

PROBLEMS OF RURAL LANDSCAPE'S PROTECTION VS ANTHROPOPRESSURE AND RECREATION MOVEMENT - THE EXAMPLE OF THE NATURE RESERVE "STAWY RASZYŃSKIE" NEAR WARSAW

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Abstract

The paper refers to a case study of the nature reserve "Stawy Raszyńskie", with surrounding areas featuring broad natural and cultural values. Together with its buffer zone, it's one of the most valuable natural parts of Warsaw's Protected Landscape Area (Poland), being under the management of I.T.-P. - the Institute of Technology and Life Sciences in Falenty (Polish Ministry of Agriculture). The legal protection includes a wetland biotope - a rich ecosystem for waterfowl, marsh birds and many species of plants and animals (a system of several ponds with adjacent areas - a buffer zone of approx. 100 ha). For many reasons, existing precautions are inadequate, leading to the steady degradation of the site. Concerning the protection of opened landscapes, the publication aims to present the problems and possible solutions related to the valuable natural landscape of the rural regions exposed to strong anthropopressure.

In recent years, the social importance of these legally protected open areas of outstanding natural, landscape and cultural significance has been increasing due to the progressing intensive urbanization of the southern suburbs of Warsaw. In the case of such anthropogenic (human-transformed) ecosystems, the authors wonder whether achieving a certain balance between the objectives of nature and landscape protection and social needs in the future is possible. One of the best options is to perform specific natural self-regulation - while shaping the landscape and maintaining pervasive agriculture for educational and demonstration purposes; the controlled admission of sustainable tourism and recreation is possible - which, left without any surveillance, may lead to the devastation of these valuable areas.

Key words: Anthtopopression, open landscape protection, urbanization, rural landscape, recreation movement, woodlots, views' protection

Introduction

Nature conservation in the 21st century is a highly complex and multi-faceted problem that goes beyond the scope of this publication. The growing social costs resulting from the civilizational attitude towards exploiting the environment must eventually transform into a more sustainable social life, respecting nature and other beings. Thus, it seems that we are currently witnessing a slow transition to the era of the "Symbiocene" - the opposite of the "Anthropocene". However, this requires a huge mental change on a mass scale, which happens very gradually.



Fig. 1: Location of the study area - the "Raszyn's Ponds" Nature Reserve with its buffer zone within the boundaries of the rural commune of Raszyn, near Warsaw. Eds.: Authors, 2022.

In Poland, the landscape of rural areas is subject to a robust anthropogenic transformation in places, bringing irreversible and often adverse effects. **The research aims** to show selected problems of open landscape protection on the example of a case study of the areas around the "Raszyn's Ponds" (Stawy Raszyńskie) Nature Reserve, which nicely illustrates the phenomena above. The reserve is located in the rural commune of Raszyn - but close to Warsaw [Fig. 1]. Forecasts from half a century ago predicted that the city would surround this reserve, and its ecological and social importance would

significantly increase due to the urbanization of the surrounding areas and better transport accessibility. We are dealing with the culmination of these processes today.

The "Raszyn's Ponds" Natural Reserve was established in the mid-1970s. Even then, the area was covered by specific bans to protect the natural values, especially the fauna (birds, amphibians, insects). The "Raszyn's Ponds" Faunistic Nature Reserve is a priceless area of living wild nature, constituting a rich ecosystem of wetlands essential for waterfowl, marsh birds and many species of plants and animals, and of great climatic and hydrological importance [Ramsar]. It consists of several ponds with adjacent areas (lagging). It is one of the most valuable natural parts of the Warsaw Protected Landscape Area, within a radius of many kilometers in the suburbs of Warsaw [RDOŚ, 2021]. An essential factor in maintaining the reserve was the extensive fishing economy - ecological carp farming, which is now profitable and effective (results of the I.T.-P. study of 2014). The area of the Natural Reserve has great landscape values - natural, still undisturbed interior scenery and views referring to the style of an English park [Fig. 2].



Fig. 2: Ponds in Falenty, in Raszyn Commune - the scenery of the English park;

Fig. 3: The palace in Falenty. Photo. J. Łukasziewicz, 07 2021.

Since the 1990s, the reserve and its buffer zone areas - being the communal property of the Raszyn Commune - have been in perpetual use by I.T.-P. (Institute of Technology and Life Sciences in Falenty) in connection with its scientific activity. Fish farming and the development of a complex system of fish ponds carried out for over 200 years have become the factor that has the most significant impact on the physiognomy and natural values of the local cultural landscape.

