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A Change in the Image of the Wolf (*Canis lupus*) in the Poles' Public Awareness – the Demand for Environmental Education

Zmiana wizerunku wilka (*Canis lupus*) w świadomości Polaków – postulat edukacji ekologicznej

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Abstract: The public awareness of the grey wolf (*Canis lupus*) is shaped by various messages. Among these, undoubtedly the most influential are those related to repeated stereotypes, often based on unverified sources or even misinformation. As a consequence, it leads to numerous human-wolf conflicts. The aim of this article is to highlight the role of environmental education, conducted in its various forms, in changing the social perception of *Canis lupus*. The paradox observed in the public image of the wolf somewhat compels the implementation of effective environmental education with a view toward its protection. An analytical-synthetic method was applied in this paper, which enabled the formulation of conclusions from the collected research material. Among these are findings indicating that building a positive image of the predator should be based on reliable scientific data. Moreover, selecting appropriate educational methods and forms allows scientific data to be presented to all recipients of the educational process, from the youngest children to adults. Consequently, environmental education delivered in this way to various social groups shapes a proper image of the key predator of the forest ecosystem—the grey wolf.

Keywords: environmental education, grey wolf, *Canis lupus*, environmental awareness, human-animal relationship

Streszczenie: Świadomość społeczna na temat wilka szarego *Canis lupus* kształtowana jest przez rozmaite przekazy. Wśród nich niewątpliwie na pierwszym miejscu można wskazać te związane z powielanymi stereotypami, które często budowane są na niesprawdzonych źródłach wiedzy, czy wynikają nawet z dezinformacji. W konsekwencji powoduje to szereg konfliktów w relacji człowiek – wilk. Celem niniejszego artykułu jest ukazanie roli procesu edukacji ekologicznej, realizowanego w jej różnych formach, w kontekście zmiany wizerunku *Canis lupus* w percepcji społecznej. Kwestia zdiagnozowanego paradoksu obrazu wilka w świadomości społecznej wymusza poniekąd zastosowanie skutecznej edukacji ekologicznej w perspektywie jego ochrony. W artykule zastosowana została metoda analityczno-syntetyczna, która pozwoliła na sformułowanie wniosków z zebranego materiału badawczego. Wśród nich znajdują się m.in. te wskazujące, że budowanie przyjaznego wizerunku drapieżnika winno być oparte na rzetelnych danych naukowych. Ponadto dobór odpowiednich metod i form edukacyjnych pozwala na zaprezentowanie danych naukowych wszystkim odbiorcom procesu edukacyjnego zaczynając od najmłodszych aż po osoby dorosłe. W konsekwencji tak realizowana edukacja ekologiczna różnych grup społecznych kształtuje właściwy obraz kluczowego drapieżnika ekosystemu leśnego jakim jest wilk szary.

Słowa kluczowe: edukacja ekologiczna, wilk szary, *Canis lupus*, świadomość ekologiczna, relacja człowiek-zwierzę

Introduction

Human beings coexist in the environment with other plant and animal species. Consequently, the concept of the socio-natural environment is used in the relevant literature, and its scope also reflects the changes taking place in the environment, including its various components. In principle, environmental education aims at shaping public awareness of the problems occurring in the socio-natural environment. Another key educational goal is to raise awareness of the need to actively protect the environment, to be implemented in everyday activities.

The grey wolf (*Canis lupus*) is a representative of predatory species to which an infamous image has been attributed. Unfortunately, in numerous cases it is related to information that enters the public awareness through sources which are based on unreliable data, lacking scientific justification. As a result, the grey wolf is portrayed as an animal that kills domestic animals or attacks humans upon meeting them.

In the process of environmental education aimed at building knowledge about the key predator in the forest ecosystem, it is necessary to take into account scientific sources in order to prevent stereotypes from being repeated without deeper reflection. An important role played by this species in the environment is the regulation of the herbivore populations, which helps preserve biodiversity. There are numerous benefits to be gained from the presence of *Canis lupus* in the environment, and these can be learned from studies of the species' behaviour conducted by wildlife researchers. However, for such research to reach a wider audience, information about it must be incorporated in environmental education at various stages of schooling, preferably by means of attractive forms of knowledge transfer. This article aims at drawing readers' attention to the need to discuss, as part of the educational process, issues from such problem areas, as the human-wolf relationship.

