

Małgorzata Walczak*

Update and modernisation of the descriptive and graphic databases of protected areas in Poland

Modernizacja i aktualizacja tekstowej i graficznej bazy danych o obszarach chronionych w Polsce

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Słowa kluczowe: obszary chronione, formy ochrony przyrody, park narodowy, park krajobrazowy, rezerwat przyrody, obszar chronionego krajobrazu, zasoby danych, ochrona przyrody.

Abstract

The paper presents the scope of substantive and technical upgrade of database "Protected areas in Poland" at the Institute of Environmental Protection – National Research Institute (IEP-NRI) and the resulting opportunities of providing new information. The modernised databases facilitate analyses and in-depth studies into the designated areas in Poland.

Streszczenie

Tematem artykułu jest merytoryczna i techniczna modernizacja bazy danych „Obszary chronione w Polsce” oraz wynikające z niej nowe możliwości wyszukiwania informacji, i co za tym idzie, wykorzystania danych zawartych w bazie do analiz i badań nad obszarami chronionymi w Polsce. Baza danych prowadzona jest w Instytucie Ochrony Środowiska – Państwowym Instytucie Badawczym.

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1. INTRODUCTION

The work on databases "Protected areas in Poland" at the Department of Nature and Landscape Conservation, Institute of Environmental Protection – National Research Institute (IEP-NRI) has been ongoing since 1998. The bases constitute a versatile and modern tool for collecting and processing information on designated areas in Poland. They are also an important source of information and provide opportunities to carry out research on networks of protected areas in terms of both their number and structure as well as the dynamics of changes over the last decades.

2. UPGRADING OF THE DATABASES

Taking into account that since 1998 the descriptive database has been supported by an outdated applications and software, in 2012 we began its thorough technical modernisation by adding specific tools and options. The modernisation consisted of:

- integration of the descriptive database and the internal database based on the system Arc GIS 9 (9.3.1 Arc View, Arc Map 9.3.1);
- replacing the outdated software applications with a modern database management system;
- introduction of tools for data browsing and editing using a web browser.

The descriptive database was modernised based on the freely available management system MySQL version 5.5. The database now uses the PHP programming language (version 5.4) and the JavaScript library jQuery. The technical modernisation was done by Mirosław Leszczyński, IEP-NRI main IT Specialist.

The essential content of the database was also modernised and upgraded with the aim to achieve the topical and, at the same time, optimal information source on various forms of protection in Poland from the users' point of view.

The databases "Protected areas in Poland" include:

- information regarding Natura 2000 and Ramsar sites (Fig. 2) including data on bird species listed in Annex I of the Birds Directive (for bird protection areas) as well as data on plant and animal species (except of birds) listed in Annexes I and II of the Habitats Directive;
- enlarged descriptive database with the Polish and Latin names of: plants, animals, fungi and habitats; the names of physical, geographical and geobotanical regions were also added;
- updated and expanded descriptions of the designated areas, especially in the context of nature reserves and national parks (based on the Department of Nature Conservation and Landscape – IEP-NRI's publications);
- enlarged database containing national parks and nature reserves with additional information on conservation management planning, protected habitats and international designations (Ramsar, Natura 2000, Biosphere Reserve – UNESCO "Man and the Biosphere", World Heritage of the UNESCO, HELCOM areas, Diploma of the European Council);
- broadened information on the species protection (species of protected plants according to the Decree of the Ministry of Environment as of 5.01. 2012, species of protected animals according to the Decree of the Ministry of Environment as of 12.10.2011, species of protected fungi following the Decree

of the Ministry of Environment as of 09.07.2004); the lists of endangered species included in the Polish Red Book of Animals and those on the Polish Red Book of Plants were also included;

- the visual information about the area's location with the descriptive part of the base (schematic map with a spot location of the area);
- enlarged graphic base with the spatial information about the nature – landscape ranges and documentary positions (spot layer).

