The White Stork *Ciconia ciconia* protection in Poland by tradition, customs, law, and active efforts

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**ABSTRACT:** The White Stork was among the first bird species in Poland to be provided with both conservative and active protection, including care for disabled and injured birds (reported as early as in the 15th century) and the 200-year-old (or even longer) tradition of constructing nest platforms by villagers. Historical sources suggest that Poles have held this bird species in high esteem for at least 500 years, which is likely to stem from the fact that it nests near human settlements and from the related folk beliefs about the species, sometimes still vivid today. The White Stork protection by folk customs and tradition has been compared with its legal protection, which was established only in 1952. By comparing the White Stork protection with other bird species having the same legal status (e.g., birds of prey), which are often persecuted despite their legal protection, it has been shown that the White Stork conservation is still based on tradition and social customs, with legal measures performing just an auxiliary function. Based on the available literature – from the 1870s and, more extensively, from the 1930s onwards – this paper explores various social groups’ attitudes toward storks. Starting from the same period, it discusses threats and protective efforts, still relying heavily on spontaneous, traditional protection by villagers, only since 1990s supported by state institutions, power industry companies (massive scale construction of nest platforms on top of electric poles) and particularly by environmental NGOs.

**KEY WORDS:** species protection, legal protection, bird crime, mortality, active protection, nest platforms

**Introduction**

The goal of this paper is to present various causes and forms of the White Stork protection in Poland, and to assess which of them are of critical importance. The paper discusses historical and cultural factors that have led to the species’ unique
status in the Polish society. Finally, it presents the White Stork protection by the Polish law, as well as specific threats and forms of active protection.

Folk beliefs and tradition as the basis of the White Stork’s special status in Poland

The special status and protection afforded by people to the White Stork dates back to the ancient past. As reported in the Bible, the ancient Jewish law forbade to eat storks (The Third Book of Moses, 11: 13–18; The Fourth Book of Moses, 14: 12–18). However, the ban was not a reflection of any special respect for the species. Quite the opposite: “And these are they which ye shall have in abomination among the fowls; they shall not be eaten, they are an abomination: the eagle (...) and the stork” (The Third Book of Moses, 11:13–18). The information about the special relationship between ancient Jews and the White Stork (Kucharski 1998, Indykiewicz 2004) should be completed by a comment that it was not forbidden to kill storks, but only to eat them. Indeed, the emphasized “abomination” of the species could have encouraged people to kill these birds. Another ancient regulation – this time a typically “protective” measure – was mentioned by a Greek scholar, Pliny the Younger, in his work Caii Plinii Secondi Historiae Naturalis (in Wodzicki 1935): Because storks killed snakes in Thessaly (Greece), killing a stork was punished with death, just as murdering a person!

Most probably, friendly attitudes toward storks developed not in Israel (where they were “only” passing birds), but in the species’ breeding areas in Europe, because of the close relationship between storks and humans. The species’ unique status may be attributed to several reasons. First, from time immemorial the White Stork has been regarded as a herald of spring, and thus, as a promise of the end of winter – an oppressive time of cold and hunger (Lewandowski & Radkiewicz 1991, Gloger 1996). Heralds of good news are always given a warm welcome, and the same was true for storks. Interestingly, in ancient Greece a special prize was awarded to the person who was the first one to notice a stork in early spring and to announce this good news to others (Kucharski 1998).

Initially, the species inhabited mainly muddy valleys of large rivers and lakeshores, but most probably it was already in the early historical times when storks settled in the man-made agricultural landscape (Tomiałojć & Stawarczyk 2003). For centuries White Storks have built their nests on and near people’s houses. Although the first specific evidence comes from the early 18th century and was provided by Janota (1876, after Rev. Gabriel Rzączyński), this phenomenon is unquestionably much older, probably even from 15th century: according to Annales seu cronicae incliti Regni Poloniae (1455–1480, by Jan Długosz, the first work presenting the history of Poland), villagers in the region of Kraków cared for storks in their houses during winter, so storks probably bred close to people’s houses (after Gloger 1996).