1. Between the Natural and Social Environment – Analysis of Dependencies and Conflicts in the Human-Wolf Relationship

Both humans and grey wolf (*Canis lupus*) have lived in Europe for thousands of years. Consequently, both species have been forced to compete for access to food. The development of civilisation has led, among other things, to wolves being partially driven out of inhabited areas. One can, therefore, conclude that the relationship between the two species is characterised by conflict and dualism.

It is widely believed that the grey wolf is an important element of the ecosystem which helps preserve its balance. This is due, among other things, to the fact that the wolf, as a predator at the top of the food chain, regulates herbivore populations. Furthermore, it contributes to limiting damage to farmland by reducing the density of ungulates feeding on crops (Nowak and Mysłajek 2025, 12-14). The benefits that wolves bring to the ecosystem also include the elimination of sick animals, which helps reduce the risk of spreading the virus responsible for the African Swine Fever (ASF), tick-borne diseases and tuberculosis (Szewczyk et al. 2021, 3-5).

Despite numerous benefits connected with the presence of the grey wolf in the environment, public perception of the species is negative. This is due to the fact that *Canis lupus* is wrongly perceived as a dangerous predator and there are various myths about the species. Currently, the conflict between *Canis lupus* and humans which attracts the most media attention concerns losses suffered by farmers. According to 2022 data, wolves killed 2,200 farm animals, including calves, cows, sheep, goats, fallow deer and farmed deer (Nowak 2025). The last two species, due to the large areas they require, are not kept in well-fenced pastures, which consequently provides easily accessible opportunities for wolves to obtain food. *Canis lupus* is responsible for 0.08% of all cattle killing incidents (Nowak 2025). Another debatable

issue is also the level of security measures applied by some farmers. There are numerous methods of protecting farm animals which may reduce the likelihood of wolf attacks. These include, for example (Nowak and Mysłajek 2020, 25-49):

- guard dogs;
- fence of appropriate height;
- fladry;
- electric shepherds;
- bringing animals to their pens for the night.

Another point of contention between wolves and humans is the alleged attacks by predators on people. Such incidents are often mistaken for attacks by wild dogs or dogs roaming free in rural areas. According to the 2022 data, there were 3,900 incidents involving serious dog bites. Since 1998, when wolves were placed under strict protection, there have been only two such incidents. In both cases, attempts were made to tame the wolves, the first through close contact with humans, and the second through domestication (Nowak and Mysłajek 2025, 26). In 2021, an incident occurred in the Brzozów Forest District, where two young wolves, despite the noise of chainsaws, did not flee but approached people working in the forest, which was interpreted as an attempted attack. It was established later that they were young animals that were not ready to hunt on their own (Sokołowski 2021). The above-mentioned example of the alleged wolf attack on a human led to further consequences in the form of explanatory opinions which can be found in websites of various news portals. An analysis of this case confirms the fact that public awareness of the wolf's role in the socio-natural environment is often based on unverified information intended to cause panic among audiences.

The fear of wolves, gradually built up over centuries and linked to their perceived aggression towards humans, has been largely due to the wolf's menacing appearance and the fact that it is a predator. However, research and scientific observations confirm

that *Canis lupus* is actually afraid of human scent, and attacks are very rare, usually occurring when the animal is provoked or sick.

What demonstrates a high degree of conflict is the relationship between wolves and hunters or poachers. Despite the fact that the predator is a protected species, there are still incidents of wolves being killed illegally. Hunting clubs have been lobbying for years to have wolves reinstated to the list of game animals, probably justifying their position with the increase in the wolf population. Since the predator was granted strict protection, its numbers have increased several times. In 2001, the wolf population was estimated at 463-564 individuals. According to the 2019 data published by GIOŚ (Chief Inspectorate for Environmental Protection), the current population amounts to approximately 2,000 animals (Moczulska 2024, 190-192.). Despite such an increase, it should be remembered that the wolf regulates populations of forest animals. In Poland, there are few predator species capable of ensuring population control that maintains the balance in the ecosystem. The number 2,000, encompassing the whole country and, specifically, the areas where the wolf is present, does not make it an excessive population which should be regulated by hunters.

