

COLLECTING DATA ON NATURAL MONUMENTS – A PROPOSITION OF A RECORD SHEET FOR TREE MONUMENTS. PART 1

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ABSTRACT

The aim of the article is to present the Record Sheet of Animate Natural Monuments for trees, which would standardize collecting and presenting data on tree monuments. The study uses data from the Register of Natural Monuments of the Lower Silesian Voivodeship made available by the Regional Directorate for Environmental Protection (RDOŚ) in Wrocław, as well as from the existing municipal record sheets of nature monuments and the Central Register of Forms of Nature Protection (CRFOP) facilitated by the General Directorate for Environmental Protection. Based on the qualitative assessment and the range of data contained in the RDOŚ and CRFOP registries and record sheets, an original proposal for a natural monument record sheet was elaborated for both individual trees and groups. The proposed consistent range of data on natural monuments will enable the use of collected data in statistical surveys, comparative analyses, and the research on species. In addition, the quality of data collection will contribute to a proper protection of trees and their surroundings.

Keywords: nature protection, the register of natural monuments, natural resources, Central Register of Forms of Nature Protection (CRFOP)

INTRODUCTION

Natural monuments are one of the forms of legal protection of nature in Poland as set out in the Act of April 16, 2004, on Nature Conservation (Ustawa... 2004). By definition, the protection can be extended to “individual animate and inanimate natural objects or their aggregations of special environmental, scientific, cultural, historical or landscape value, and holding distinctive features”. The predominating group among natural monuments are trees, whose protection has a long tradition in Poland (Grzywacz and Pietrzak 2013). Not only particular natural values motivate establishing this form of protection, but historical,

aesthetic, scientific and social values, too (Siewniak 1988, Kasprzak 2005, 2011, Blicharska and Mikusiński 2014). Tree monuments are becoming a tourist attraction and play an important role in the process of ecological education of the local community, especially children and youth (Staniewska-Zątek 2007).

Usually, the problem of tree and shrubbery monuments’ protection is considered in terms of two fields: protection criteria and methods of monument management. In regard to the methodology of setting natural monuments, the main difficulty is the lack of unified criteria for the assessment and detailed instructions on how to perform the measurements. Another crucial problem comes down to omitting such aspects like the

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importance of a tree for the local community (Pietrzak-Zawadka 2015) or the proposed range of real protection – there is no consensus among the naturalists and foresters on the ways of protecting both the old, monument trees and trees weakened by infections, especially those caused by legally protected species of insects and fungi (Pietrzak and Zawadka 2009). The lack of complete information on the condition of these trees in Poland makes the process of effective management of natural monuments more difficult. The records of natural monuments, currently run by The General Directorate for Environmental Protection and The Central Register of Forms of Nature Protection are a step towards solving these problems, although they are based on information provided by the municipal councils only once, when a resolution on natural monuments passes (Ustawa... 2004). The present formal and legal conditions limit collecting and updating information on tree monuments, especially for arranging their active protection. There are also no explicit rules and standards for performing the description of their features in these records. The registries of nature protection kept in Poland as stated by the art. 113 par. 1 of the Nature Conservation Act should take into account complete and unified information on objects and areas under protection.

In order to improve the methodology of collecting data on valuable trees a *Record Sheet of Animate Natural Monuments* was proposed, with the detailed criteria of natural monument's evaluation and a description method avoiding substantive errors related to the range and quality of data obtained on the tree monuments.

MATERIALS AND METHODS

The study draws on data from the Register of Natural Monuments of the Lower Silesian Voivodeship provided by the Regional Directorate for Environmental Protection in Wrocław (RDOŚ) (<http://wroclaw.rdos.gov.pl/formy-ochrony-przyrody> – 1.11.2015) and from the Central Register of Forms of Nature Protection (CRFOP) overseen by the General Directorate for Environmental Protection (GDOŚ) (<http://crfop.gdos.gov.pl/CRFOP/> – 1.11.2015). The record sheets of natural monuments, available on the websites of municipal Public Information Bulletins and provided by

municipal environment protection reports, were used in the study, too. The obtained materials allowed presenting a substantive interpretation, an assessment of range and forms of record and type of data relating to the Register of Natural Monuments of the Lower Silesian Voivodeship. For illustrating the results, the following was compiled in a tabular form:

- a comparison of data with an interpretation of selected records from the RDOŚ registry,
- a list of selected natural monuments in landscape parks with reference to information contained in the RDOŚ registry, which was carried out by the information obtained from the Lower Silesian Association of Landscape Parks website (www.dzpk.pl – 1.06.2016).

