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A guide to the protection of the white stork

Polskie Towarzystwo Ochrony Ptaków

Towarzystwo Przyrodnicze „Bocian"

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I. INTRODUCTION

When writing the project for the protection of the white stork for the LIFE fund, we decided that an extremely important action that needs to be included in its framework, is training a wide group of stakeholders, consisting of employees of local governments, energy companies, veterinarians, members of volunteer fire brigades, ornithologists, i.e. people who in their work encounter problems connected with this species every day. In order for the knowledge gained at these meetings not to be forgotten, and that it could also reach a wider audience, we made a decision that it should be perpetuated, and the best solution for this is to create a handbook containing all the most important issues. Imagine our surprise when it turned out that such a study already exists! It was created in 2012 by our friends from the Wildlife Society "Stork". Then, why reinvent the wheel. We asked them if it were possible to complete and reprint the study, as it seemed to us the most appropriate and natural solution. We obtained consent, for which we are extremely grateful and we would like to extend our thanks to them.

The handbook you are holding is a well-written compendium of knowledge, created by experienced specialists: ornithologists, officials and veterinarians, who often combine these professions. This guarantees that the presented topics are widely analysed and contain a set of best practices. Here, you will find everything that thus far required painstaking research in literature, the Internet, or the need to reach a specialist in a given field – from the construction of a nesting platform, through helping the injured and sick birds, legal issues, to wintering storks.

Enjoy!

The LIFE project team
The Polish Society for Bird Protection

The white stork – one of the symbols of the traditional Polish agricultural landscape. Photo: MR

II. THE WHITE STORK – GENERAL INFORMATION
ALEKSANDRA WIERZBICKA

In the world, the majority of white storks nest in 6 European countries: Spain, then in Poland, Ukraine, Belarus, Lithuania, and Latvia. According to data from 2014 collected during the 7th International White Stork Census, 42-43 thousand pairs nested in Poland. Although the white stork's area of presence covers all of Europe as well as parts of Asia Minor and Africa, it is in these few countries that a significant percentage of the world's population nests. Therefore, the pride and joy of people having "bocieńce" (nests of the white stork) on their property is not surprising, and neither is the keen interest of many people in helping storks. However, in order to protect it effectively, you need to have knowledge about the species, so you should learn a little more about the biology of the white stork.

The first storks may appear in Poland already at the end of February, although spring arrival generally extends between the third decade of March and mid-May, with the majority of storks returning to their nests before the 10th of April. The beginning of laying eggs falls on the first decade of April and the last eggs from late broods may be made laid as late as in early June. Only sexually mature storks breed – usually these are birds that are more than 4 or even 5 years old. The size of the brood may range between 1 and 7 eggs, though usually it is 3-5 eggs. The young hatch after about 33 days of incubation. Still about 60-65 days pass before

Even reptiles are a component of the white stork's food – here: stork swallowing a grass snake. Photo: TK

the first flight trials, during which adult birds take care of the offspring, providing them with food, if necessary, heating them with their own body or blocking the scorching sun or pouring rain with their wings. Usually, one stork pair delivers 2 or 3 young, less often 4. In years that are rich in food, broods with 4 young are more frequent. In favourable seasons, broods with 5 young are not rare, and exceptionally even with 6 young. Young storks are easily distinguished from adults by noting the colour of the beak, which in chicks is initially grey-black and becomes redder with age, but it is a red with a dark covering, not the juicy colour occurring in adult birds.

A firmly sited nest is not enough to deliver a happy brood. The presence of feeding grounds rich in food in the vicinity of the nest is extremely important; these are mainly wet meadows, pastures, reservoirs and water courses, and periodically also cultivated fields. Contrary to what may seem, frogs and other amphibians are not always the basic diet of storks. The white stork is called a food opportunist, that is a species which hunts mainly for food that is most easily available and most present in the environment. Therefore, it appears that amphibians are an important component of stork's food in early spring, and later these birds catch various insects (e.g. grasshoppers), other invertebrates (e.g. earthworms) but also rodents (mostly voles), carnivorous mammals (including moles), and even reptiles (lizards, snakes). They also do not sniff at young birds, for example nestlings of northern lapwing.