The tourist attractiveness of this region, apart from the natural values, results from the exciting history of these areas. There are remains of a palace and park complex (beginnings as early as in the 17th century), near which the well-known Polish sculptor Magdalena Abakanowicz was born at the beginning of the 20th century [Fig. 3.]. The landscape around of the Raszyn's ponds has been immortalized in the paintings of Wojciech and Jerzy Kossak and the writings of Stefan Żeromski. It is where an important battle of the Napoleonic era took place on April 19, 1809 [Fig. 4. and 5.].



Fig. 4: The battle of Raszyn - the Polish troops of the Duchy of Warsaw led by Prince Józef Poniatowski repelling the Austrian attack, April 19, 1809. Painted by Wojciech Kossak, 1913 [Wikimedia]



Fig. 5: The present state of the former battlefield captured in the painting by Wojciech Kossak in 1913
-. Photo. J. Łukaszewicz, 04 2022.

Material and methods

Since 2018, the authors have conducted regular, annual observations of the area within the boundaries administered by I.T.-P. (Institute of Technology and Life Sciences in Falenty). Since 2022, research has been carried out in cooperation with SKOF (Social Committee for the Protection of Falenty) - an independent, apolitical, open civic organization to preserve the values of The "Raszyn's Ponds" Natural Reserve. Field research includes, in particular, the registration of scenic connections, environmental monitoring, and monitoring of traffic and tourist use. An assessment of anthropopressure factors that threaten the site's natural and cultural values is being carried out, taking into account internal and external conditions.

As part of the studies carried out annually for five years under the direction of the authors, variant scenarios for the development and protection of the areas of the Natural Reserve and its vicinity are created. They have the character of landscape studies made on maps on the scale of 1:5000, with particular emphasis on nature protection, the possibility of introducing mid-field and waterside plantations, shaping landscape scenery, emphasizing the direction of tourist traffic, and others. Additionally, visualizations, cross-sections of the landscape and model solutions for midfield woodlots are developed as additional studies.

Results

Based on the research results, it can be concluded that the legal protection of The "Raszyn's Ponds" Natural Reserve does not, unfortunately, prevent significant adverse changes in the natural environment. One of the critical factors was the cessation of carp breeding in 2016, a kind of symbiosis between man and nature, ending this region's more than 200-year-old cultural tradition. Abandonment of fish farming calls into question the purpose of reserve protection, which is the protection of biotopes - more and more valuable every decade. Lack of breeding can directly limit the food base of piscivorous birds. Resignation from mowing rushes or collecting too little water in reservoirs may intensify succession processes, gradually reducing the water table and worsening the habitat conditions of many animals. Scientists have long emphasized that the most important cause of species extinction today is the loss of habitats [S.K.O.F., 2023].

Another threat to the protection of these areas is anthropogenic pressure. Anthropopressure is currently growing due to the construction boom in the surrounding areas. Several thousand apartments are being built here, mainly in terraced houses and low-rise multi-storey buildings. The conditions of the Covid-19 pandemic have increased tourist traffic in the Reserve. Regarding that fact, there is a lack of sufficient infrastructure that I.T.-P. should provide in the form of providing car parks, fencing off-field roads leading to the Reserve, setting up garbage containers, information boards and others.

There is also a clear threat to the integrity of the reserve area, which is the trend of disposal of invaluable natural areas by I.T.-P., which are the communal property of the Raszyn Commune only in perpetual usufruct of the Institute in connection with its scientific activity. These actions are protested against and blocked by local social organizations [S.K.O.F., 2023].