When determining the form and range of a record sheet, such editing was assumed as a priority, so that it would enable further effective use and processing of acquired data. An analysis of frequency of elements appearing in the municipal natural monuments' record sheets was conducted for this purpose. The part concerning the determination of locations of natural monuments in detail was based on the guidelines of the following acts:

- The Act on the Environmental Protection of April 16 2004 (Journal of Laws of 2016, item 2134, as amended),
- The Act on the Protection of Monuments and the Care of Historical Monuments of July 23 2003 (Journal of Laws of 2014, item 1446, as amended).

The range of information in the sheet has been verified and evaluated as a part of “Natural Heritage”, a course in 2016 in landscape architecture at the Wrocław University of Environmental and Life Sciences. For verification the students were asked to fill in the sheets with data collected in field and studio research of a selected natural monument in Wrocław. Substantive consultations and the analysis of data presented in individual sheets allowed for its modifications, i.e. the extension of proposed description points (of the monument's vicinity) and the modification of the graphic structure.

The presented results are divided into three parts: the first relates to an interpretation of information included in RDOŚ and GDOŚ, the second part consists in comparison and interpretation of a range of information available in the sheets, whereas the third dis-

plays selected elements of the record sheet of animate natural monuments.

RESULTS AND DISCUSSION

Assessment of data quality in RDOŚ and GDOŚ registries

According to the Act on Nature Conservation, the extent of data collected on natural monuments in the RDOŚ registry is the same as for CRFOP, specified in the Regulation of the Minister of Environment of September 11, 2012, on the Central Register of Forms of Nature Protection (the Journal of Law of 2012, item 1041). The actual presentation of detailed information about the natural monument in CRFOP and the RDOŚ registries significantly differs from the requirements in the regulation – there is no specification of Latin (botanical) names of the species or record of natural value. Instead, a generic category of Description (CRFOP) or Description of a Natural Monument (RDOŚ) was created. Lack of arrangements as to the degree of detail and the components of this description in the regulation is the reason why any content can be put under this category (with RDOŚ registry providing more data). The descriptions of the same tree differ significantly

between the two registries. For example, in CRFOP the species was not defined, and the tree description settles with only such statements like “dry and broken branches”, while the RDOŚ registry describes the same tree more precisely: “Red oak (*Quercus rubra*). The tree is in a satisfactory health and phytosanitary condition despite the deadwood in the lower part of the crown, reaching even thick branches. Due to its location in the area of dense planting the tree crown is slightly deformed. However, neither defects nor decays in the trunk were noted”. The differences in two descriptions of the same object in the indicated registries are serious. In addition, the form and range of presented data significantly reduces their usefulness for the research on natural resources and limit the possibilities of carrying out comparative analyses. The advantage of CRFOP registry is a well-developed spatial information – each object is marked on an interactive map. The RDOŚ registry often lacks in geographic coordinates, while object descriptive forms are more complete and detailed than CRFOP. Nevertheless, it is the RDOŚ registry that contains a lot of inaccuracies and discrepancies in the presented data, as well as different degree of detail of information, what affects negatively their subsequent interpretations (see: Table 1).

Table 1. Examples of problems in interpretation of data from the RDOŚ registry

Problem	Example	Commentary
Incorrect use of definitions	Municipality: Lubin Locality: Lisiec European ash (<i>Fraxinus excelsior</i>) Location: Landscape Park „Lisiec”	The information does not clearly indicate if the definition of landscape park refers to protected area or historical park.
Incorrect or unclear taxon names	London platanetree figures under several Latin names <i>Platanus × acerifolia</i> <i>Platanus × hispanica</i> Mill <i>Platanus Acerifolia</i> <i>Platanus × hybrida</i> <i>Platanus × hispanica</i> ‘Acerifolia’	Lack of current species names, e.g. one of the species figures under several Latin names.
Inconsistent measurement record	Group of 2 trees – pedunculate oak (<i>Quercus robur</i>) 405, 410 Group of 4 trees – pedunculate oak (<i>Quercus robur</i>) 380–400	There are no unified forms of perimeter measurement records for tree groups, what impedes the data interpretation.

