

METHOD OF ELABORATION OF LANDSCAPE QUALITY OBJECTIVES

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Summary. The most important ratified EU document concerning landscape conservation and management is the European Landscape Convention. One of the primary objectives of the Convention is the conservation or creation of socially desirable landscape quality features, i.e. attainment of specific **landscape quality objectives** (LQO). Work on landscape quality objectives has begun at many European research centres, yet though it is in a phase of fairly intensive development, so far there has been a lack of a specific methodology required for their definition. This paper presents a method for the elaboration of landscape quality objectives developed in Poland, as well as the effects of its pilot application with relation to the projected „Roztocze-Solska Forest” Biosphere Reserve. Landscape quality objectives should include three components: 1) worthy of preservation characteristic landscape features (**canon**); 2) other expected features concerning landscape quality (**objectives to be attained**); 3) methods for the attainment and conservation of the desired status of landscape (**guidelines and instruments**). The detailed procedure for the identification of LQO comprises 10 stages (including studies of the expectations of local communities), and the results of the work are compiled in the form of so-called „Landscape Cards”. The method may have a great significance for the practice of landscape conservation and management in Poland and in Europe. The pilot elaboration of LQO for the area of the projected „Roztocze-Solska Forest” Biosphere Reserve revealed, among other things, what landscape features are particularly important for the conservation and shaping of the unique character of that region.

Key words: The European Landscape Convention, landscape quality objectives

INTRODUCTION

Till now the most important ratified EU document concerning landscape conservation and management is the European Landscape Convention [European... 2000]. It was adopted by the Council of Europe on 20th October, 2000, ratified by Poland in 2004, and published in our country only in 2006 [Europejska Konwencja... 2006].

Among other things, the Convention puts an obligation on EU member countries to:

- legally recognise landscapes as the foundation of identity of human environment;
- establish and implement of a landscape conservation policy, realised with the participation of regional and local authorities and taking into account public opinion;
- incorporate the problems of landscape conservation and management in development planning and in strategies of development of various branches of economy.

The objective of those activities is the conservation or creation of socially desirable landscape quality features, i.e. attainment of **landscape quality objectives**. The Convention defines those objectives as „the formulation by the competent public authorities of the aspirations of the public with regards to the landscape features of their surroundings” [European... 2000]. They should be formulated for specific characteristic landscapes of the particular regions [Sowińska and Chmielewski 2007a].

The consequence of those provisions of the Convention is, among other things, the necessity of conducting an identification of landscapes occurring within the territories of the particular countries, performing an analysis of their characteristic features, and identifying the landscape quality objectives and parameters that are expected by the public opinion of the particular regions.

The Convention places a particular emphasis on cooperation and exchange of experiences among the European countries, and on the participation of representatives of the society in all undertakings connected with landscape conservation and management. An important role is ascribed especially to so-called „local experts” [European... 2000].

Work on landscape quality objectives has begun at many European research centres, yet though it is in a phase of fairly intensive development, so far there has been a lack of a specific methodology required for their definition.

This paper presents a method for the elaboration of landscape quality objectives developed in Poland, as well as the effects of its pilot application with relation to the projected „Roztocze-Solska Forest” Biosphere Reserve.

THE METHOD OF IDENTIFICATION OF LANDSCAPE QUALITY OBJECTIVES

Analysis of current achievements of various countries of Europe in the area of identification and implementation of landscape quality objectives [Fairclough Marcinnes 2003, Wascher 2005, Androp 2006, Nagué and Sala 2006, Rossi *et al.* 2006, Sala 2006, Stalder 2006, Sowińska and Chmielewski 2007b, van Eetvelde and Androp 2009, Sowińska 2010] suggests the conclusion that landscape quality objectives should include three components:

- 1) worthy of preservation characteristic landscape features (canon),
- 2) other expected features concerning landscape quality (objectives to be attained),
- 3) methods for the attainment and conservation of the desired status of landscape (guidelines and instruments).