Folk beliefs often portray a stork as a man turned into a bird by God, as a punishment. The man did not obey God’s ban and looked into a bag he was supposed to guard, thus letting out reptiles, amphibians, and all kinds of “vermin”. He was punished by being turned into a stork and condemned to catch these animals for
ever. The story echoes a famous Greek myth about Epimetheus, Pandora, and her box (Lewandowski & Radkiewicz 1991). According to Gloger (1996) the man was changed into a stork for backbiting, while Majewski (1891) reports it was for working on Sunday.

Another set of beliefs, perhaps the most important one, includes stories associating storks’ nests in human homesteads with good fortune, which was believed to be brought on the homestead and its inhabitants by these birds. On the other hand, according to other beliefs storks have a power of bringing adversities, such as fire, hail, flood or cows giving bloody milk, on people who had harmed them (Janota 1876, Majewski 1891, Brückner 1939, Lewandowski & Radkiewicz 1991, Gloger 1996). This superstition may be seen as providing a sort of intentional protection for the species (Janota 1876), protection reflected in specific moral and social sanctions. A stork researcher, Count Kaźmierz Wodzicki, who was also a prominent landowner in South-Eastern Poland, reported that villagers had repeatedly advised him against employing people who killed storks, because they believed such people brought misfortune and were unreliable. Moreover, Wodzicki (1877) mentions a village near Tarnopol which was ostracized by people living in neighboring villages, because storks would not nest in its homesteads.

The stork’s beneficialness as a reason for its protection

Another reason for protecting storks was their “beneficialness” (from people’s perspective), for example, as “pest” reducers. Popular publications emphasized the species’ role in killing “pests”—insects, locusts, mice, and moles—calling the stork beneficial (Wodzicki 1877, Czudek 1935, Sokolowski 1958) and counting it among farmers’ helpers (Nowak 1961). Moreover, authors stressed storks’ important contribution to combating locust plagues, e.g., in 1847 in the region of Podole (Nowak 1961).

The stork in art and as a symbol of Poland

Lewandowski and Radkiewicz (1991) observed that a stork appeared in many Polish literary works, and although it was rarely depicted as the main character, it added special flavor and some folk quality. Many poets and writers used the motif of a stork or a stork’s nest as a symbol of love and longing for the home country and the hope to come back. This motif was emphasized in the 19th century, when Poland was occupied by three invaders. We may find an exquisite example in a poem titled Moja piosnka (My Song), written in 1854 by an outstanding Polish poet, Cyprian Kamil Norwid. In the 19th century the stork theme was also used by two other great Polish poets and national bards—Adam Mickiewicz (in his national epic Pan Tadeusz, 1834) and Juliusz Słowacki. The White Stork’s relationship with the Polish countryside was also stressed in the works by other excellent poets, including Władysław Belza, Władysław Broniewski (Odlot bocianów – Departure of the Storks), Aleksander Fredro (Ojczyzna nasza – Our Homeland), Maria Konopnicka (Nasz domek – Our Little House), and Teofil Lenartowicz; as well as novelists, such as Władysław Reymont in his novel Chłopi (Peasants) written between 1904 and 1909, and awarded with the Nobel Prize in Literature in 1924. A
stork is also a popular motif in folk culture, e.g., in folk stories, children’s songs, and children’s games (Lewandowski & Radkiewicz 1991).

Attitudes toward White Storks in the 1930s.