There is a known August habit of storks, during which they gather in places of common feeding. This behaviour is associated with migration to the wintering grounds, which storks take up more or less in mid-August. Birds that breed late may at this time still be feeding the young, so they begin their departure as late as September. Storks nesting in Poland, migrating to Africa, choose the eastern route – via Turkey and the Bosphorus. Whilst storks from Western Europe fly over Spain and Gibraltar. The birds take advantage of the warm, ascending air currents that form over land. The annual journey of the "Polish" stork to and from wintering grounds is long (around 8 thousand km one way) and dangerous. Many of them get killed during the journey as a result of collision with overhead power lines, exhaustion caused by passing over the desert in adverse weather conditions, and even due to hunting which is still practiced in southern European countries (e.g. Malta, Cyprus) and, in particular, the Arab countries (Lebanon, Syria, Oman) – approx. 60% of individuals do not survive the hardships of the first journey.

Young storks have a beak with a grey-black covering. Photo: MR

III. PROTECTION OF NESTS – NESTING PLATFORMS
ADAM TARŁOWSKI

Since the late 1980s, when organized actions relating to the protection of stork nests were undertaken in Poland, thousands of nesting platforms have been installed for these birds. The functionality and durability of various types were tested in practice. Depending on the mounting site, there are currently two basic models of platforms used:

1. Universal wooden platform made of posts, which is mounted on: standalone wooden poles, trees, roofs, and other structures.

2. Universal metal platform, which is mounted on concrete power and telecommunication poles, standalone concrete pillars, and other structures.

The following sections describe in detail the method of making and using these types of platforms.

III. 1. WOODEN PLATFORM

It is a simple structure with a diameter of approx. 1.2 m, which can be made by any adult who can handle a shave, axe, hammer, hand saw or chain saw, and pruning shears.

Material: pine (larch, spruce) posts and poles debarked freshly after cutting, with a diameter of 7-12 cm, steel nails 5-7 inches long, flexible branches for the wicker crown with a diameter of 0.5–1.5 cm, string or wire.

Description of making: Debarked posts are nailed to two solid (min. 10 cm diameter) transverse posts. It is important that in the central section there are also at least three solid posts placed, which nailed close together provide structural reinforcement. Other posts are located at a distance of 5-10 cm from each other. The octagonal shape of the platform is obtained by cutting the tips of the side posts from the floor. At the edge of the platform there are perches nailed alternately – thanks to them, a side rim is created, to which the wicker crown is attached. A properly made platform, using the rim and crown, has a depth of over 20 cm, which makes it easier to fill later with lining. Due to the fact that the platform is made from fresh (wet) posts, it will be quite heavy, so to facilitate working at a height it is good to leave it to dry in a ventilated area, e.g. under a shelter or a temporary cover.

Advantages:

- low cost of making with easily available materials;
- it is easy to put nails in fresh and dried pine posts, in contrast to hard wood species (e.g. oak, locust), which is important when working at heights;
- easy mounting on trees – thanks to the possibility of fitting the platform e.g. to the existing embranchment of the trunk, by cutting some of its elements;
- high strength and durability of the platform in the case of being taken by the birds and building a nest, shielding the structure from water. A platform made of posts does not require impregnation, unlike planks or patches, which quickly absorb water and undergo decay.

Disadvantages:

- when the platform is not taken by the birds, is not covered by a nest, it undergoes destruction or decay after approx. 6-8 years and requires replacement.

Wicker crown is a "roller" made of wicker, with a diameter of 20-30 cm attached to the rim of the wooden or metal platform with strings. It is made of flexible shoots of trees – willows are best suited for this purpose. Its function is to increase the rim of the platform and to make it possible to place a sufficient amount of lining on the platform. The structure of the crown also makes it possible to protect the lining against falling out (which may occur e.g. when setting up the pole), and against the lining being blown away by the wind in the period before the arrival of storks. The lining is secured by interweaving several or more willow shoots through the crown, so that their ends pass through it, and thereby press and immobilize the lining.

Lining of the platform is a very important element, the omission of which can discourage the storks from occupying a new nest. We can apply here material from the old nest or, if it's not available, use branches, straw, hay or couch grass and lay a turf on top – tightly and with the roots up. Turf prevents the material from blowing out of the nest until it is occupied by the birds. In the absence of turf, e.g. during heavy frosts, you should protect the lining by pressing it with branches interlaced through the crown. A platform filled with lining, without clearances, with compacted turf on top resembles a natural stork's nest, in which an earth floor is formed after breeding.