The main reason for educating the public about the presence of wolves in the socio-natural environment is the deep-seated fear of encountering them and the lack of learned behavioural responses. In most cases, it is the wolf that is afraid of humans, but due to long-standing beliefs and stereotypes this predator is viewed with apprehension by society. However, there is established guidance on how to behave upon encountering a wolf and feeling threatened. First of all, one should wave their arms energetically, as it will make the wolf notice the person more quickly, and help spread their scent, which the predator fears, so it will run away. One can also shout loudly or clap their hands. If it does not work, for example in encounters with young or sick wolves, one should throw

at them objects, such as pinecones, that will not harm the animals (Nowak and Mysłajek 2025, 29-30). If encountered animals appear to be in a poor physical condition, appropriate services should be notified.

The 20th century was a disgraceful period for the wolf. Following the wolf's territorial expansion and an increase in the species' population, the authorities issued a resolution treating the wolf as a pest, which allowed animals to be killed by any means. Those activities lasted nearly 20 years. Apart from shootings, young cubs were pulled from their dens. At the same time, the species was being reintroduced, for example in the forests near the city of Toruń, where wolves had previously lived. However, in combination with the hunting permits the campaign did not make much sense, as wolves were quickly shot (Sewerniak 2019, 329).

2. Paradox of the Wolf's Perception in the Socio-Natural Environment

What is characteristic of the human perception of wolves on the social and environmental level is a paradoxical relationship. Research conducted, for example, among hunters and foresters suggests that their perception of large predators such as lynx, bear and wolf, presence is generally positive. Although the conservation of these three species is considered important, the wolf arouses the least concern (70% in the case of the wolf, compared to 91% in the case of the bear and 93% in the case of the lynx) (2022 IMAS Survey). This group of respondents feels more fearful of the wolf than of other predators. On one hand, they acknowledge the wolf's positive role in the ecosystem, as *Canis lupus* species preys on deer. However, on the other hand, it is the wolf that competes with them for the animals they hunt (e.g. roe and stag deer). Consequently, the conflict between hunters and wolves is caused, among other things, by fears of not meeting annual deer culling quotas and, in a sense, justifies

this dualistic perception of wolves (WWF Poland 2022).

Another survey was conducted to assess public sentiment about the protection of *Canis lupus* species in Poland. The majority of respondents correctly answered the question: "Is the wolf a protected species in Poland?" Opinions were divided regarding the question whether it is right to restore the wolf population in Poland. One hundred and one respondents gave the affirmative answer, 61 a negative one, and 26 abstained. However, most respondents had a negative perception of wolves, justifying their opinion with fears of wolf attacks on humans, livestock and domestic animals, as well as a reduction in game populations and the transmission of infectious diseases. Paradoxically, the respondents also pointed out that the wolf is a rare predator species that regulates the presence of large herbivores in the environment. The sceptical view of the wolf population growth is probably due to concerns about its excessive expansion (Wróbel et al. 2023, 189).

Important reasons influencing public awareness of the grey wolf's role in the environment include cultural factors. An analysis of past and present manifestations of culture and art suggests that they shape the wolf's image in a negative way. One example illustrating this is the "Cherokee Legend of the Two Wolves," originating in North America. The legend depicts the inner conflict of the human being torn between two sides. The first is represented by a black wolf, symbolising negative character traits. It is portrayed as an entity with false pride, unable to control its anger, jealousy, sadness and regret. The second is represented by a white wolf, symbolising joy, peace, love, hope, and humility. Depending on the life choices made, one of the wolves begins to dominate, which, consequently, determines the human character (Wordpress.com 2022). Culturally, the black colour is attributed to negative, gloomy imagery, while white is the colour of purity and brightness, which is why it is associated with positive

traits. Furthermore, colours influence our perception. A dark colour, such as black, is associated with the night. During the night our senses are weakened. In the past, such a perception could have adversely affected the way in which the wolf was viewed. White wolves are not common in nature, unlike those with darker coats, which automatically makes people associate black ones with fear and terror.

Lycanthropy, from the Greek *lykánthropos*, refers to the transformation of a human being into a werewolf. It is yet another example of culture-based legends leading to the wolf's stigmatised image. In numerous cultures, assuming the form of an animal had a positive connotation, symbolising strength and power. Nevertheless, lycanthropy has cast a shadow on the wolf's image. Transformation into a werewolf was believed to be punishment for the wrongdoing. Such beliefs were not uncommon in ancient Greek culture, which gave rise to the myth of Lycaon. The titular character, the king of Arcadia, plotted against Zeus and served him a dish made of human flesh. As punishment, Lycaon was transformed into a wolf and deprived of all human features (Kleczkowska 2011, 85, 88-89).