Extensive, quantitative information about people’s attitudes toward storks was provided by an inquiry survey conducted in 1933 among municipal offices in the Province of Cracow (South-Eastern Poland). Here is the pattern of responses to the question about people’s attitudes toward the White Stork (summary of data presented in Table 4; Wodzicki, 1933): very friendly (i.e., people protect storks) – 116 (61.1%), neutral – 58 (30.5%), persecuting – 16 (8.4%). A similar inquiry was conducted in 1934 across schools in the Polish part of Silesia (Southern Poland) – the most industrialized and urbanized region in the country. Here is the distribution of responses to the question about how people treat storks: friendly (i.e., people protect storks) – 132 (64.7%), neutral – 52 (25.5%), persecuting – 20 (9.8%). In the same year such a survey was administered to municipal offices in the Province of Lvov, i.e., in a region which is partly located within the current Polish borders (in the South-Eastern part of the country). The respondents’ provided the following answers to the question about people’s attitudes toward the White Stork (Wodzicki 1935): very friendly – 84 (5.6%), friendly – 958 (64.1%), neutral – 449 (30.1%), and persecuting – 3 (0.2%).

These surveys and the Silesian data reported by Czudek (1935) reliably document people’s essentially favorable attitudes toward the species in the 1930s. Because the data pertain to a period before the establishment of legal protection of the White Stork in Poland, they point to traditional customs, rather than legal regulations, as the underlying reasons for the widespread protection of the species.

Also in those regions of Poland which lay outside the Polish borders before World War II, people were generally friendly toward storks. For example, Lüttschwager (1936) reports that 70% of storks’ nests in the surroundings of the Free City of Danzig (now Gdańsk) were built on man-made nest platforms. Gruhl (1929, after Jerzak et al. 2006), however, regarded people’s negative attitudes, frequent cases of destroying nests, and shooting storks as “pests” as the main causes of brood losses.

Attitudes toward White Storks in the 1970s.

The next period, for which we have abundant data concerning the White Stork, is the 1970s, mainly conducted within the Third International Census of the White Stork in 1974 (Jakubiec 1985). The available literature does not provide precise, quantitative data about attitudes toward the species, but numerous reports developed for individual counties described people as generally friendly toward White Storks and willing to take care of them, mainly through installing nest platforms (Jakubiec 1985). A major problem in this period involved frequent cases of stork nests being thrown down in the process of roof reconstruction, due to a legal obligation to replace old roofs in buildings covered with soft materials, e.g., straw, reed, or rush (Jakubiec 1985). It was much rarer for people to remove stork nests from trees,
chimneys, pylons, telephone poles, and power transformers (Jakubiec 1985, Kusiak 1985, Okulewicz 1985), or for no reason at all (Kusiak 1985). On the other hand, there are occasional reports about efforts to transfer stork nests with eggs or nestlings from the demolished roofs to special posts (Kot 1985). There is also a single report about just one researcher, Morawski (1985), who tried to reduce the negative tendency through instructing farmers on how to make nest platforms.

Regional, professional, and social differences in attitudes toward White Storks

People’s attitudes toward storks may differ from region to region, across various professional and social groups, and with time. In the 1930s the percentage of cases of stork persecution was much higher in Silesia than in other regions of Poland, and Wodzicki (1934) emphasized that such a hostile attitude was observed mainly in Śląsk Cieszyński (a part of Silesia). In his analysis of the years 1925–1934 Czudek (1935) noted that while the general Silesian population had shown friendly attitudes towards the species, White Storks had been persecuted by youth (out of sheer mindlessness) and particularly by the owners and leaseholders of fish ponds. The author presents several cases of shooting storks. The first wave of such shootings occurred at the time of the Silesian referendum and uprisings of 1919–1921. Notably, storks were not killed by the fighting parties, but by peacemaking troops of the Entente Cordiale coalition (British, French, and Italian), who were brought into Silesia to calm the situation and stop the fights, and by armed civilians. Less numerous cases of shooting storks, committed solely by local people, were reported in the region every year, between 1925 and 1934 (with the maximum number of 23 shot birds recorded in 1928). Supposedly, the general population of Sileans disapproved of those practices, and the number of such cases decreased (Czudek 1935).