3. THE STRUCTURE AND DATA RESOURCES

Data resources exist in the form of two interconnected databases, graphic and descriptive, connected by attributes. Each object included in the descriptive database has its graphical representation in the form of polygons or points placed on thematic layers (Fig. 1). Currently, the database includes graphical and descriptive information about almost all forms of nature protection (except for the most numerous, i.e.: monuments of nature and areas of ecological value), following the Act of Nature Conservation as of 16 April 2004 (Official Journal No. 92, item. 880, with later amendments), as well as the Ramsar sites designated on the basis of the Convention on wetlands of special importance for the waterfowl (Fig. 2). The descriptive database has a new layout; presentation of data is clear, legible and visually attractive (Fig. 3).

4. DATA MANAGEMENT: OPPORTUNITIES FOR RETRIEVAL OF INFORMATION FROM THE DATABASE

The application supporting so far the database allowed for searching the information from the data sources (by type of protection status, administrative position, date and types of reserves Figs. 4

and 5). As a result of modernisation, there are now opportunities to select information according to species of plants, animals and fungi, protected habitats and international designations.

Owing to the modern database management system, in addition to the opportunities of collecting data on protected areas, there will also be a possibility to process, analyse and present the results in a graphical form. Searching will be carried out via the web browser. The option **Statistics** provides the ability to obtain information concerning the number and size of the database objects, both in terms of administration (by province) as well as forms of protection. The option **Archive** makes it possible to store information about former protected areas that no longer exist or those that changed their status. This information may be useful for analysis of changes taking place in the protected areas in Poland over the years.

5. PRACTICAL USE OF THE DATABASE

In 2012, the data from the base were used for the following work.

- **Research on:**
 1. Scientific study on nature and landscape.
 2. Study on "Birds as indicators of changes in biological diversity".
 3. Interdisciplinary study carried out in collaboration with other laboratories at IEP-NRI; as for example, "Analysis of changes in breeding avifauna of the Borecka Forest at the turn of the 20th and 21st centuries" (in cooperation with the Borecka Forest Environmental Monitoring Station).
- **Protection plan of national parks and landscape protection parks:** e.g. Management plan for Góry Stołowe National Park,
- **Planning of protective tasks for Natura 2000 areas:** Lasy Skalskie, Niecka Skalska, Bory Tucholskie, Dolina Wieprzy i Studnicy, Dolina Łupawy, Lasy Mirachowskie and SOO i OSO Góry Stołowe.

Availability of the database: The database will be installed on the IEP-NRI server until the end of 2013. The access to the