Work on landscape quality objectives should comprise 4 basic mutually integrated spatial scales: national, regional, subregional and local. Legal recognition of landscapes as the foundation of identity of human environment, general evaluation of diversity and scale of threats to landscape resources and values, and development of a policy of landscape conservation should take place at the level of the individual countries. At the regional level (1 : 100 000) it is necessary to perform charting of landscapes, combined with evaluation of landscape diversity, and to develop regional strategies for landscape conservation and management. Fundamental work on landscape quality objectives should be conducted at a scale that is identified with by the local communities and at which plans of landscape conservation and management are (or should be) developed. Since the elaboration of landscape quality objectives should be done in close cooperation with the inhabitants of the particular lands, the most suitable spatial scale for work of this type appears to be the subregional scale, comprising mesoregions and groups of physiographic mesoregions, individual protected areas (such as national parks or landscape parks), or compact systems of protected areas, cultural or economic subregional functional areas, etc. (1 : 50 000 and 1 : 25 000). For selected areas, particularly valuable in terms of nature and cultural values, it is desirable to elaborate detailed studies, conducted at the scale of 1 : 10 000 and lower (representative natural-landscape units or their groups forming characteristic local landscapes).

The European Landscape Convention recommends that landscape quality objectives should be elaborated for, and guidelines for their attainment should be addressed at specific territorial spatial units. The Convention, however, does not specify what kind of such units should be so addressed, and how to perform their delimitation.

Based on the general recommendations of the European Landscape Convention [European... 2000], suggestions contained in the Report of the European Commission of 2006 [Landscape... 2006], and on the current achievements of several European countries in this area, a method for the identification and implementation of landscape quality objectives at subregional and local levels has been developed at the Department of Landscape Ecology and Nature Conservation, University of Life Sciences in Lublin. The procedure provided for in the method comprises 10 stages (Fig. 1).

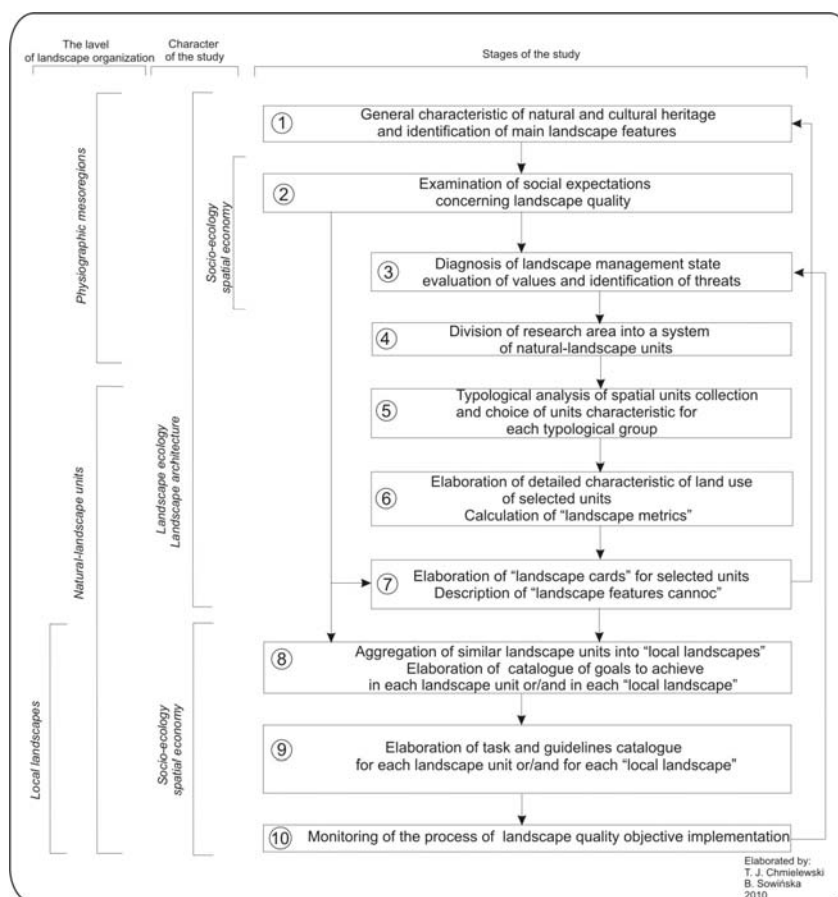
The first stage consists in the preparation of a general characterisation of the natural and cultural heritage of the studied area. It is developed on the basis of analysis of cartographic, descriptive, photographic and other documentation created in prior for that area, including, in particular, geological maps, soil maps, hydrological maps, habitat maps, tree-stand maps, maps of occurrence of rare species, and documentation concerning the cultural heritage.

In the second stage it is necessary to conduct an examination of social opinions and expectations concerning the values of and threats to the natural and cultural heritage, and landscape quality expected or desired by the inhabitants and tourists.