The available data from the 1970s (Jakubiec 1985) suggest that negative attitudes toward White Storks were distinctive for people living in state farms, who would even go as far as to mindless killing of nestlings and adult birds (Okulewicz 1985). These were people who had migrated to the area after World War II, lost their “roots”, and gave up their moral values, confused by the system of “real socialism”. The only cases of stork shooting that were reported in the region of Łódź between 1974 and 1984, occurred near the fish ponds belonging to the local State Fishery Farm (Wojciechowski 1992).

The problem of alleged farming losses

The critical contribution of owners and leaseholders of fish ponds in the then Polish Silesia to the persecution of storks, was confirmed by the previously cited data reported by Wodzicki (1934) and Czudek (1935). In the reports from field checks conducted within the Third International Census of the White Stork 1974 (Jakubiec 1985), the only information (coming from a few years earlier) about a White Stork killed by a man involved a fisherman (Szymura & Walasz 1985). Similarly, a fish farm guard was responsible for the only documented case of stork shooting in 1984 in the Province of Łódź, and other cases reported in 1974, 1978, and 1984 were also associated with fish ponds (Wojciechowski 1992).
Another social group that persecuted White Storks in the 1930s were hunters, especially in Upper Silesia (Wodzicki 1933, Czudek 1935) and in the Province of Lwów (Wodzicki 1935). Beliefs about storks’ harmfulness for the game have been based both on oral traditions, and (though nowadays less frequently) on irresponsible publications (not only by specialized hunters’ publishing companies), which are often far from being matter-of-fact or credible. This occurs even today, despite more than century-long efforts to debunk these false beliefs through publications based on reliable evidence (e.g., Wodzicki Kaźmierz 1877, Wodzicki Kazimierz 1933, 1934, 1935, Czudek 1935, Sokolowski 1958, 1972, 1992, Brehm 1962). Unfortunately, unreliable information is still promoted. For example, a high-circulation Polish edition of Vilček and Berger (1987) claims that White Storks feed on helpless nestlings and little hares, listing them in one sentence with frogs, rodents, and insects, whereas scientific research shows that even though storks may eat other birds and young Hares *Lepus europaeus*, such cases are highly unusual (Pinowski et al. 1991, Antczak et al. 2002, Kosicki et al. 2006, Profus 2006).

In the 1990s the Polish public television played a negative role in changing people’s attitudes toward storks, when it publicized a single, unconfirmed case of an adult White Stork feeding on poultry. The news evoked huge public response (PTPP “pro Natura”, Dolata unpubl.). Such cases are occasionally reported in ornithological literature, but these reports are usually very old (Wodzicki 19877) or based on unverified villagers’ accounts (Wodzicki 1935, Szymura & Walasz 1985, Piotrowska 1997), hardly ever supported by specific, personal observations by the researcher (Czudek 1935).

The most recent threat: Media image of avian influenza

A much stronger negative factor, one that applies to the general society, has been the recent (spring 2006) fear that wild birds, including storks, may transmit avian influenza – a disease caused by the H5N1 virus – to poultry and to humans. Actively fueled by the mass media, the fear sometimes produced symptoms of mass hysteria. However, for the time being it is impossible to assess how much this hysteria has harmed storks in Poland. Destroying nests is generally banned in Poland (by the Minister of the Environment’s order of September 28, 2004, art. 6, section 5), and is allowed only exceptionally, when three conditions are met simultaneously (art. 7, section 2): between October 16 and the end of February, when located on buildings or in green areas, and for safety or sanitary reasons. In any other situation destroying nests is punishable, so the offenders obviously would not report these cases. However, such signals came from various locations in Poland, passed on by the media and by ornithologists (Antczak 2006).