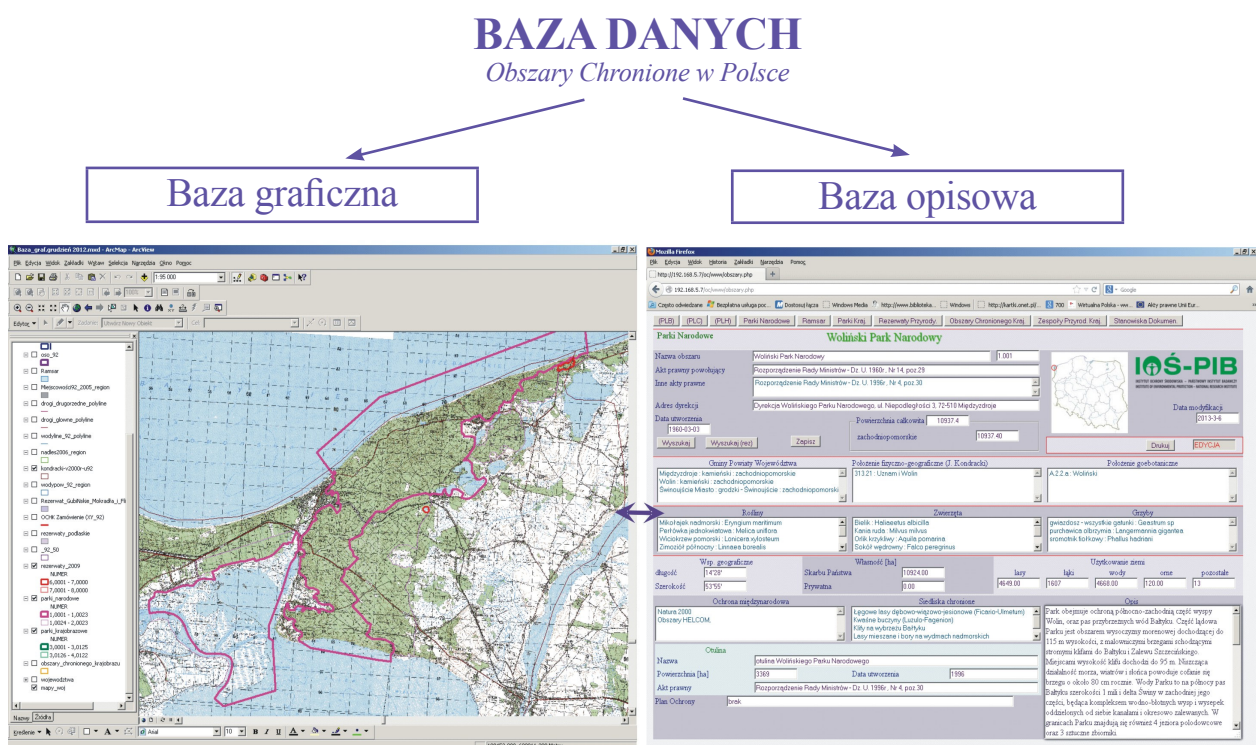


Fig. 1. Structure of the database

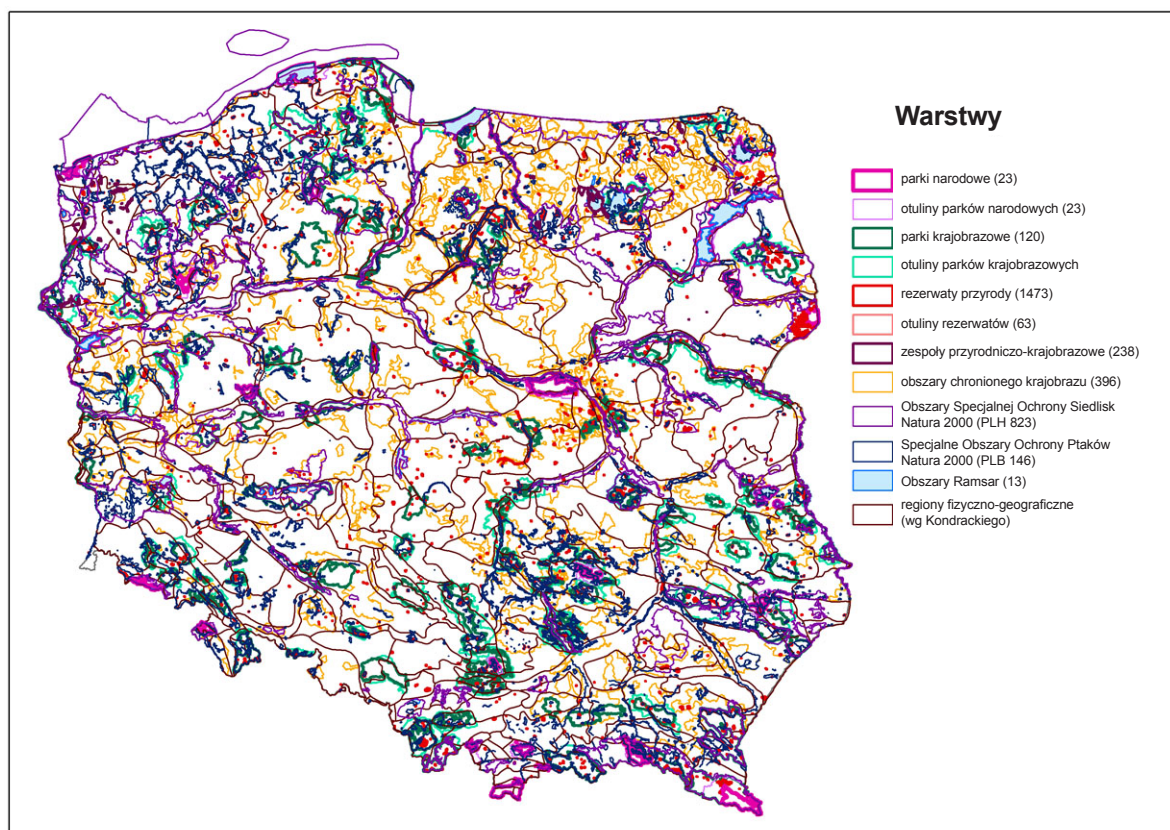


Fig. 2. Location of protected areas in Poland (Source: IEP-NRI database: Protected areas in Poland)

Mozilla Firefox

Elk Edycja Widok Historia Zakładki Narzędzia Pomoc

http://192.168.5.7/oc/www/obszary.php

192.168.5.7/oc/www/obszary.php

Google

Wirtualna Polska - ww...