Ready nest with lining. Photo: AT

Inserting lining on a metal platform installed on a power pole. Photo: AT

III. 1. 1. MOUNTING A WOODEN PLATFORM ON A STANDALONE WOODEN POLE

In Mazovia the most commonly used are teletechnical poles with a wooden platform made of posts nailed on top, on the bottom bolted with steel clamps to a concrete stilt dug into the ground. In most cases, the height of the pole amounting to 7-8 m is sufficient. Remember, that the higher the pole and the heavier the nest, the greater the stresses occur in the lower part of the pole and stilt. They can sometimes lead to breaking the structure.

For placing the platform, teletechnical poles impregnated by pressure and vacuum method are used, which are still produced. The recommended dimensions with a pole that is 7 m tall are: nominal diameter of 1.5 m from the base – 20 cm, diameter of 0.6 m from the top – 15 cm. A properly impregnated pole has all the white spots coloured with impregnation, reaching up to the naturally resin-impregnated heartwood. Posts that are painted or just immersed in impregnate, which in this case does not seep deeper than 1 cm, are not suitable for mounting heavy nests, and usually break after several years.

Wooden pole on a concrete stilt with a platform. Photo: AT

The method of mounting a universal nesting platform on a wooden pole. Photo: AT

The platform can be mounted before setting up the pole, nailing it to its slightly raised tip, or after setting up and stabilizing the pole in the ground, using the aerial platform. Remember about the importance of making four diagonal supports, nailed approx. 15 cm from the rim of the platform. Short perches nailed to the bottom of the platform serve only to centre it on the pole and make the mounting easy, but are not sufficient to stabilize a heavy nest. The mandatory lining can be put into the nest after nailing the platform to the pole, before it is set up, securing it with branches woven in the crowns (see: "Lining of the platform" in chapter III. 1.).

III. 1. 2. SETTING UP A POLE WITH A PLATFORM

Setting up a pole with a tractor. Photo: AT

Setting up the poles is best left to skilled workers who use a crane or specialist vehicles – so-called pole-setters (i.e. a crane with earth auger), however with sufficient knowledge and experience you can set up poles using an agricultural tractor, off-road vehicle, horse and buggy, or manually. In times of massive use of this type of poles for the construction of overhead lines, the pole was set up by a brigade of three workers, with just a spade, a hand winch, and a system of ropes and supports.

When setting up poles on your own, you must be particularly careful: do not let unauthorized persons in the vicinity of the works – especially when lifting the pole, use undamaged ropes of adequate strength, and in places of difficult access, rent a crane or change the location.

When setting up a pole on your own, you must be sure that you have a sufficient amount of space required to safely carry out the action, provide space for the

vehicle towing the rope and for people holding the stays. The rope setting up the pole must be at least 3 times longer than the height of the pole, two ropes for the stays should be at least 2 times longer than the pole.

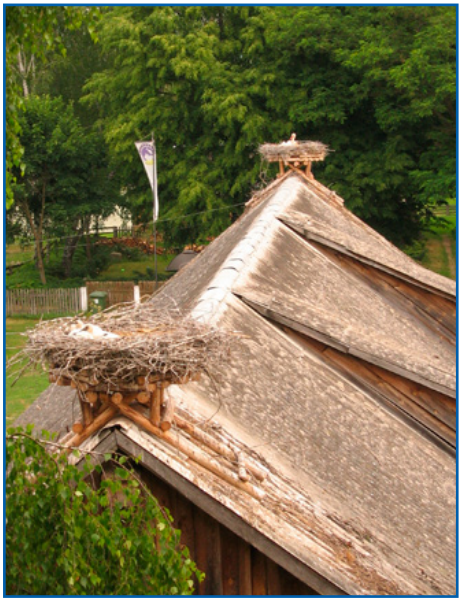
After mounting the whole structure, dig a hole with a specific section, making it easier to set up the pole. A rectangular trench with a sloping bottom should be made with the width slightly greater than the width of the concrete stilt. In the place where the pole is to be set up, dig up soil to a depth of approx. 1.5 m, making a vertical wall of the trench, but from the side from which we will put the pole in, the bottom of the trench should be sloped or stepped. Next to the vertical wall of the trench set up a board that will protect the wall of the trench against being damaged by the stilt. In order to facilitate setting up the pole, you can make a trench up to 2.5 metres long. Thanks to this, once the stilt is inserted into the trench, the heavy stilt outweighs the pole causing the pole tip with the platform to lift up.