Active protection of storks – nest platforms

Poles’ affection for the White Stork has been reflected not only in its conservative protection. It was perhaps the first bird species in Central Europe to be afforded large-scale active protection. Originally, it involved mainly construction of various types of nest platforms (such as harrows, wheels, wooden crosses, etc.). This custom has survived through centuries and is still alive today. First quantita-
tive data about the scale of such help were reported by Wodzicki (1934, 1935) and by Czudek (1935). A survey conducted in 1934, in the then Polish part of Silesia, found about 193 stork nests established by people and only 18 (8.5%) built by the birds on their own (Wodzicki 1934). A much more thorough study conducted in the same year by Czudek (1935) found that in the sample of 260 occupied nests there were only 21 (8.1%) natural ones. A survey conducted in the same 1934, in the Province of Lvov (which is now only partly located in the south-eastern part of Poland), found just the opposite – information was gathered about 862 man-made nests and 6087 nests built by storks on their own (Wodzicki 1935). In 1937 in the districts of Leszno and Kościan (in the region of Wielkopolska), as much as 62.3% of all nests were built in trees, while nests built in trees by storks themselves, unaided, were an exception (Ołtuszewski 1937).

It should be emphasized that the massive scale erection of stork nest platforms had occurred long before the species became a focus of interest for wildlife conservation organizations, state authorities, and the mass media, and the platforms had been built by ordinary Polish villagers – by their own effort and out of their pockets.

In the post-war period the need to erect such platforms emerged especially in the 1960s and 1970s, when the law (the Fire Safety Act) banned covering roofs with flammable materials, such as straw or reed (see above).

It was only in the 1990s when intense efforts for erecting stork nest platforms were initiated by the newly established environmental NGOs, especially the Polish Society of Wildlife Friends “pro Natura” which has carried out a national Program for Conservation of the White Stork and Its Habitats (Guziak & Konieczny 2006), but also other organizations, e.g., the Naturalist Society “Stork” (Kaluga 2006a, b), the North Podlasie Society for the Protection of Birds, the Polish Society for the Protection of Birds, and the Lublin Ornithological Society (Piotrowska 2006). However, “ordinary” people still make a substantial contribution to the protection of the species.

It should not be overlooked that for the past 50 years the Polish law has failed to solve the problem of the White Stork (a species being subject to strict protection by the state) causing some damage when nesting on and near farm buildings, such as soiling roofs and fences with feces, tree branches, and pellets, damaging roofs, posing a threat of a roof collapse (when a nest is too heavy), etc. A vast part of the financial burden of repairing such damage is carried by villagers, just like the cost of nest restoration (i.e., reinforcing the structure, pruning tree branches, and erecting nest platforms) in most Polish regions; only few local governments participate in such efforts (Guziak & Jakubiec 2006, Jakubiec 2006, Piotrowska 2006, Wuczyński 2006, Dolata unpubl.), and support provided by NGOs depends on uncertain and irregular subsidies.

The problem of nestling mortality caused by pieces of string

Since the 1980s, with the growing popularity of plastic (polypropylene) string in farmers’ field work, large numbers of adult White Storks have been carrying pieces of string from the fields to build them into the nest structure. When moving in the
nests, stork nestlings may get entangled in the free ends of such string pieces, usually be their legs (or, less often, by their wings) (see Kwieciński et al. 2006).

Cases of entanglement and resulting death of nestlings in Poland were first reported by Profus (1993) and Ptaszyk (1994). In 2004 pieces of string were one of the main two causes of anthropogenic brood losses in the White Stork population in Poland (Guziak & Jakubiec 2006). Efforts to reduce this threat have included a broad information campaign among farmers and rural youth (leaflets, brochures, lectures, and press articles), organized actions of picking up string pieces in the fields by school children (Szulc-Guziak 2006, 2006a), as well as pulling pieces of string out of stork nests and freeing entangled nestlings by ornithologists (Ptaszyk 1997, Dolata 1998, 2003, Guziak & Konieczny 2006).

Providing care for disabled and injured storks

White Storks are also among the bird species that are most likely to be provided with care and protection in cases of accidents, injuries and disability. Such cases, occurring in the region of Cracow, were reported already in the 15th century, by Jan Długosz in his Annales seu chronicae incliti Regni Poloniae (1455–1480).