Table 1. cont.

Problem	Example	Commentary
Intricacy and incorrect information	Municipality: Przeworno Locality: Konary Group of 3 trees – London platanetree (<i>Platanus × hybrida</i>). Initially a group of five trees. At the base the trees share a common trunk, with a perimeter of 1120 cm, which above 1 m branches into five separate trunks. Two trees were cut.	The registry states that it's a group of trees. From the further information it follows that there is a single tree. Inconsistencies in information lead to data interpretation problems.
Insufficient information	Municipality: Bolesławiec Locality: Trzebień Pedunculate oak „Dęby Świętojańskie” In the northern part of the historical park (...)	Lack of information about the conservation of the historic park.

Own elaboration

It turns out that information on whether or not a natural monument can be found in a landscape park is occasional, and in the analysed RDOŚ registry a single case of such information was recorded (see: Table 2). Only in the case of yew (*Taxus baccata*) vegetating

in the Książański Landscape Park the information on its location was provided. However, such information was not included in descriptions of many other natural monuments in landscape parks of the Lower Silesian Association of Landscape Parks.

Table 2. List of exemplary natural monuments in landscape parks of Lower Silesia

No.	Nature monument	Locality	Municipality	Protected area
1*	<i>Taxus baccata</i> „Bolko”	Świebodzice	Świebodzice	Książański Landscape Park
2	<i>Fagus sylvatica</i> 'Atropunicea'	Okulice	Sobótka	Landscape Park „Dolina Bystrzycy”
3	<i>Quercus robur</i>	Lądek Zdrój	Lądek Zdrój	Śnieżnicki Landscape Park
4	<i>Thuja plicata</i>	Międzygórz	Bystrzyca	Śnieżnicki Landscape Park
5	<i>Pinus sylvestris</i> „Matka”	Wołów	Wołów	Landscape Park „Dolina Jezierzycy”
6	<i>Chamaecyparis nootkatensis</i>	Sobótka	Sobótka	Ślęzański Landscape Park
7	<i>Ginkgo biloba</i>	Sobótka	Sobótka	Ślęzański Landscape Park

* – information about the tree's location in the landscape park in the Lower Silesian register of natural monuments

Own elaboration based on RDOŚ registry and information on Lower Silesian Association of Landscape Parks website (www.dzpk.pl – 1.06.2016)

Comparison and interpretation of a range of record sheets of existing animate natural monuments

Natural monuments' record sheets often serve as attachments to particular resolutions that protect the tree – as a natural monument. A varied degree of detail can be found there (see: Fig. 1). Usually, the municipalities have only a list in a tabular form, which is available at Public Information Bulletins websites.

The basic information in the natural monuments' record sheets regards the species name and the tree trunk perimeter at the height of 130 cm, information on the tree crown diameter is much less common. Among some other reasons, taking the crown diameter criterion into account is important, because of the determination of root system protection zones during planned groundwork in the vicinity of a given tree. Information regarding threats to individual trees, arising from their location, for example near paved surface, is considered to be particularly useful. Nevertheless, only 14% of considered sheets contain this information. It may be controversial, however, to indicate the tree's age without a detailed dendrochronological analysis and a study of archive materials such as maps and old engravings. For example, the purple European beech (*Fagus sylvatica* f. *purpurea*) that grows in the city park in Syców has been estimated to have about 320 years. This information was verified due to the fact that the tree is an element of a historical park created in the first half of 19th century, i.e. its age can be estimated at 160 years. The sheet's content also does not provide any arguments for particular criteria of proposed tree protection. If such information is eventually included, it contains only general provisions deriving from the Act on Nature Conservation. As little as 27% of analysed sheets give any information concerning protection, nonetheless even the content of those is not always exhaustive. Including such information in the sheets may serve a valuable educational material. Detailed justification for undertaking protection was presented in the record sheets of the Lubin municipality in Lower Silesia. The trees' aesthetic values and the unique value coming from the tree's size (trunk's diameter) against other trees of the same species growing in the town were emphasized. Often, much more information can be learned from the description of the natural monument's loca-