Stage three is the diagnosis of the state of landscape management. It is developed as a result of analysis of the current status and changes in land use structure, retrospective evaluation of results of environmental monitoring, analysis of reach of existing and projected protected areas, study of documentation prepared for the purposes of creation of such areas, analysis of conservation plans and local development plans, analysis of conservation guidelines, and also of the results of sociological studies concerning the social evaluation of landscape quality and threats.

Stage four consists in the division of the area under study into a system of natural-landscape units that will become the basic systems of reference for all subsequent stages of landscape studies and projects.

Fig. 1. Diagram of the method for the elaboration of landscape quality objectives



Stage five comprises typological analysis of differentiation of the whole set of identified natural-landscape units¹. The objective of this stage is grouping of units identified in various parts of the studied area into so-called „clusters” (typological groups) with maximum possible similarity of their leading features. This operation permits to select out of a very large set of various units those that are the most characteristic, representative for the local differentiation of features of the area studied. Focusing further studies on those units only, one can largely get to know the features of all units within a given cluster [Adamczak 2001, Chmielewski and Iwanicka 2004, Richling and Lechnio 2005, Sowińska and Chmielewski 2008].

Stage six is the elaboration of so-called „landscape metrics”, i.e. sets of indices characterising in detail the land use structure of the spatial units studied. The indices are calculated on the basis of aerial or satellite photographs, with the help of the Fragstag software package [McGarigal and Marks 1994, McGarigal *et al.* 2002, Brown *et al.* 2004].

The essence of work on landscape quality objectives is to be found in stages 7, 8 and 9.

Based on the data collected in the preceding stages (including the results of public opinion polls), in stage seven we proceed to the elaboration of a set of „landscape cards”, containing a description and iconography of the „canon of landscape features” of representative natural-landscape units. Each landscape card (Landscape Card No. ...) contains: a map of land cover of a given unit, a numerical model of terrain, a set of numerical data, text presenting characteristic, worthy of preservation or desired features of a given unit, a set of photographs and drawings (Fig. 2).

The realization of stage eight is made up of 2 parts. The first part consists in aggregation of units similar to one another (belonging to a single cluster), and at the same time neighbouring with one another, into territorial systems forming „local landscapes”. The second part comprises the elaboration of a catalogue of aims planned to be achieved in the process of conservation and management of the desired quality of local landscapes.

The result of stage nine is a catalogue of tasks and guidelines concerning the ways of attaining the objectives and conservation of the desired landscape quality. The formulation of the guidelines and tasks should permit their precise incorporation in the text of regional development strategy and in the provisions of spatial development plans and conservation plans developed for the area under analysis.

Stage ten consists in the monitoring of the process of implementation of landscape quality objectives, including evaluation of the effectiveness of realization of the adopted plans and indication of potential threats to the canon of landscape features.

¹ A natural-landscape unit is a fragment of natural space, isolated on the basis of analysis of conformance of spatial reach of various components of the natural environment, land use structure, and landscape physiognomy [Chmielewski 2001, 2006, Sowińska and Chmielewski 2008].

Fig. 2. Pattern of the Landscape Card

LANDSCAPE CARD No. (number & name of the natural- landscape unit)																
A. General data							Fig. 1 Location of unit		Fig. 2 Photograph 1		Fig. 4 Elevation		Fig. 5 Main structural elements and forms of land cover			
B. Lithology and land relief																
C. Soil																
D. Characteristic of land cover																
D1. Characteristic of point and line objects																
D2. Characteristic of landscape patches															D3. Characteristic of land use	
Class Area /Total Area	Mean Class Area \Mean Total Area	Class Area Standard Deviation Total Area Standard Deviation	Percentage of Landscape	Number of Patches	Patch Density	Total Edge	Mean Total Edge	Edge Density	Mean Shape Index Distri- bution	Mean Fractal Index Dimen- sion	Contagiom Index	Patch Richness	Patch Richness Density	Shannon's Diversity Index	Shannon's Evenness Index	
E. Synthesis of landscape features: natural and cultural heritage, landscape physiognomy and threats																
Leading features of land relief Leading features of lithology and soil Land cover structure Leading features of patch structure									Values of natural heritage Forms of protection of natural heritage Values of cultural heritage Forms of protection of cultural heritage Landscape physiognomy Threats to landscape values							
F. Landscape feature canon							G. Aims							H. Task and guidelines		
Inanimate nature Animate nature Cultural heritage Land use structure Landscape physiognomy																

RESULTS OF THE IMPLEMENTATION OF THE METHOD

In Poland the first attempt at creating landscape quality objectives was undertaken in 2006 with relation to the area of the projected „Roztocze-Solska Forest” Biosphere Reserve (263 500 ha), in the Lublin Province and, partially, Podkarpackie Province [Chmielewski (ed.) 2004, Chmielewski and Sowińska 2006, Sowińska and Chmielewski 2007, Chmielewski and Sowińska 2008]. Preliminary work on standard quality objectives were also conducted for another biosphere reserve in the Lublin Region – West Polesie (140 000 ha), established in 2002 [Chmielewski (ed.) 2005, Chmielewski *et al.* 2010].