Then, mount the ropes used to set up the pole as high as possible, preferably just under the diagonal platform supports. After fixing the ropes, you must additionally lift the pole, supporting it with the use of previously prepared supports. Lifting the tip of the pole over the ground will make it easier to set it up. Preferably, if at this point the stilt already rests with its bottom part on the bottom of the trench. After attaching the rope to the vehicle, move slowly, pulling the rope, while two people hold two side stays and control the tilt of the pole sideways.

Stepped trench making it easier to set up a pole. Photo: AT

After setting up the pole, without loosening the ropes, you can begin to backfill the trench. Thanks to the small width of the trench, the pole virtually stands on its own and may only slightly tilt from side to side. After backfilling about half the depth, make a final check whether the pole is vertical (if necessary, adjust the tilt with the stays), then thicken the soil in the trench, by compacting it, adding rubble and stones. In wetland areas, transverse concrete elements are inserted in the rectangular openings in the concrete stilt, in order to further stabilize the pole. After completing the works, detach the ropes using a ladder.

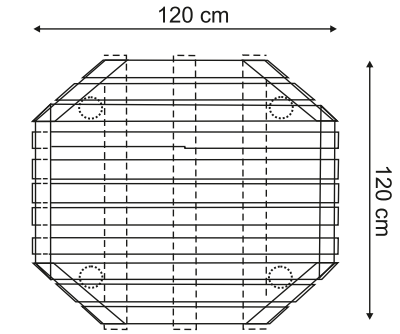
III. 1. 3. MOUNTING A WOODEN PLATFORM ON A ROOF

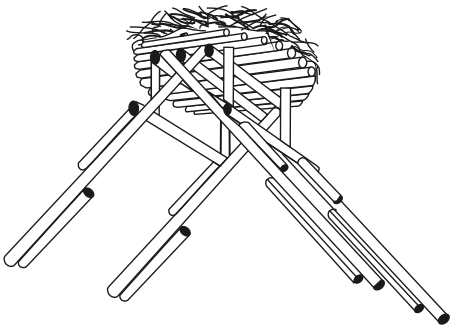


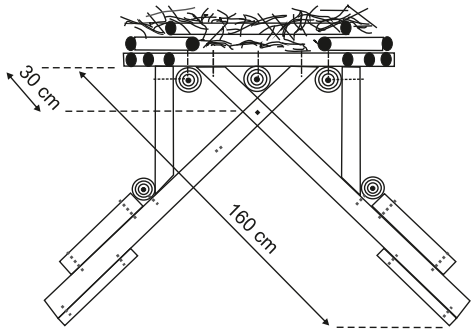
Wooden platforms on a roof in Pentowo. In places with rich feeding grounds storks sometimes nest in colonies. Photo: AT

Before mounting, make a double cross of posts, on which the platform will be installed. The cross, leaning against the roof, has frequent contact with water, so to extend its durability, it is best to make it with posts that have a min. diameter of 10 cm. The structure is nailed on the site or prepared in advance, using screws with a diameter of 10 mm for screwing the supports, which will make it possible to transport the cross in an assembled form. Before mounting the structure, measure the slope of the roof. It can be done using two connected, thinner perches/boards, or by attaching the first cross to the roof and blocking its opening in the appropriate position. On the ground we map the angle of the roof on both crosses, nail the structure together and place the platform on the connected crosses and obligatorily block with 4 vertical supports, which prevent the nest from tilting. The spacing of the crosses must be about 1/3 smaller than the diameter of the nest so that the structure with vertical supports is protected from the rain, which will ensure its durability. On roofs made of asbestos or roof tiles and with a raised ridge, we nail additional perches to the bottom side of the crosses, in order to lift the structure above the ridge. We adjust the spacing of the crosses to the spacing of the indentations in the corrugate plate or roof tiles.

We place the whole structure on the roof, lowering it with the help of an aerial platform – this is the most convenient and safest way of mounting. Mounting the roof platform without an aerial platform requires nailing it together on the roof, which is tedious and dangerous, but it's possible for people trained to work at heights. After placing the platform on the roof, we pad it with lining (see: "Lining of the platform" in chapter III. 1.).







Schematic construction for the roof of a building along with a universal wooden platform.