Today reports about injured or disabled storks constitute the largest proportion of all interventions reported by Poles to wildlife NGOs (e.g., Kaluga 2001a, 2001b, Dolata unpubl). Moreover, White Storks are among the bird species that are most likely to be brought to rehabilitation centers, such as the Bird Asylum at the Warsaw zoo and the Poznań zoo. In many cases, after treatment and rehabilitation, these birds go back to the wild (e.g., Kruszewicz & Krawiarz 1998, Kruszewicz et al. 2004, Ćwiertnia et al. 2006, Kaluga 2006a, 2006b).

Threats to habitats and habitat protection

Broad protection of valuable wetland habitats is critical for successful conservation of the White Stork’s habitats. Unfortunately, state and local authorities tend to subordinate wildlife conservation to economic interests, even in places where the natural environment deserves special protection. Obviously, this tendency is far from optimistic. This occurs despite the fact that wildlife conservation is guaranteed by superior legal acts, starting from the Constitution of the Republic of Poland. There are, however, examples of efforts to protect or re-naturalize the White Stork’s feeding sites in various regions of Poland (Guziak & Konieczny 2006). A more important positive contribution seems to be made by the recently introduced system of direct EU subsidies that makes mowing meadows obligatory, which helps to maintain storks’ feeding sites and, periodically, facilitates their feeding. On the other hand, large scale state subsidies for the afforestation of post-agricultural lands are harmful for the White Stork, because they often apply to areas which were previously utilized as meadows or pastures.

The history of the White Stork legal protection in Poland

Legal measures concerning animal species protection are relatively new. When Poland was partitioned and occupied (1795–1919), the legal systems of the invaders (Russia, Prussia, and Austria) were imposed onto the occupied territories. Regula-
tions introduced in 1875 in Germany should be mentioned among the legal norms that directly affected the White Stork. We should bear in mind, however, that in 1921 the same nation provided the stork with legal protection in the Kingdom of Prussia – then a part of the German Reich.

The territory occupied by Austria (known as Galicia) was the first Polish region to have adopted legal regulations concerning modern animal species protection – regulations based on scientific evidence and applying to the whole society, with no exceptions (erga omnes law), i.e., the statutory protection of the Chamois Rupicapra rupicapra and the Marmot Marmota marmota, established by an act of law by the autonomous National Convention (Sejm Krajowy) in Lvov, on October 5, 1868. Interestingly, these developments were co-initiated by Rev. Eugeniusz Janota, the author of the first Polish monograph on the White Stork (Janota 1876) and a promoter of the idea of protecting the species. After Poland regained independence, the first Wildlife Conservation Act was passed in 1934, but until the onset of World War II it was not supported by an appropriate executive order – an animal conservation order – which would provide actual protection for the White Stork.

After World War II the legal status of the White Stork has been regulated by several acts of law (ministers’ orders of 1952, 1983, 1995 and 2001).

The White Stork legal protection in Poland: Current status

Today, the fundamental legal measure concerning wildlife protection in Poland is the *Wildlife Conservation Act of April 16, 2004* (Journal of Laws, No. 92, item 880), whereas the protective status of individual species is determined by the related *order of the Minister of the Environment of September 28, 2004, on wild animal species subject to protection* (Journal of Laws, No. 220, item 2237). According to this regulation, the White Stork is subject to strict protection, which means that it is forbidden to kill or scare storks, to destroy stork nests, eggs, or nestlings, and to detain these birds. This conservation status, however, has been significantly weakened by article 8 of the same order, which provides that the general bans shall not apply to “the performance of activities related to the conduct of reasonable agricultural, forest or fishery management, if the work technology makes the bans inapplicable”. Threats stemming from this exception are related to the imprecise (and, consequently, broadly interpretable) concept of reasonable management and to the lack of clear boundaries of the exemption (see Dolata 2000b). Some strengthening of the species’ protection status has been achieved through a recent order (art. 1, section 1, and annex 1, item 198) which lists the White Stork among animal species that require active protection, and is the first Polish act of law to include such classification.