In the case of the projected „Roztocze-Solska Forest” Biosphere Reserve, within the whole area under study 541 natural-landscape units were identified, out of which – as a result of analysis of typological differentiation of the set – 30 units were selected for the elaboration of landscape cards and for the definition of landscape quality objectives – one each, particularly characteristic and representative for each identified typological group, reflecting the landscape diversity of the region under study [Sowińska 2010]. Presented below is a synthesis of the results of work on landscape quality objectives for one of the 30 representative units. It is unit No. 90, classified in the group of units unique at the scale of the whole Biosphere Reserve, situated at the edge of West Rostocze, at the junction of that mesoregion with two other mesoregions: Central Roztocze and Solska Forest, i.e. in a specific „landscape ecotone”. The synthesis of the results of that work is contained in the „Landscape Card” for the unit, composed of 8 parts (Fig. 3a–3e).

Part A. General data

Part A of the Card contains general information concerning the location of the unit, its area, the character of its boundaries and the form of its main structural elements (Fig. 3a).

Part B. Lithology and characterisation of land relief forms

This part contains a description of the lithological elements determined on the basis of the Detailed Geological Map of Poland, and the character of land relief forms determined on the basis of a geomorphological map, a topographic map, and a numerical model of the area. Hypsometry of the unit is presented in the form of a map of absolute elevation variation within the unit area and profiles of land relief generated within the ArcGis 9.2 software (Fig. 3b).

Part C. Soils

The character of the soil cover was determined on the basis of a soil-agricultural map. The ordering of the particular soil types in the Table reflects their percentage share in the whole unit.

Fig. 3. Landscape card for natural-landscape unit No. 90
„Springs of river Gorajec”

Fig. 3a

A. General data

Mesoregion: West Roztocze

Location: northern part of the unit is situated in the Lublin Province, District of Zamość, commune of Radechnica, southern part in the District of Bilgoraj, commune of Terespol, between the localities of Trzęsiny, Lipowiec, Panasówka, Hedwizyn, Kajetanówka

Topographic names: Mount Tałandy,

Bog Tałandy, Borczyna, Lipowieckie Meadows

Area: 1694.68 ha

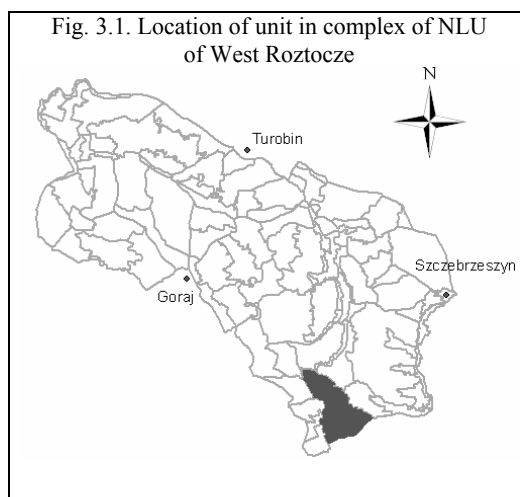
Unit boundaries: N, E – second-class dirt road, partially forest boundary;
S – provincial road;

W – forest boundary that is the boundary of the Szczepczyński Landscape Park

Typological group: W

Shape: slightly elongated

Main structural elements: no division into structural subunits



B. Lithology and characterisation of land relief forms

Elements of lithology	river sands; eolithic sands; peats and peat-like sediments; humus sands; gaize
Relief forms	valleys; accumulation plain
Maximum drop (Dm)	55 m
Drop per hectare (DpH)	0.32 m/ha
Specific geomorphological forms	none

C. Soils

silt-peat and peat-silt; peat and muck-peat; podzolic; black earths proper; brown soils, leached and acid