Advantages:

- mounting a roof platform enables distribution of the nest weight on a larger surface area of the roof. In cases when the birds bring too much material for the nest, it can be efficiently and safely relieved without the risk of the nest falling;
- it is easy to build with cheap and easily available materials.

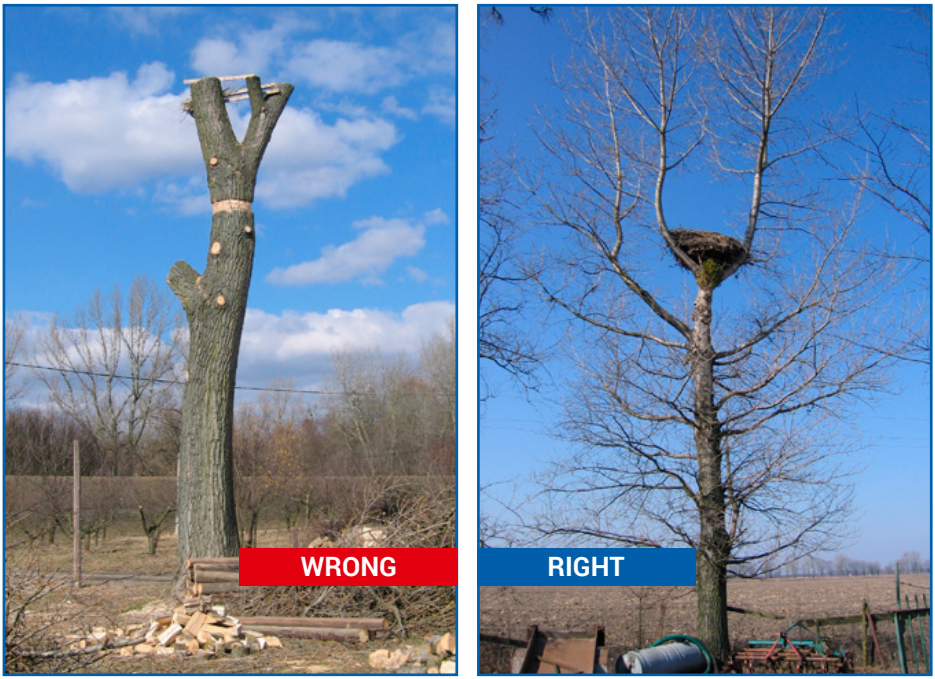
Possible errors:

- lack of vertical supports;
- building the structure using too thin elements;
- advancing the vertical supports outside the outline of the nest and too wide spacing of the crosses, which causes leaking and decaying of the posts and consequently weakens the structure and there is a risk of the nest falling.

III. 1. 4. MOUNTING A WOODEN PLATFORM ON A TREE

Trees are a natural nesting place of the white stork, so it is worth protecting the already disappearing phenomenon of birds nesting in such locations. They constitute an important part of the traditional rural landscape. Natural nests (built from scratch by birds) are often constructed on dry, dying trees, broken by the wind or with a crown that make it possible to build the nest – flat (e.g. pine) or having a natural embranchment of the trunk. People have long been helping storks nest on trees – in the spring, after having observed the birds circling above the farm, a farmer would climb the tree, trim the tip and mount a makeshift platform. Often it was an old harrow, a few branches, a cart wheel, and recently tires. Probably most nests on trees in the vicinity of human settlements have been made like this. On the basis of many decades-old nests, today we can find elements of the first platforms rooted in the trunk of the tree.

When commencing works related to stork nests on trees, our goal should be to reconcile the interests of the birds with the physiological needs of the trees – according to the principle of not harming one element of the environment in order to save another. Because very often we can see e.g. a tire put over the top of a poplar freshly stripped of the branches. Doing so leads to the rapid death of



Good and bad example of shaping the tree structure for the needs of storks. Photo: AT

the tree, and consequently, to the shortened functioning of a potential nest. In the case of stronger trees, pollarding causes a strong regrowth of shoots, which quickly prevent the storks from using the platform. Furthermore, in accordance with the law, pollarding trees with a natural structure is currently prohibited. **The recommendations listed below discuss the problem in a nutshell, they can help people wishing to install a nest on a tree, but the issue of proper cutting and shaping the crown of a tree is so broad that it is best to entrust this task to a reliable horticultural company specializing in tree care.**

During all treatments that interfere with the crown of a tree, you should stick to several rules:

- reduce to a minimum the removal and cutting of living branches;
- remove up to 30% of weight of living branches in one go, and optimally 15%;
- avoid removing branches with a diameter of more than 10 cm;
- cut off thicker branches and boughs in a way that doesn't cause fractures and tears in the bark, do not damage roots of living branches when cutting, do not damage the natural ring when removing dead branches;
- while working in the crown, make sure not to injure the tree with falling boughs or the basket of the aerial platform;
- remember that different species react differently to cutting: some tolerate it well and quickly regenerate, others do not;
- use, if possible, random events such as a fracture or withering of the tip, on which, after shortening, the platform can be placed;
- often platforms are installed in places from where old nests fell or had to be removed, because they posed a danger;
- use horticultural knowledge for shaping the tree structure, in order to minimize the need for recurrent cutting of branches overgrowing access to the nest;
- after mounting the platform and making the necessary cuts, the tree should continue to have a structure similar to natural, as well as normal health (i.e. it should not wither afterwards);
- if mounting the platform requires the removal of more than 30% of the live weight of branches – look for another tree or set up a pole with a platform.

A wooden platform on a tree should be mounted in a place that guarantees its long and safe functioning – the future nest should be firmly supported on the tree boughs. The platform is best installed in an embranchment of the trunk, and if we cut the tip, just below the platform live branches should remain – in the future, the nest will rest on them. Due to the fact that the platform is made of posts, you can, by cutting some of its elements, adjust it to the local conditions. When locating a platform on a cut tip, you should make it possible to introduce several or one branch over the nest in the future. It will take over the function of a guide, thus inhibiting strong regrowth of the buds "sleeping" below the place of cutting and overgrowth of the nest. Do not mount the platform of the portion of the trunk which is devoid of living branches. Such a trunk shall wither and decay in the future, and a heavy nest shall lead to its breaking. The centre of gravity of the platform and nest should coincide with the vertical axis of the tree or the centre of embranchment.

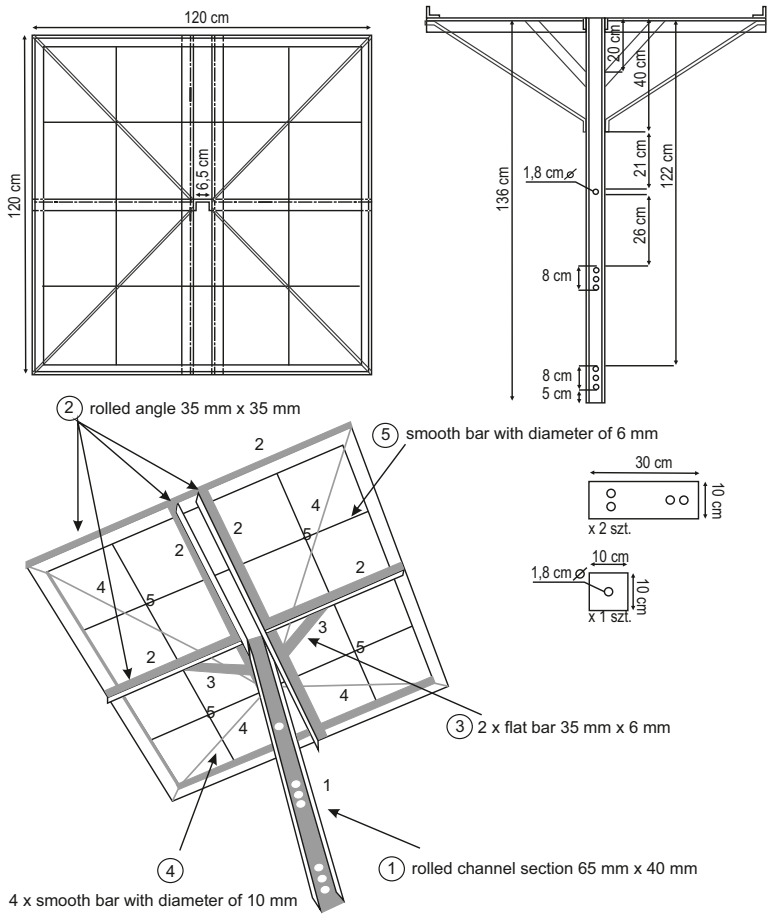
Nesting platform supported on the trunk and living branches. Photo: AT

The platform should be nailed with the right length of nails – it is best when they reach the heartwood of the tree. The sides of the platform protruding more than 30% beyond the outline of the trunk or branches supporting it should be additionally supported with nailed poles. The lack of such supports leads to the tipping (tilting) of a seemingly stable platform. This happens particularly during strong winds. It is not recommended to use ropes and wires for mounting the platform, as they later carve into the tissue of the growing trees. Remember that the nest can grow over time to a height of over 1.5 m and achieve considerable weight. Nests on trees are placed at different heights, and everything depends on the local conditions. You should try to place the nest at a height of min. 8 m. Occasionally there are nests placed low, sometimes at arm's length, which speaks for the high plasticity of storks. However, do not encourage these birds to build nests at low heights.