tion, especially for the tree protection purposes. An example here is the natural monument in Czudec municipality, where "the monument description" refers to a thorough characterization of the location of trees growing next to the historic chapel of Our Lady of Częstochowa from the turn of 18th and 19th centuries. However, this information was not taken as an argument for the protection of trees. It was noticed that information precision on the location of the trees, including a description of the surroundings, varies significantly between all the sheets, making it difficult to compare them. Numerous errors were identified in the applied nomenclature, including expressions like "technical condition" or "the technical description of a tree" in reference to the perimeter, height, diameter of the tree's crown and the term "habitat" in reference to a clearing in a park. These records often deviate substantially from a correct interpretation. Moreover, the terms "diameter at breast height" and "trunk's perimeter" are regularly used alternately, though they are actually different parameters.

Presentation of selected elements of the author's record sheet of animate natural monuments

The sheet was made for both individual trees and groups, with the exception of forest plantings, like avenues and lanes (see: Fig. 2). The sheet has been divided into two parts. The first consists of information regarding the animate natural monument itself: a measurement of the trunk's perimeter, a diameter of the crown and a height of the tree, a determination of its natural, historical, social, landscape value and an assessment of phytosanitary condition in a descriptive way and with the Pacyniak and Smólski scale (1973). The second concerns a detailed characterization of the site, where a tree grows, with particular emphasis on its natural and historical value.

Information on the animate natural monument

In addition to a standard measurement of a trunk perimeter at a height of 130 cm, the crown's width and height, a measurement of a trunk perimeter for multi-stem forms that branch below 130 cm was introduced. When performing an additional measurement, it is necessary to enter the height of its execution. The column "notes on measurement" has been introduced – it facilitates the interpretation of perimeter data in case

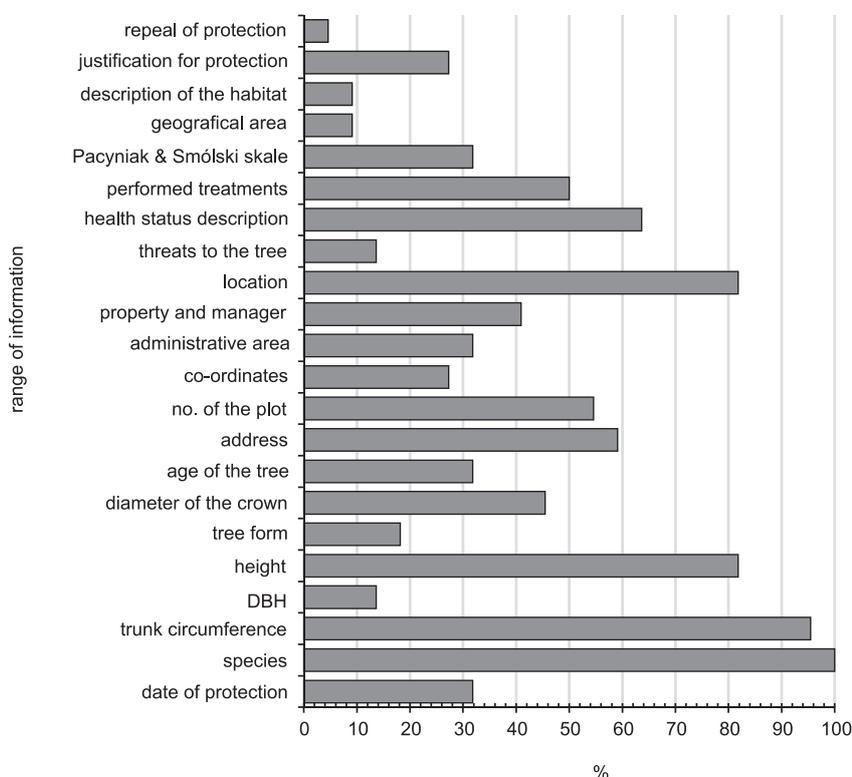


Fig. 1. Contribution of most important information in municipal records of natural monuments

of any difficulties with measurement, e.g. in the form of a growth on a trunk caused by infectious diseases or conglutination of bundled conductors, and even the growth of a tree on a slope.