Legal categorization of acts against White Storks in the criminal law

Any violation of the bans imposed by the above mentioned order is an offence against art. 127, section 2e of the Wildlife Conservation Act. This is a formal offence, so it is committed whenever a person violates the regulation, regardless of whether or how much the act has actually harmed the protected species.
Punishable acts against White Storks and how they are combated

Poland

Intentional killing of White Storks is extremely rare in contemporary Poland. Back in the years 1972–1987 intentional destruction of nests and eggs or nestlings by people was the cause of 5.7% (14 cases) of losses at the hatching stage and of 1.9% (6 cases) of losses during the nestling period (Jakubiec 1991). As far as adult storks and fledglings are concerned, back in the years 1970–1987 intentional killing by people was the cause of 0.9% of losses (Jakubiec 1991). No such cases were reported in the studies conducted in Upper Silesia between 1994 and 2004 (Profus 2006). The report from the International White Stork Census of 2004 in Poland (Guziak & Jakubiec 2006) mentions only isolated cases of destroying nests with nestlings, without specifying, however, whether those acts were committed by humans (Antczak 2006, Indykiewicz 2006, Piotrowska 2006) – except for one specific case in the Province of Warmia and Mazury (North-Eastern Poland), whereby a man destroyed one nest and took the eggs from another (Molewski & Jakubiec 2006). Back in the 1980s there were reports about people taking eggs from stork nests. Such cases, however, were insignificant causes of brood losses (Radkiewicz 1989). Today such cases are no longer reported (Guziak & Jakubiec 2006, Profus 2006).

Although the previously cited data from the 1960s come from a period when legal protection of the White Stork was essentially the same as it is now, in today’s Poland cases of intentional killing of storks and destroying eggs or nestlings are definitely less frequent, perhaps even marginal. I would associate this fact with large protective campaigns carried out in the 1990s by wildlife NGOs (mainly by the Polish Society of Wildlife Friends “pro Natura”), which were particularly visible in schools (Szulc-Guziak 2006, 2006a) an in the media. Finally, the free, commercial, and often aggressive mass media have become a real plague to stork persecutors. Notably, the media’s interest in wildlife and, specifically, in White Storks, is an obvious reflection of the general public’s interest.

Only recently, under strong social pressure, including efforts by NGOs and the media, punishable acts against storks have begun to be prosecuted in accordance with the law (e.g., Dolata 2000a). In a broadly publicized case, a criminal charge was filed against a film-maker who, on April 24, 2000, when producing a film to promote Poland at EXPO 2000 in Hamburg, attempted to shoot White Storks in flight and to reach this goal intentionally scared hatching storks in a colony in Żywkowo (North-Eastern Poland), making 4 or 5 stork pairs abandon their hatches and leave the colony (W. Kania, pers. comm.).

Legal protection of the White Stork as compared to other protected species in Poland

The scarcity of serious offences against storks may seem to suggest a high level of observance of bird species protection by the Polish society. Unfortunately, this is definitely not the case. Other bird species having the same legal status as the White Stork, frequently fall victim to offences against species protection. This is particularly true for birds of prey Falconiformes (see e.g., Fruziński & Grudziński
Many species in Poland are hundreds of times rarer than the White Stork, e.g., the Golden Eagle *Aquila chrysaetos* or the White-tailed Eagle *Haliaeetus albicilla* (Głowaciński 2001, Tomiałojć & Stawarczyk 2003). Therefore, wildlife damage – as defined by the criminal law – caused by killing birds representing any of these species, is relatively larger. Consequently, the potential sanctions (punishment) for killing rare birds of prey should be more severe than for similar offences against the White Stork. The just mentioned high incidents of acts against these bird species suggest that the binding legal measures are frequently violated. Since the White Stork and birds of prey have the same legal status (and potential punishment for killing rare birds of prey is more severe) and yet offences against birds of prey are many times more frequent, this implies that it is actually not legal measures that protect White Storks in Poland. If, however, legal norms are not effective deterrents to violations against other bird species with the same legal status, we may reasonably conclude that these regulations do not discourage people from performing similar acts against storks. Undoubtedly, the scarcity of such offences against the White Stork is related to the species’ traditional, special status in Poland.