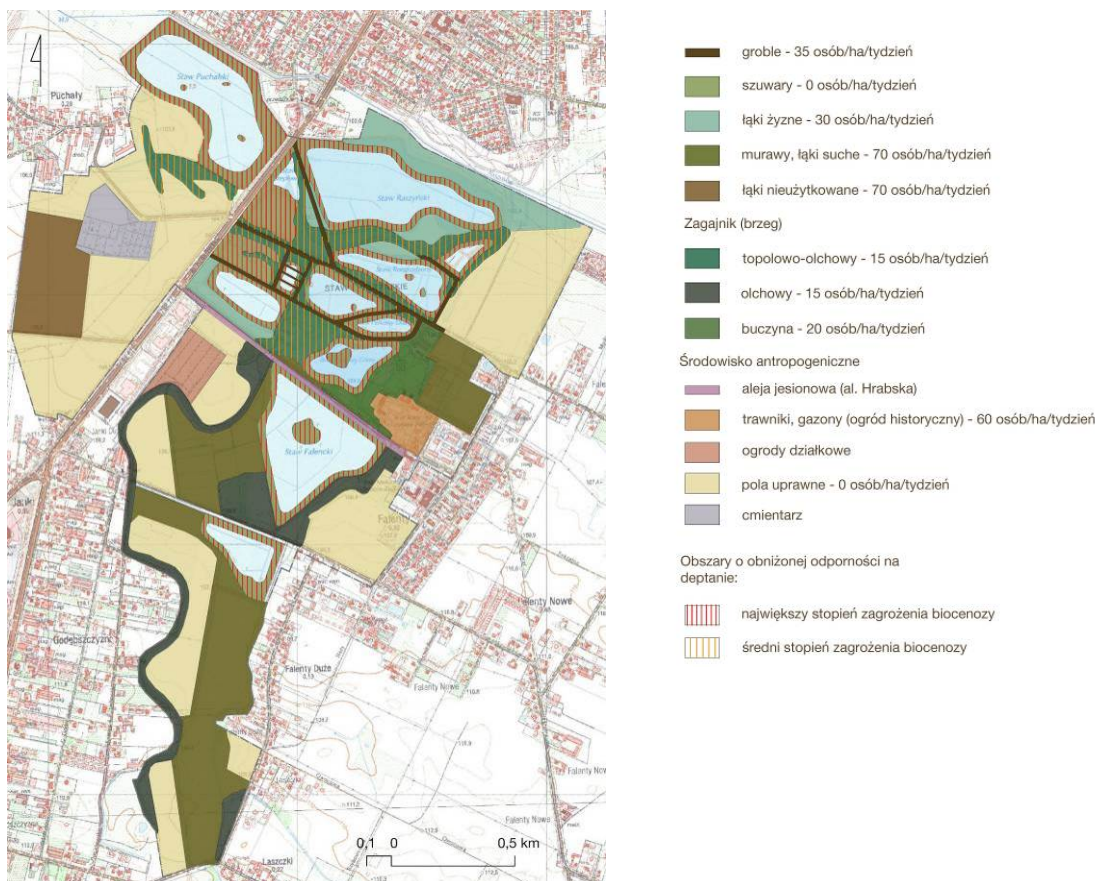


Fig. 6: Delimitation of the natural recreational absorption of the areas around The "Raszyn's Ponds" Natural Reserve, depending on the form of development. Eds.: Authors, 2022.

As a result of the research, it was found that the intensity of recreational attendance in the areas around the Reserve (especially on non-working days and in good weather) significantly exceeds the permissible thresholds of natural recreational absorption (max. 70 people/ha/week), consequently resulting in their natural degradation [Fig. 6.]. As a consequence, apart from the passive formal protection of the reserve areas, active protection is also necessary. This goal can be achieved by creating three primary functional and spatial zones with different purposes:

Zone 1. - external (buffer), not continuous ("mosaic pattern") in the form of scattered selected areas located on the outskirts of the buffer zone of the Reserve, close to the main directions of recreational flow (car, bicycle, pedestrian traffic). The proposed intensive recreation and leisure program must be adapted to the natural and cultural conditions of the study area, ensuring periodic high recreational absorption. The zone is designed to relieve the buffer zone and the interior of the Reserve from excessive recreational traffic. The natural and technical investment in this zone assumes the introduction of places for parking cars, sanitary facilities and places optimal for various people and social groups for games, play, leisure of a free choice, such as picnicking, physical games, etc.

Zone 2. - the buffer zone of the natural Reserve is distinguished by high natural and humanistic values with minimal technical investment. An important function is assigned to intentionally shaped mid-field woodlots, model crops, orchards, apiaries and grasslands, enriching the ecosystem and shaping scenic scenery. Technical equipment includes the auxiliary form of gazebos and benches, along with the optimal number of roads and paths. This area should be used for general environmental education and shaping the ecological culture of people and social groups visiting it. It would include a training ground for popularising ecological knowledge by schools and universities among students and all users.