Alty prawne Uni Eur...

(PLB) (PLC) (PLH) Parki Narodowe Ramsar Parki Kraj. Rezerваты Przyrody. Obszary Chronionego Kraj. Zespoły Przyrod. Kraj. Stanowiska Dokument.

Parki Narodowe

Woliński Park Narodowy

Nazwa obszaru: Woliński Park Narodowy 1.001

Akt prawny powołujący: Rozporządzenie Rady Ministrów - Dz. U. 1960r. Nr 14, poz. 29

Inne akty prawne: Rozporządzenie Rady Ministrów - Dz. U. 1996r. Nr 4, poz. 30

Instytucja zarządzająca: Dyrekcja Wolińskiego Parku Narodowego, ul. Niepodległości 3, 72-510 Międzyzdroje

Data utworzenia: 1960-03-03

Ścieżka chroniona: 224.00

Powierzchnia całkowita: 10937.4

zachodniopomorskie 10937.40

Wyszukaj Wyszukaj (rez) Zapisz Drukuj EDYCJA

Grany Powiaty Województwa: Międzyzdroje: kamieński: zachodniopomorskie Wolin: kamieński: zachodniopomorskie Swinoujście Miasto: grodzki: Swinoujście: zachodniopomorskie

Położenie fizyczno-geograficzne (J. Kondracki): 313.21: Uznam i Wolin

Położenie geobotaniczne: A.2.2.a: Woliński

Rośliny

Mikołajek nadmorski: Eryngium maritimum

Perłówka jednokwiatowa: Melica uniflora

Wiciokrzew pomorski: Lonicera xylosteum

Zimowit północny: Linnaea borealis

Zwierzęta

Bielik: Haliaeetus albicilla

Kania ruda: Milvus milvus

Orlik krzykły: Aquila pomarina

Sokół wędrowny: Falco peregrinus

Grzyby

gwiazdosz - wszystkie gatunki: Geastrum sp

purchawica olbrzymia: Langermannia gigantea

sromotnik tołkowy: Phallus haddani

Wsp. geograficzne: długość: 14°28' szerokość: 53°55'

Własność [ha]: Skarbu Państwa: 10924.00 Prywatna: 0.00

Użytkowanie ziemi: lasy: 4649.00 łąki: 1607.00 wody: 4668.00 orne: 120.00 pozostałe: 13.00

Ochrona międzynarodowa: Natura 2000 Obszary HELCOM.

Siedliska chronione: Kwaśne buczyny (Luzulo-Fagetum) Klify na wybrzeżu Bałtyku Lasy mieszczone i bory na wydmach nadmorskich Nadmorskie wydmy szare

Opis

Park obejmuje ochroną północno-zachodnią część wyspy Wolin, oraz pas przybrzeżnych wód Bałtyku. Część lądowa Parku jest obszarem wysoczyzny morenowej dochodzącej do 115 m wysokości, z malowniczymi brzegami schodzącymi stromymi klifami do Bałtyku i Zalewu Szczecińskiego. Miejscami wysokość klifu dochodzi do 95 m. Niszcząca działalność morza, wiatrów i słońca powoduje cofanie się brzegu o około 80 cm rocznie. Wody Parku to na północy pas Bałtyku szerokości 1 m i delta Świny w zachodniej jego części, będąca kompleksem wodno-błotnych wysp i wysypek oddzielonych od siebie kanałami i okresowo zalewanych. W granicach Parku znajdują się również 4 jeziora połodowcowe oraz 3 sztuczne zbiorniki.

Otulina

Nazwa: otulina Wolińskiego Parku Narodowego

Powierzchnia [ha]: 3369

Data utworzenia: 1996-01-03

Akt prawny: Rozporządzenie Rady Ministrów - Dz. U. 1996r. Nr 4, poz. 30

Plan Ochrony: brak

Fig. 3. Example of the descriptive data (Woliński National Park)