Just like in other cases, after mounting the wooden platform with a wicker crown on a tree, pad it with lining and secure it against being blown away by the wind.

III. 2. METAL PLATFORM FOR MOUNTING ON CONCRETE POWER POLES

It is a steel structure made of a channel section, angle, flat bar and plain rods with suitable thickness. The dimensions of the base of the nest are 120 cm x 120 cm, the length of the platform leg used to fasten it to the pole is at least 136 cm. In the leg there are holes with a diameter of 18 mm, with a spacing that makes it possible to mount on both "A" type straddled poles as well as single or twin "I" type poles. Mounting the platform on "A" type poles consists in sliding the leg into the wedge from the top and immobilizing the platform, turning it with the wedge using a set of 3 metal sheets. Mounting on "I" type poles consists in directly screwing



Metal nesting platform for mounting on power poles

the leg to the pole using screws with a diameter of 16 mm and the right length. The platform should be equipped with wicker crown, which facilitates padding it with lining (see: "Crown" and "Lining of the platform" in chapter III. 1.).

Mounting platforms on power poles can be performed only by persons with the proper permits, in cooperation with the manager of the network (read more in chapter: V.).

IV. PROBLEMS WITH NESTS
ADAM TARŁOWSKI

IV. 1. HIGH AND HEAVY NESTS

Such nests, exceeding the height of 1 m, bear the risk of the base collapsing (roof, tree, pole) or the nest slipping due to the gradual rotting and crumbling of its base.

Depending on the location of the nest, use various remedial measures, the first action should be to evaluate the risk and the possibilities of intervention. We can come across the following cases:

- If the nest is placed on a solid platform, the safety of which can be checked (confirmed), it is sufficient to remove the top part of the nest, leaving min. 30 cm of nesting material. This action will relieve the base of the nest.

- If the nest is on a tree or on a roof and there is no platform under it or the platform is decayed, and the nest has already tilted, an attempt to relieve it could lead to the whole nest sliding off. In this case it is best to immediately plan removing the nest and place a new platform.

- In the case of a heavy nest on a wooden or concrete standalone pole, it also should not be allowed to overload the

High and heavy nest that needs relieving.
Photo: AT

structure and take off excess material every few years if necessary. In the case of posts, often the first symptom of overload is their tilting. This is a sign for quick intervention, because leaving the post in this position can lead to its breaking. The tilting of poles often occurs on wet, unstable ground. If there are birds in the nest, temporarily set up stays or use additional supports, and outside the breeding season relieve the nest, and then straighten the pole. After straightening the pole, you can also thicken its base using rubble, stones and cement. Just straightening the pole without relieving the nest is not recommended, because the cause (heavy nest) should be eliminated and not just the effect.

- Nests higher than 1 m placed on power poles should also be relieved, because there are known cases of breaking poles and platforms.

The most preferred time for relieving nests is autumn – the nests are not frozen yet and accessing them with an aerial platform is easier than in winter or after the thaw. We carry out this operation using an ordinary or bent pitchfork, removing layers of nest material and throwing it to the ground. Sometimes using an axe is also necessary.

IV. 2. PROBLEMS WITH NESTS ON TREES

The most common problem in this case is that access to the nest is overgrown with branches. Apart from natural development of the tree, it is also affected by the method of placing the nest or platform. Often incorrect mounting of the platform on a too heavily trimmed tree causes massive sprouting of new shoots below the place of cutting. This is particularly the case on trees that are resistant to cutting and strongly regrow, such as poplar, linden, elm and willow. Avoid mounting nests on trimmed willow branches, because this species regrows so strongly, that it would have to be necessary to remove regrowth several times in the season.