D. Characterisation of land cover forms

D1. Characterisation of point and line objects

Point objects	Number (L)	Coefficient Nearest Neighbour Ratio (NNR)
Springs (Ż)	2	X
Individual trees (Drz)	35	0.41
Line objects	Length (D) km	Density (G) km/ha
Rivers (Rz)	16.77	0.01
Main melioration ditches (Rm)	9.48	0.006
Hard-surfaced roads (Du)	3.03	0.002
Dirt roads (Dg)	35.33	0.02

Fig. 3b

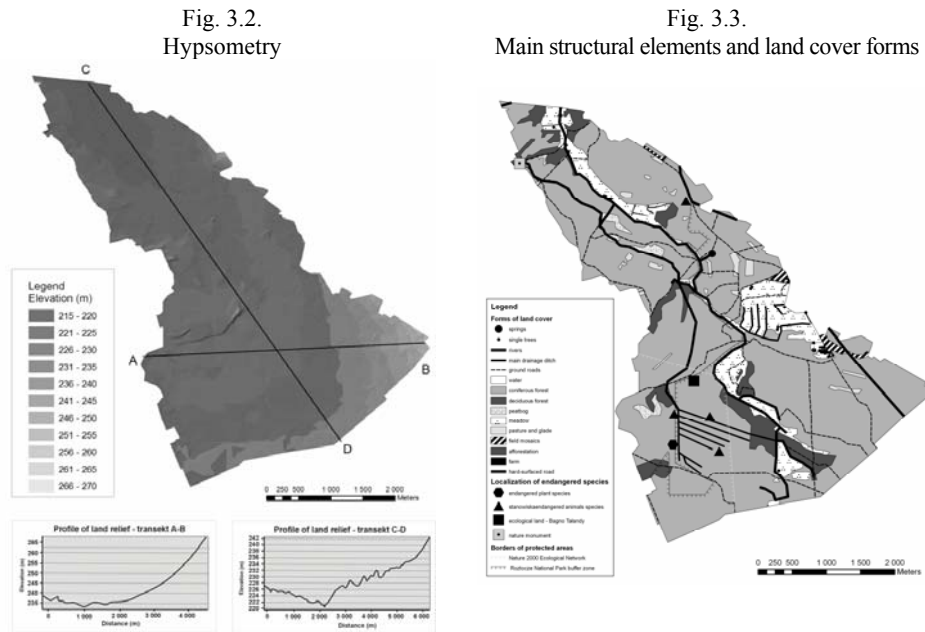


Fig. 3.4. Valley of river Gorajec; Photo B. Sowińska 2010



Fig. 3.5. Chapel in Trzęsiny; Photo B. Sowińska 2008



Part D. Characterisation of land cover forms

D1. Characterisation of line and point forms of land cover

The character of point-type forms of land cover occurring in the particular detail units was determined taking into account their number and value of the index Nearest Neighbour Ratio calculated with the tool *Average Nearest Neighbour*, available in the ArcGis software. Line objects were characterised by giving their length and density per hectare.

D2. Characterisation of landscape patches

This part contains the results of „landscape metrics” calculated for the particular classes of land cover (*Class Metric*) and for the landscape of the whole unit (*Landscape Metrics*) with the help of the Fragstats software (McGarigal *et al.* 2002). The metrics are related to the following elements of the unit:

1. Surface area.
2. Spatial character of landscape.
3. Character of landscape boundaries.
4. Shape of patches.
5. Patch density.
6. Patch diversity in the landscape (Fig. 3c).

D3. Characterisation of land use structure

This part contains a fragment of orthophotomap illustrating the characteristic land use structure of a given unit.

Part E. Synthesis of landscape features: natural and cultural heritage and landscape physiognomy

The synthesis of landscape features of the unit provides a description of:

1. Leading features of land relief.
2. Land cover structure (based on the results of „landscape metrics”).
3. Values of natural heritage and forms of its protection.
4. Values of cultural heritage and forms of its protection.
5. Landscape physiognomy.
6. Threats to natural and landscape values (Fig. 3d).

Part F. Landscape feature canon of the unit

Landscape features of the unit, determining its „genius loci”, are aggregated into five groups relating to:

1. Inanimate nature – leading forms of land relief, specific/rare geomorphological forms, character of the network of rivers.
2. Animate nature – character of various types of ecosystems.
3. Cultural heritage – character of historical objects and complexes, other valuable objects and complexes, valuable examples of regional architecture.
4. Land use structure – character of dominant and complementary forms of land cover, degree of anthropogenic transformation.
5. Landscape physiognomy – range of open vistas and view axes, exposition of panoramas, presence of viewing points (Fig. 3e).