Zone 3 - the area of a strict reserve with a compact and dominant surface concerning zones 1 and 2, without the possibility of mass recreation. It is a sanctuary for birds and animals - the most valuable natural part of the local landscape requiring complete protection.

Discussion

The "Raszyn's Ponds" Natural Reserve case study illustrates a broader problem of shaping and protecting the open landscape of rural areas in Poland and beyond. There are new challenges and

related opportunities and threats. Currently, society is looking for new spaces for tourism and recreation. It can be ensured by cultural landscapes - mainly rural landscapes - primarily located on the outskirts of cities, in areas with high natural and cultural values, present a tourist attractiveness, and still have relatively high actual and potential values. However, the problem arises of how to designate and arrange tourism space in the rural landscape not to initiate natural, social, economic and aesthetic dysfunctions [Bartman and Bartman, 1996].

The above issue is also related to the progressive blurring of the classical, dual form: city-village, progressing in urbanized zones. Despite all connections and interdependencies, it usually leads to a significant disintegration of the landscape, in which development elements have different functions, forms and standards right next to each other [Bogdanowski, et al., 1979]. New spatial structures and new landforms are created, in which the functions and forms of the city and the countryside appear right next to each other in a mix.

The presented case study of the "Raszyn's Ponds" Natural Reserve shows that alongside the objectives of nature and landscape protection, social needs of recreation must be provided. One of the best options is to achieve specific natural self-regulation based on so-called "re-wilding". While shaping the landscape and maintaining pervasive economic use (agriculture, breeding) for educational and demonstration purposes, the controlled admission of sustainable tourism and recreation is possible - which, left without any control, may lead to the devastation of these valuable areas. Active landscape cultivation must supplement passive protection (Reserve) [Bartman and Bartman, 1996]. Especially in the areas of intense anthropogenic pressure, the lack of sustainable maintenance and protection of the landscape may have led to the destabilization of the ecological system (e.g. expansion of invasive plant species etc.) [Fortuna-Antoszkiewicz, et al. 2018].

Conclusion

The results obtained during the research allow the following conclusions to be drawn:

- The example of the "Raszyn's Ponds" Natural Reserve illustrates well the broader problem of anthropopressure in the landscape of rural areas - in naturally valuable areas - legally protected;
- Anthropopression manifests itself both in the form of urbanization of open areas - so far free of development, as well as the intensity of recreational traffic, especially in the vicinity of large cities, such as Warsaw - both of these factors contribute to the degradation of environmentally valuable areas;
- Because of such high pressure in the case of the Natural Reserve in question and similar areas in various other locations, passive protective measures are not sufficient, and their implementation is usually illusory - it is necessary to immediately verify the scope of the form of protection and assess the legitimacy of the recommended protective measures;
- The natural and social significance of the "Raszyn's Ponds" Natural Reserve now goes beyond the local aspect - variant landscape studies for this area carried out under the direction of the authors inspire the local community to initiate activities aimed at developing a new formula for protecting and developing the landscape around the Reserve, e.g. in cooperation with scientists from the Warsaw University of Life Sciences (Landscape Architecture) and the Warsaw University of Technology (Faculty of Architecture).

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Souhrn

Případová studie přírodní rezervace "Rašínovy rybníky" (Stawy Raszyńskie) ilustruje širší problém utváření a ochrany volné krajiny venkovských oblastí v Polsku i mimo něj. Objevují se nové výzvy a s nimi spojené příležitosti a hrozby. ochrany těchto území je antropogenní tlak. Antropotlak v současnosti roste v důsledku stavebního boomu v okolních oblastech. Podmínky pandemie Covid-19 zvýšily turistický ruch v rezervaci. vzniká problém, jak vymezit a uspořádat turistický prostor ve venkovské krajině, aby neinicioval přírodní, sociální, ekonomické a estetické dysfunkce. Cílem výzkumu je ukázat vybrané problémy ochrany volné krajiny na příkladu případové studie území v okolí přírodní rezervace "Rašínovy rybníky". Autoři provádějí variantní scénáře rozvoje a ochrany výše uvedené lokality s naznačením některých možných řešení. Při utváření krajiny a zachování všudypřítomného hospodářského využití (zemědělství, chovatelství) pro vzdělávací a demonstrační účely je možné řízené připuštění udržitelného cestovního ruchu a rekreace - což ponecháno bez jakékoliv kontroly může vést k devastaci těchto cenných území.

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