One of the most popular fairy tales for children is *Little Red Riding Hood*, published in 1697 by Charles Perrault. Despite its age, the story is still widely known and read to children today. In the tale, Little Red Riding Hood is walking through a forest to visit her grandmother. Meanwhile, the wolf sneaks into the grandmother's cottage, where it eats her by using a trick and then disguises itself as her. Upon arrival, Little Red Riding Hood also falls victim to the wolf's deception and is eaten (Perrault 1993). In Perrault's version neither victim survived. The moral of the story is: take care of yourself and be cautious. The use of anthropomorphism may have been intended to make the text more vivid for the reader or may have reflected the perception of the wolf at that time. The fairy tale's continued relevance shows that

the perception of the predator remains similar.

In many cultures worldwide, the wolf has been or still is perceived negatively. However, there are cultures whose perception of the animal was completely different. The founding of the city of Rome is based on the legend of Romulus and Remus. The brothers were orphaned at birth, their mother was killed, and the basket containing the siblings was thrown into the Tiber. The children were saved by a she-wolf, and one of the brothers, Romulus, later founded the city of Rome (Frankiewicz-Piórek 2022). In this legend, the she-wolf played the archetype of the mother – one of the most important archetypes in the human history – who was credited with the key role in the founding of Rome.

In Poland, over the centuries, attempts were made to eliminate the grey wolf species from the natural environment. The first mentions about *Canis lupus* date back to the 16th century. Surviving records by Ferdinand Pax indicate that in the 17th century the wolf population in Upper Silesia was very large. Such information is confirmed by meticulous research conducted by, among others, Sabina Nowak and Robert W. Mysłajek. At that time, the wolf was considered a pest. According to the chronicles, the number of packs was excessive, and they competed with the people settling down in those areas. The gradual culling of the predator resulted in a drastic decline in its population in Poland in the 19th century. Only the armed conflicts in the 19th and 20th centuries allowed the species to recover, due to the lack of interest on the part of the state and the population, who were preoccupied with other matters. The climax occurred in the second half of the 20th century, when only 100 individuals remained in Poland due to the annual elimination of up to several hundred wolves (Borowska and Bereszyński 2014, 78-79).

The absence of the key predator in the forest ecosystem leads to excess of herbivores. In such case, people's role is to externally

regulate the herbivore populations, e.g. through shooting. Such actions are nothing more than artificially maintaining the ecosystem's balance.

The paradox of how wolves are perceived lies in the simultaneous desire to eradicate the species while at the same time emphasising its positive impact on the natural environment. The wolf's image has been perceived differently depending on the region of the world and prevailing cultural beliefs. A very good example is Poland, where the wolf's image was demonised for centuries, culminating in the mass extermination of the predator in the 20th century. This paradox is also reflected in the legal protection of *Canis lupus*, which over the last century shaped the image of this predator as a pest in the environment, up to the point when its strict protection was required. It should be emphasised that the changes introduced were influenced by the new political system in Poland, greater scientific knowledge about the predator, and the development of the broadly understood environmental protection in the country. Such activities have resulted in raised public awareness in the 21st century, which is crucial for preserving the wolf's status as a protected species.

3. Education Aimed at Shaping a Reliable Image of the Wolf in Society

What plays an important role in the problem in question is the educational process. In general terms, it refers to education that can be implemented at every stage of the human development, based on appropriately selected programmes and teaching methods. The necessity to provide education focused on the protection of the socio-natural environment results from the need to reduce the consequences of the environmental crisis. The crisis in question has been identified on the basis of findings provided by systematic research into the environment's condition and quality. It includes analyses conducted over recent decades, which society is gradually becoming acquainted with (Tuszyńska and Klimski 2019, 116-119).

The problems occurring in the socio-natural environment perfectly fit the need to include them into the educational process. Public awareness of the grey wolf's role in the natural ecosystem depends, among other things, on whether that process is conducted in a reliable way. It can be concluded that both formal and informal environmental education is a helpful tool in helping the wolf gain a new image. The scope of such environmental education includes, among other things, deepening knowledge of protected species, e.g. *Canis lupus*. Although the Polish education system does not feature a separate subject called environmental education, content related to environmental protection is included in numerous other subjects (Klimski and Sulewska 2025, 6-7).