Fig. 3c

D2. Set of indices concerning landscape structure („landscape metrics”)

D3. Characteristic land use structure

Indices	Class Area CA (C3)/Total Area TA (L3)	Mean Class Area MCA \Mean Total Area MTA	Class Area Standard Deviation CASD/ Total Area Standard Deviation TASD	Percentage of Landscape PLAND (C4)	Number of Patches NP (C5)/(L5)	Patch Density PD (C6)/(L)	Total Edge TE (C7)/(L7)	Mean Total Edge MTE	Edge Density ED (C8) / (L8)	Mean Shape Index Distribution SHAPE_MN (C30) / (L30)	Mean Fractal Index Dimension FRAC_MN (C36) / (L36)	Contagion Index CONTAG (L115)	Patch Richness PR (L124)	Patch Richness Density PRD (L125)	Shannon's Diversity Index SHDI (L127)	Shannon's Evenness Index SHEI (L130)
Stagnant waters	0.05	0.025	0.01	0.003	2	0.12	148	74	0.09	1.25	1.09	X	X	X	X	X
Coniferous forests	1 330.4	266.09	327.44	78.51	5	0.29	83 812	16 762	49.39	2.80	1.15	X	X	X	X	X
Deciduous forests	126.58	12.66	11.96	7.47	10	0.59	28 576	2 858	16.84	2.04	1.12	X	X	X	X	X
Peatlands	17.87	4.47	1.81	1.05	4	0.24	5 976	1 494	3.52	1.78	1.11	X	X	X	X	X
Pastures and clearings	21.87	1.04	0.77	1.29	21	1.24	12 236	583	7.21	1.53	1.09	X	X	X	X	X
Meadows	183.74	20.42	26.58	10.84	9	0.53	35 996	3 999	21.21	2.15	1.12	X	X	X	X	X
Multi-ribbon field patterns	11.20	3.73	2.07	0.66	3	0.18	5 224	1 741	3.98	2.29	1.16	X	X	X	X	X
Belt-type tree stands	2.13	0.27	0.24	0.13	8	0.47	4 172	521.5	2.46	2.47	1.21	X	X	X	X	X
Farms	0.79	0.20	0.09	0.05	4	0.24	968	242	0.57	1.37	1.09	X	X	X	X	X
Whole unit	1694.6	25.68	144.25	X	66	3.89	103 940	1 575	61.25	1.93	1.12	82.43	9	0.53	0.77	0.35

Fig. 3d

E. Synthesis of landscape features: natural and cultural heritage and physiognomy of the land

Leading features of land relief	Terrain gently sloping down to the west, with two forest-covered dunes. Large maximum drop in elevation ($Dm = 55$)
Leading features of lithology and soil cover	Prevalence of surface sand formations (70%) with belts of peats and peat-like deposits Mosaic of uniform types of soil cover
Water relations	Upper section of river Gorajec with its spring area
Structure of land cover	Densely grouped individual trees ($DrzNNR = 0.41$) Large length of river network ($RzD = 16.77$) Low density of melioration ditches ($RmG = 0.006$) Low density of hard-surfaced roads ($RmG = 0.002$) Large length of dirt roads ($DgD = 35.33$) Large total landscape surface area ($CA = 1694.68$) Large mean patch size ($MTA = 25.68$) Large number of patches in landscape ($NP = 66$) Very large total length of patch boundaries ($TE = 103940$) Very large number of various patch types in landscape ($PR = 9$) Low density of patches in landscape ($PRD = 0.53$)
Leading features of patch types	Very small area of patches of stagnant waters ($CA = 0.05$) and its mean value ($MCA = 0.025$) Small area of belt tree patches and farms ($CA = 2.13/0.79$) and its mean value ($MCA = 0.27/0.20$) Vary large area of coniferous forests ($CA = 1330.45$) and high mean value of the area ($MCA = 266.09$) Very low percentage share of stagnant water patches and farms ($PLAND = 0.003/0.05$) High percentage share of coniferous forest patches ($PLAND = 78.51$) Low percentage share of multi-ribbon field patches and belt-like tree stands ($PLAND = 0.66/0.13$) Small number of stagnant water patches ($NP = 2$) Very small length of boundaries of stagnant water patches ($TE = 148$) and its mean value ($MTE = 74$) Very big length of boundaries of coniferous forest patches ($TE = 83812$) and its mean value ($MTE = 16762$) Big length of boundaries of meadow patches ($TE = 35996$) Very low density of boundaries of stagnant water patches and farms ($ED = 0.09/0.57$)

