characteristics of sheep (e.g., maintaining a short sward, providing fertilization that requires no subsequent treatment, and consuming dicots), it ensures that the grassland areas fulfill their required aesthetic role within the gardens' historical spatial structure. Grazing is a grassland management method that fulfills the three fundamental requirements of value-preserving and sustainable management in landscape gardens: it simultaneously serves a heritage conservation function, a habitat conservation function, and ensures resource optimization. Sheep effectively serve the heritage conservation goal—the preservation of the gardens' historical spatial structure and aesthetic quality—through their specific grazing characteristics. They leave behind a uniform, short sward (3–5 cm high) that meets the visual expectations of landscape gardens. Furthermore, their natural droppings require no subsequent treatment, benefiting the area without disturbing its visual or functional aspects. From a habitat conservation perspective, the method has a twofold advantage. Firstly, the grazing habits of sheep allow for the maintenance of diverse grassland communities that are also rich in dicots. Secondly, the rotational nature of the grazing effectively prevents the risks of over- and undergrazing, thereby ensuring the long-term stability of the grassland community. Finally, the resource-optimizing effect of the method is also significant, which is substantiated by the consensus in the literature designating sheep grazing as a solution with one of the greatest potentials in both extensive organic farming and conservation-oriented habitat management. This also makes their application an ideal choice from an economic perspective.

T10. The results of the case study measurements confirm that the application of nature conservation management technologies holds significant potential in Hungarian landscape gardens, as a technological shift is feasible across the vast majority of their area without compromising the preservation of historical values. According to the research findings, the parks, on average, are suitable for a technological shift across 88.3% of their total area and 97.1% of their green spaces. This exceptionally high proportion confirms that nature conservation management is not merely an option limited to specific sub-areas, but rather the basis for a system-level strategy that can define the operation of the parks as a whole. The difference between the two values is accounted for by built elements and other structures; the 97.1% figure for the actually managed vegetation demonstrates that the spatial or physical barriers to a technological shift are negligible.

T11. In Hungarian landscape gardens, nature conservation management stewardship—including the various forms of grassland and forest management—plays a dual role: it both contributes to ecological and economic sustainability and reflects historical use and management. The theoretical basis for this dual role is rooted in the spatial structure of landscape gardens. The extensive grasslands and woodland patches, which constitute the gardens' spatial value, by their very ideology demand a management approach that is close-to-nature and integrates economic elements. Both international and domestic examples confirm that this technological shift is feasible; however, its success lies in interdisciplinary collaboration and adaptation to local conditions. Developing an effective model requires systematic collaboration among the disciplines of landscape architecture, forestry, and

grassland management. The system necessitates site-specific development and a monitoring system in every case. This process involves a deliberate search for a compromise between a nature conservation management approach and economic opportunities, always prioritizing the garden's historical and use values. Beyond its foundation in the literature, the research substantiates the resource-optimizing effect of nature conservation management stewardship methods through case study measurements. In terms of grassland management, the labor requirement is significantly reduced compared to traditional management: it falls to 50% with nature conservation mowing, to 49% with hay meadow cultivation, and to just 24% with grazing. The economic impact is even more significant: while the sale of hay and nature conservation mowing lead to considerable cost reductions (to 24% and 62% of traditional costs, respectively), in the case of hay meadow and pasture use, grassland management generates a net gain at the sites studied. Hay meadow cultivation generates a 33% value surplus over traditional costs, while pasture use generates a 136% surplus. Regarding forest management, the measurements showed that 94.1% of the parks' forest stands comply with the regulations of the Hungarian Forest Act and can therefore be included in conservation-oriented forest management. Consequently, these areas also represent significant economic potential.

5. RELATED PUBLICATIONS

BÁLINT, K. (2020): A gyömrői Teleki-kastély parkjának története a kezelés tükrében. 81-92. p. In: FODOR, M. és BODOR-PESTI, P. (Szerk.): *SZIEntific meeting for young researchers*. Budapest: Szent István Egyetem

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