Knowledge transfer as part of the educational process can take place at various levels. As pointed out above, education is divided into formal and informal one. The former consists in acquiring knowledge on the basis of a syllabus built on the general education curriculum for primary and post-primary schools as well as education at the academic level. On the other hand, education that addresses issues related to the protection of the socio-natural environment in an informal setting can take place through social media, during themed nature trips (e.g. to national parks or foundations), or through exhibitions at environmental education centres. One of the tasks of modern education, especially formal education, is to select appropriate teaching methods so that educational content is absorbed by learners, e.g. students, in the most effective way possible. This can be exemplified by the application of the so-called 635 technique (Przybyło and Nenko 2024). This technique, being one of the forms of brainstorming used to solve a specific problem, was introduced at a secondary school in the city of Piła. The 635 technique was used in connection with the topic of species which are in conflict with humans, including the grey wolf. The lesson was divided into three stages. The first one consisted

in determining the students' knowledge through a diagnostic test. At the second stage, the lesson was conducted by means of the 635 technique. At the third stage, the students took the test again to check the extent to which the knowledge had been acquired. The technique involved dividing the students into groups of six, whose task was to quickly (within 5 minutes), after discussing the issue together, come up with three ideas for solving the problem: how to mitigate the conflict between humans and animals, including wolves, without leading to the displacement of these species. The aim was to find solutions which would minimise losses, and, at the same time, influence a change in the perception of the image of conflict species. After the subject-matter part and the second test, it was possible to assess, after the lesson conducted on the basis of the 635 technique, the effectiveness of the method applied. The percentage of correct answers among students rose from 40% to 71%, which clearly demonstrates its effectiveness. Engaging students during the class proved to be both an attractive and an effective way of acquiring knowledge (Jackowiak et al. 2019, 44-48).

Yet another tool for shaping environmental attitudes is the creation of educational and nature-oriented literary works. One such example, intended to build friendly attitudes towards wolves, is a tale *Ambaras* by Tomasz Samojlik. The book has been published by Stefan Jakimiuk, the manager of WWF project "Białowieża National Park". The reason why this tale was written was the intention to shape right attitudes towards such predators, as the wolf among the youngest members of society. The book's main character is a wolf named Ambaras, and the plot is based on the species' daily routine. It describes, among other things, the make-up of packs, division of roles within the pack, the way in which the predator's instinct works, and public sentiment connected with the wolf's presence. Its structure has been divided into four parts, each of them representing a different season.

The aim was to present the entire year of a wolf's life, i.e. from spring, when cubs are born, until winter, when they become independent. The book also seeks to dispel stereotypes and myths connected with the predator, which still persist in public awareness. The fairy tale touches upon such themes as alleged wolf attacks on humans, the demonisation of the species as a predator that brutally kills its prey, and the perception of the wolf as an archetype of evil.

The publication was prepared by a team of specialists, thanks to which the descriptions of the wolf's life and of the structures it is part of have an interdisciplinary character, thereby enhancing the work's educational potential. The work is intended for wide audiences, both young and older readers, making it an interesting foundation for acquiring reliable knowledge about the grey wolf's behaviour. The narrative style of the work and the introduction of the reader to the wolf's annual life cycle make it possible to empathise with the main character and identify with the various problems encountered by the young wolf in its environment (Naplocha 2019, 328-332, 335-337). The combination of reliable knowledge and the appropriate form of its delivery makes the educational process more effective and enjoyable.

Conclusion

The promotion of the content related to the behaviour of such predators as grey wolf *Canis lupus* in the educational process of society is justified for numerous reasons. One of them is the elimination of the paradox that exists in connection with that species. On one hand, there is a widespread belief in society about the dangers associated with the presence of wolves, but, on the other hand, their important role as key regulators of forest ecosystems is emphasised from a scientific perspective.

Shaping appropriate attitudes and habits aimed at taking care of the species is part of protecting the socio-natural environment. Furthermore, the implementation of reliable

content in the educational process not only translates into deeper theoretical knowledge, but also helps resolve various conflicts, including the one discussed in the article. It is also a step towards building harmony between the human being and conflict species, with the wolf being one of them.

Educating the public about the image of wolves and other animal species that are a source of conflict is crucial. Raising public awareness may, in the future, help protect this predator from ill-advised decisions taken by the entities responsible for its management and protection. In view of the possible introduction of regulatory measures, such as shooting selected animals in connection with excessive population growth, such decisions should be based on reliable scientific research, thorough inventory, and precise identification of the problem. On no account should they rely on social perceptions shaped by multigenerational beliefs, which are largely based on myths and superstitions.

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