Values of natural heritage	<p>Natural character of upper section of river Gorajec and its spring area.</p> <p>Small waterlogged areas of meadows and peatlands.</p> <p>Integrated complex of pine forests with local patches of alder and dry-ground forest along the river valley.</p> <p>Numerous stands of rare, protected and endangered species:</p> <p>Common sundew/<i>D. rotundifolia</i> (1)</p> <p>Lesser spotted eagle/<i>Aguila pomarina</i> (1)</p> <p>Western Capercaillie/<i>Tetrao urogallus</i> (2)</p> <p>Common crane/<i>Grus grus</i> (2)</p>
Forms of protection of natural heritage	<p>The unit forms a part of Natura 2000 areas: OSO Solska Forest PLB060008 and SOO Ranges of Solska Forest PLH060034</p> <p>The whole unit is situated within the Szczepieszyński Landscape Park</p> <p>The northern part belongs to the buffer zone of the Roztoczański National Park</p> <p>Monument of inanimate nature – springs at the Chapel of St. Anthony</p> <p>Object under ecological use: „Bog Tałandy”</p>
Values of cultural heritage	<p>Sacral-spring complex: 19th century wooden log-structure shrine dedicated to St. Anthony.</p>
Forms of protection of cultural heritage	<p>Communal list of protected objects: St. Anthony shrine in Trzęsiny</p>
Landscape physiognomy	<p>Slightly rising terrain covered with a mosaic of coniferous and deciduous forests and meadows, with very short reach of view openings.</p>
Threats to natural and landscape values	<p>Current: overgrowing of meadows through natural succession; high-positioned power lines; degradation of the environment through sewage dumping into surface waters and surface runoff from farming lands</p> <p>Potential: regulation of rivers and melioration of wetlands; disappearance of wetlands and related meadow-peatland ecosystems; construction of hard-surfaces roads dissecting integrated forest complex; encroachment of fields and built-up areas onto forest lands</p>

Fig. 3e

F. Canon of landscape features

G. Aims to attain

H. Guidelines for landscape conservation and management

<p>Inanimate nature Spring area of river Gorajec Upper, predominantly natural section of river Gorajec Parabolic, forest-covered dunes</p>	<p>Partial restoration of natural water relations in the region of Bog Tałandy Conservation of the complex of forest-covered dunes</p>	<p>Elaboration and implementation of conservation plan for the Szczepczyński Landscape Park Damming of water outflow and creation of local flooded areas in the region of former „Bog Tałandy”, removal of a part of the tree stands on the recreated bog, restitution of selected rare species Ban on regulation of riverbed and supplying water courses. Ban on sand exploitation Ban on drainage of the land</p>
<p>Animate nature Patches of mid-forest peatbogs and meadows</p>	<p>Preservation and enrichment of biodiversity of meadow communities Preservation of peatland communities</p>	<p>Preservation of mowed meadow communities Retardation of natural succession of trees and bushes onto meadows and peatbogs After realization of the program of restoration of „Bog Tałandy”, consideration of possibility of giving it the status of a nature reserve Monitoring of rare bog-peatbog and meadow species</p>
<p>Adler communities and dry-ground forest in river valley</p>	<p>Conservation of forests in the valley of river Gorajec</p>	<p>Forest management adapted to the requirements of landscape park and Natura 2000 site Maintenance of high humidity of forest habitats Observation of tree stand conformance with habitat</p>
<p>Complex of pine forests</p>	<p>Enhancement of age and species diversity of the pine forests</p>	<p>Introduction of lower floor of local deciduous trees and bushes into pine stands Monitoring of rare forest species (lesser spotted eagle, capercaillie, crane, among others)</p>
	<p>Creation of a buffer zone along water courses, ponds and peatbogs</p>	<p>Non-localisation of total felling areas along the river valley and near the peatbogs</p>