The sheet covers, through descriptive characterization, individual features of a natural monument that derive from its natural, historical and social value (see: Table 3). Due to the presented element a tree can be treated as a natural monument. It should contain precise information based on natural and historical research or referring to a relevant literature of the subject. For this purpose, it is recommended to fill in three most important reasons. It should be noticed that the argumentation referring to the symbolism of trees, for example, met with local beliefs, or with the specific features of the region where the described natural monument is set.

The role of the monument in a landscape takes into account the aesthetic and compositional value of an individual or group of trees in relation to the other elements of space and natural environment. A descrip-

tive form gives you the opportunity to interpret its role with an appropriate professional nomenclature and including the surrounding features. Individual trees can function as a solitaire or dominant (Bińkowska and Szopińska 2013). There is no information about the landscape function in the analysed sheets, especially trees contributing to an aesthetic aspect of the historical parks' landscape.

Threats and recommendations concerning protection concern situations connected to investments and counteracting their negative effects, which later can be included in the local planning of spatial development. An example can be information on the occurrence of a threat that harms the root system during earthworks related to the maintenance or removal of the underground infrastructure failures that runs near the tree. These threats and recommendations should stem from a thorough analysis of the part of the sheet concerning the natural monument location.

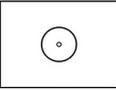
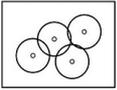
1. No.		2. TAXON (LATIN AND COMMON NAME)					
3. STATUS: LEGAL BASIS, THE YEAR OF ESTABLISHMENT			4. Location: overview map				
5. COMPOSITION ELEMENT		6. DECORATIVE FEATURES					
single	group						
							
7. TREE PARAMETERS							
perimeter at the height		notes on measurement	crown's diameter	tree's height			
130 cm ¹						
[cm]	[cm]		[m]	[m]			
8. NATURAL/HISTORICAL/SOCIAL VALUE			Source:				
			Address:				
			Coordinates:				
			Voivodeship:				
			Municipality:				
			Locality:				
9. ROLE IN LANDSCAPE			Plot no.:				
			Administrative area:				
			Type of property:				
10. DESCRIPTION OF TREE'S HEALTH CONDITION			The tree health condition scale by Pacyniak and Smólski (1973)				
			1	2	3	4	5
10.1. Sanitary condition of tree crown:			11. THREATS AND RECOMMENDATIONS CONCERNING TREE PROTECTION				
10.2. Sanitary condition of tree trunk:							
10.3. Sanitary condition of root system:							
12. LOCATION CHARACTERISTICS							
a. land cover class ²				12.4 Area's accessibility			
b. green area type				open-access			
12.1. Site with significant historical value		YES		NO			
Historical sites from before 1945 e.g. parks, squares, accompanying greenery				restricted access			
state of preservation				inaccessibility			
well-preserved	partly-preserved	not preserved		12.5 Site's function			
site under national monument conservation	YES		NO	historical			
form of national monument conservation (name, register number, etc.),				contemporary			
In setting of historical object included in the register of monuments ³		YES		NO			
12.2. Site with identified natural value		YES		NO			
12.3. Site under nature protection		YES		NO			
Form of nature protection (if the tree belongs to a protected area)							
			Prepared by				
¹ Measurement for the multi-stem trees should be taken directly before branching, the height of this measurement should be indicated ² Form Corine Land Cover, level 3 ³ Only if setting of historical object is not under monument conservation			Date and Signature				
Authors: Sobolewski, Sabura-Mielnik, Szopińska (2016) Wrocław University of Environmental and Life Sciences							