**Destroying nests**

In any case, intentional nest destruction in the hatching and nestling periods has been an obvious offence, easy to detect and prove. However, there have been no reported cases of prosecuting or punishing people guilty of this offence. Instead, there have been reports about villagers protesting against the destruction of stork nests by power industry workers or even defending such nests actively (Dolata unpubl.). The problem of destroying stork nests built on power pylons was raised in 1989, importantly, not by a low-circulation, scientific publication, but in a trade magazine for the power industry (Jakubiec 1989). Since mid-1990s the problem has been largely and systematically solved through a program of moving nests that have been built directly on pylons to specially designed platforms. The program has been carried out by various power companies (e.g., Ćwikowski 1996, Hordowski 1996, Piotrowska 1997, Jakubiec & Guziak 1998, Guziak & Jakubiec 2006, Guziak & Konieczny 2006, Dolata unpubl.).

This attitude change observed within the power industry may have resulted from:

- a general rise in public interest in the species (mainly through media coverage), related to the 5th International White Stork Census 1994–1995;
- educational programs by environmental organizations (mainly by the Polish Society of Wildlife Friends “pro Natura”) targeted at power industry employees, i.e., publications (Jakubiec 1989) and training (Guziak & Konieczny 2006);
- considerable financial support for power workers’ stork-friendly efforts, offered by the EkoFundusz Foundation, via the “pro Natura” Society;
- power companies’ increased interest in positive public relations in the democratic, market-oriented Poland.
White Stork mortality on power lines

Up to now, however, no systematic solution has been found to the problem of indirect killing of storks, i.e., cases of White Storks getting killed by power lines and traction equipment. This issue was raised already by Czudek (1935), who studied storks in Silesia – Poland’s most industrialized region and, consequently, one that was wired up most heavily. For the relatively small Silesian stork population, he reported 17 cases of storks, including 15 young birds, getting killed by power lines. In the 1970s such cases were rarely reported in publications presenting the results of direct field checks conducted within the 3rd White Stork Census in 1974 (Szewczyński 1985). This however, may have resulted from the essentially different orientation of those studies. Based on field observations, survey data (mainly from the above mentioned 3rd Census), and information about ringed birds, Jakubiec (1991) concludes that between 1970 and 1987 collisions with power lines caused as much as 74.5% of all deaths of flying storks, diversified by age categories: 67% of fledglings and 52% of adult birds! Similarly, based on the results of stork ringing in Poland, Kania (1996) found that collisions with power lines and electrocution had killed 66% of fledglings, 54% of one-year-old birds, and 42% of older storks found dead in the country where they had been ringed. Just one pylon near Tarnobrzeg killed nearly 30 storks within a period of a few years (Profus 1993). Thus, it may be seen as a massive scale problem, and yet the state authorities have not made any attempt to reduce it through legal measures. Such a solution could involve obligatory installation of properly designed insulators, which would prevent storks and other bird species from getting killed (Profus 1993).

Some practical efforts to solve the problem have been undertaken only recently as local and incidental initiatives. It should be emphasized, however, that they have been carried out by environmentalists in cooperation with power companies. For example, in 1997 in a large White Stork colony in Mosty (the Province of Lublin, Eastern Poland), an overhead power line which carried 16 stork nests, was replaced by an underground one (Guziak & Konieczny 2006). Near the nature reserve “Drużno”, close to Elbląg (Northern Poland; the area of the Nature 2000 network), birds have been protected from sitting directly on power pylons and getting electrocuted by the installation of special platforms over the insulators (Połtrenko & Zagrodzki 2005).

In conclusion, it should be stressed that when considering all the above mentioned threats and solutions, we must remember that the White Stork is a migratory species, so it is equally affected by the situation, threats, and protective efforts faced during migrations and at winter sites (e.g., Schulz 1998, Schaub et al. 2005).

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