<p>Cultural heritage Wooden log-structure shrine dedicated to St. Anthony, from the end of 19th century, situated near mid-forest springs</p> <p>Single farms surrounded with small patches of fields</p> <p>Land use structure Mosaic of various forms of land cover Large number of land cover patches Domination of forest ecosystems (86%) with numerous clearings Moderate share of peatland and meadow ecosystems (12%) Very small share of arable fields and built-up areas (0.7%)</p> <p>Landscape physiognomy View openings occur only in the meadow area situated in the eastern part of the unit Exceptional architectural-landscape interior created by the spring-sacral complex in Trzęsiny</p>	<p>Aesthetic enhancement of the surroundings of the shrine to St. Anthony</p> <p>Preservation of the forest – meadow – peatbog mosaic</p> <p>Preservation of the view openings on the meadows</p> <p>Bringing into prominence the dominant of the architectural-landscape interior of St. Anthony shrine</p>	<p>Replacement of shrine roofing from eternit to shingle Replacement of the spring area walling from the stone-concrete wall to a naturalistic spatial composition of local stone (marl)</p> <p>Preservation of mid-forest peatbog enclaves Ban on new building permits</p> <p>Preservation of open meadow spaces</p> <p>Elimination of tree and bush stands obscuring the most interesting view axes and openings connecting the shrine with the spring area niche and the water course valley</p>
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Part G. Aims to attain

For each of the five groups of features determining the „landscape feature canon” of the unit a set of aims is formulated, related to the particular components of landscape and concerning their protection, conservation/preservation, enhancement/improvement of values, management, restoration, etc.

Part H. Guidelines for landscape conservation and management

Guidelines are provided for each of the aims, permitting the conservation, restoration or achievement of the desired „landscape feature canon”. The guidelines relate to the principles of conservation and management of the particular elements of landscape.

CONCLUSIONS

1. The developed method for the elaboration of landscape quality objectives may have a great importance for the practice of landscape conservation and management in Poland and in Europe.

2. Landscape quality objectives should include three components: 1) worthy of preservation characteristic landscape features (**canon**); 2) other expected features concerning landscape quality (**objectives to be attained**); 3) methods for the attainment and conservation of the desired status of landscape (**guidelines and instruments**).

3. In the process of identification of landscape quality objectives a very important element is to get to know the expectations of local communities and tourists concerning the quality of landscape in which they would like to live and rest.

4. The pilot elaboration of LQO for the area of the projected „Roztocze-Solska Forest” Biosphere Reserve revealed, among other things, what landscape features are particularly important for the conservation and shaping of the unique character of that region.

5. The elaborated LQO may constitute an important argument in favour of urgent creation of that Reserve, and a valuable tool for the management of landscape conservation and balanced development of that area.

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METODA IDENTYFIKACJI STANDARDÓW JAKOŚCI KRAJOBRAZU

Streszczenie. Najważniejszym dotychczas ratyfikowanym dokumentem Unii Europejskiej dotyczącym ochrony i kształtowania krajobrazu jest Europejska konwencja krajobrazowa. Jednym z wiodących celów tej konwencji jest zachowanie lub ukształtowanie społecznie pożądanых cech jakościowych krajobrazu, czyli osiągnięcie określonych **standardów jakości krajobrazu** (sjk). Prace nad tymi standardami rozpoczęto w wielu europejskich ośrodkach naukowych. Są one w fazie dość intensywnego rozwoju, jednak dotychczas nie ma jednoznacznej metodologii ich

określenia. Artykuł prezentuje opracowaną w Polsce metodę ustalania standardów jakości krajobrazu oraz efekty pilotażowego zastosowania tej metody na obszarze projektowanego rezerwatu biosfery „Roztocze-Puszcza Solska”. Standardy jakości krajobrazu powinny mieć 3 składowe: 1) godne zachowania, charakterystyczne cechy krajobrazu (**kanon**), 2) inne oczekiwane cechy dotyczące jakości krajobrazu (**cele do osiągnięcia**), 3) sposoby osiągania i metody ochrony pożądanego stanu krajobrazu (**wytyczne i instrumenty**). Szczegółowy tok postępowania nad identyfikacją sjk obejmuje 10 etapów (w tym badania oczekiwań społeczności lokalnych), a wyniki prac zapisywane są w postaci tzw. „kart krajobrazowych”. Opracowana metoda może mieć wielkie znaczenie dla praktyki ochrony i kształtowania krajobrazu w Polsce i Europie. Pilotażowe opracowanie sjk dla obszaru projektowanego rezerwatu biosfery „Roztocze-Puszcza Solska” wykazało m. in., jakie cechy krajobrazu mają szczególne znaczenie dla trwałego zachowania niepowtarzalnego charakteru tego regionu.

Słowa kluczowe: Europejska konwencja krajobrazowa, standardy jakości krajobrazu