Fig. 2. Proposed record card of the nature monument – for single tree and group

Table 3. Examples of natural, historical and social values based on literature of the subject

Species	Justification for protection
Role in folklore, folk beliefs and local traditions	
<i>Quercus robur</i>	Oak is a valuable species because of its symbolism in pre-Christian times and economic application (Weber-Siwirska 2016)
<i>Taxus baccata</i>	More than 67% of the biggest and oldest yew trees in England, Scotland and Wales grow in churchyards (Moir et al. 2013). The presence of old yew in cemeteries has a symbolic dimension connected with death and also with yew's longevity (Weber-Siwirska 2016).
Characteristics of historic ornamental varieties	
<i>Fagus sylvatica</i> 'Asplenifolia'	A cultivar known already in 1804 in the United Kingdom (Seneta 1996). Five trees in Lower Silesia established as a natural monuments.
<i>Quercus robur</i> , 'Concordia'	Belgian cultivar received in 1843. Young leaves are intensely yellow, later green (McArdle and Santamour 1985). There are no trees listed in the register of Lower Silesia as a natural monument, although their presence in the territory of the voivodship.
<i>Quercus robur</i> 'Pectinata'	The cultivar listed already in 1864, at the Muscaviense Arboretum (McArdle and Santamour 1985). Single tree in Lower Silesia with a circumference of 279 cm is declared a natural monument in Jelenia Góra.
Relationship with objects and historical greenery	
<i>Tilia cordata</i> <i>Platanus × hispanica</i> 'Acerifolia'	There are 85 trees of monumental dimension in the historic park in Orłowo Murowany (Dąbski et al. 2016). Orłowski and Nowak (2007) showed that the highest number of trees qualified as nature monuments in the agricultural landscape of Wrocław grow in the manor parks (about 7 trees per 1 ha), main small-leaved lime and London plane.
Occurrence on natural stands	
<i>Sorbus intermedia</i>	In Poland, only three out of twenty-four Swedish rowan monumental trees grow in their natural stands (Bednorz and Ludian 2012).
<i>Ulmus</i> sp.	Decrease in the species population in the Sudety Nature and Forest Region (Filipak-Napierała et al. 2014). Kasprzak (2011) recommends protecting large elms regardless of health status, due to the generally rare occurrence of the species.
<i>Acer sempervierens</i>	In Burhaniye – Balikesir, Turkey natural monument is the westernmost natural stand of the Cretan maple (Efe et al. 2014).
Biological and biocenotic value	
<i>Quercus robur</i>	Oaks are associated with many species of insects, e.g. hermit beetle (<i>Osmoderma eremita</i>) protected species, characterized by low migration capacity. Over 80% of the habitats of this species in Lower Silesia are single trees (Kadej et al. 2014).
Aspects of tree uniqueness	
<i>Aesculus hippocastanum</i> 'Digitata'	The only historical specimen recorded in Poland in the South Park in Wrocław (Szopińska and Reda 1999). Currently the tree does not have the status of a tree monument.
<i>Acer sempervierens</i>	Tree form this species mainly occurs as a shrub. Tree specimens are considered as a unique (Efe et al. 2014).

Own elaboration

Information concerning the animate natural monument location

Most tree monuments grow in green areas (especially in historical gardens), in cemeteries, forests and rural landscapes (Kasprzak 2011). Collecting information on tree monuments related to a class of land cover provides valuable knowledge, but also allows its practical use in landscaping and biodiversity protection (Orłowski and Nowak 2007). A significant part of the location characteristics was performed due to the Act on Nature Conservation and the Act on the Protection of Monuments and the Care of Historical Monuments.

The range of basic information pertaining to given locations was improved by the **Corine Land Cover** class (there are 31 classes in Poland) (<http://clc.gios.gov.pl/> – 1.06.2016) and by **green areas classification** for urban spaces (eg. estate greenery, accompanying greenery, the greenery between road lanes).

Determination of the historical value of the area of the tree's location should be based on available archive materials, including cartographic and bibliographic. The analysis should comprehensively indicate or exclude historical conditioning that stems from humans activity. In the case of historical object of considerable value one of the following options should be selected:

- preserved foundations – premises or objects with historical functions and original greenery composition,
- partially preserved foundations – premises or objects, with preserved or partially preserved original greenery composition and lost historical function,
- unpreserved foundations – premises or objects of which presence is indicated only by individual planting and/or archive materials.

For areas of significant historical value, it should be also indicated whether they are protected and maintained in accordance with the Act of July 23, 2003, on the Protection of Monuments and the Care of Historical Monuments (Journal of Laws of 2014, item 1446, as amended).

The natural value of an area should be assessed on the basis of field studies or existing studies of a site. Furthermore, it is necessary to determine whether a tree grows within an area protected by the Act on Nature Conservation (Ustawa... 2004), by entering its form and proper name.

The accessibility of an object refers to the area, where a natural monument is situated. Three variants as to the ownership of the land were introduced in the sheet:

- open-access – for public lands,
- restricted access – intended for a particular group, including botanical and zoological gardens and kindergartens or school grounds,
- inaccessible – e.g. private lands.

The function of an object is a consequence of the terrain characteristics of the natural monument's location. The sheet is descriptive, narrowing to short statements, related to the use of the object according to its contemporary and historical functions. Such an example is given by green areas of old cemeteries, which after World War II began to disappear from the Lower Silesia (Chylińska 2007). Whereas in Szczecin, former cemeteries were transformed into parks and have a recreational function today (Pilarczyk 2009).

Detailed description of the surroundings should, among other aspects, comprise: the presence of overhead power lines in the vicinity of the tree's crown, the condition of facilities near a tree and communication routes, surface permeability within the range of a crown projection and other information that may have an impact on the health condition of a tree in the future.

SUMMARY

The publicly available registries: the Central Register of Forms of Nature Protection and the Register of Natural Monuments in the Lower Silesian Voivodeship, do not provide complete and consistent information about animate natural monuments. The range of collected data limits their usefulness for statistical research, comparative analysis, studies on the oldest and the most precious tree monuments which would create methods for their protection and management. Presented Record Sheet of Animate Natural Monuments for trees indicates standards for collecting data on this type of natural monuments, their value and recommended protection. The sheets allow collecting information on the parameters of the trees themselves and their value: historical, natural and landscape, as well as other features of significance not only for science, but also by using this knowledge in practice, improve

an appropriate protection of these objects and shape their surroundings. The applied format of the sheet is supposed to avoid substantive errors and systematize the object's description, enabling the use and comparison of data.

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POZYSKIWANIE DANYCH O POMNIKACH PRZYRODY – PROPOZYCJA KARTY EWIDENCYJNEJ DLA DRZEW POMNIKOWYCH. CZĘŚĆ 1

ABSTRAKT

Celem artykułu jest prezentacja Karty Ewidencji Pomnika Przyrody Ożywionej dla drzew, która pozwoliłaby na standaryzację pozyskiwania i prezentacji danych o drzewach pomnikowych. W opracowaniu wykorzystano dane uzyskane z rejestru pomników przyrody województwa dolnośląskiego udostępnione przez Regionalną Dyрекcję Ochrony Środowiska (RDOŚ) we Wrocławiu, istniejące dotąd gminne karty ewidencji pomników przyrody oraz dane z Centralnego Rejestru Form Ochrony Przyrody prowadzonego przez Generalnego Dyrektora Ochrony Środowiska (CRFOP). W oparciu o ocenę zakresu i jakości danych zawartych w rejestrach RDOŚ i CRFOP oraz gminnych kartach ewidencji opracowano autorską propozycję karty ewidencji pomnika przyrody przeznaczoną dla pojedynczych drzew i grup drzew. Zaproponowany jednolity zakres danych o pomnikach przyrody pozwoli na wykorzystanie zebranych informacji w badaniach statystycznych, analizach porównawczych, badaniach nad gatunkami. Ponadto jakość i sposób gromadzenia danych przyczyni się do właściwej ochrony drzew i ich otoczenia.

Słowa kluczowe: ochrona przyrody, rejestr pomników przyrody, zasoby przyrodnicze, Centralny Rejestr Form Ochrony Przyrody (CRFOP)