The solution to the problem of overgrowing access to the nest is mounting platforms in the embranchment of the trunk and moderation in cutting older branches. If the entire nest is evenly surrounded with regrowing shoots, they need to be cut regularly. However, it is worth leaving a few shoots, which will slow down the regrowth of others. Another way is to shorten the shoots in the intended manner, so that the tree grows in places that do not make life difficult for the storks. For this purpose, we cut the branches just above the live shoot that is to stay – it must be a shoot directed in such a way as not to interfere in the future with storks landing on the nest.

Interestingly, often storks shape the vicinity of the nest on their own, by systematically breaking little twigs growing into the nest with their beaks. Storks do very well, even if they have access to the nest only from one or two sides. The nest does not have to be completely exposed.

Sometimes it is necessary to trim the shoots in the breeding season. This happens particularly when the shoots covering the nest are not removed in time and they are overgrown so that even adult birds have a problem with landing in the nest. Such shoots can be removed after the chicks are hatched, minimizing the time of the procedure. This should not be done during incubation and after the 20th of June, when the young storks are already so large that due to the high stress of the whole operation they can jump out of the nest, although they cannot fly yet.

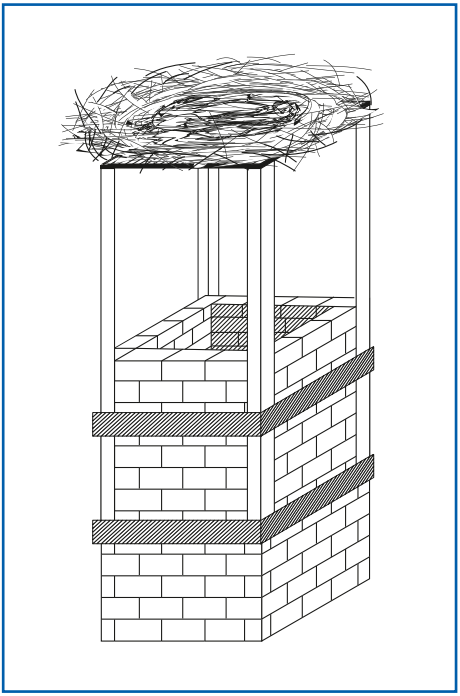
Nests on dry trees

In the case of the withering of a tree with a nest, we have to remember that such a tree can break below the nest or collapse as a result of decaying of the root collar. The time that passes from the withering of the tree to its collapsing or breaking is differs from species to species; it also depends on the size of the tree. A warning signal is the complete falling off of the tree trunk's bark. In this case, we must assess how long the tree can still stand – in the case of trees with hard wood, e.g. elm, locust and oak, it takes even over a dozen years, but the condition of the root collar just below the ground level should be monitored through its unveiling and checking if it is already decayed. In the case of trees with soft wood, e.g. poplar, willow, linden or alder, decaying of branches and root collar occurs shortly after withering and falling off of the bark. Dry trees that may collapse should be cut before the storks arrive, and near the old nest a replacement platform should be mounted (see chapter III). Avoid installing new platforms on dry trees – you should be aware that it may be only a temporary solution.

IV. 3. NESTS ON CHIMNEYS

In the case when storks build a nest on an operating chimney, there is a danger of it catching fire, and the inability to use the chimney is also a problem. If the structure of the chimney allows it and it is stable, you can make a platform elevating the nest at least 1 m above the exhaust outlet. The lower part of the platform must be secured with metal sheet with a thickness of min. 2 mm, and the whole structure should be made of steel angles protected against corrosion. The size of the structure is adapted to a particular chimney, bearing in mind that the nest part should have a minimum diameter of 1.2 m. On the steel plate you can screw a standard wooden platform or tie a wicker crown directly to it and put in nesting material or lining (see: "Crown" and "Lining of the platform" in chapter III. 1.).

If you cannot set up a platform on the chimney, you must move the nest to a standalone pole or a tree located nearby, keeping in mind the principle that a new nest should not be positioned lower than the old one. The chimney, after removing the nest, should be protected with a cone, welded from metal rods, which prevents birds from rebuilding the nest.



Scheme of a platform on a chimney

V. SECURING POWER LINES
TOMASZ KRÓLAK

Both in Poland and in other European countries in recent decades storks changed their preferences in their choice of location for building their nest. Due to the change of roofing materials, as well as cutting out old, withering trees, these birds more and more often decide to build nests on power poles. In the 1970s, there were only 3% of such nests in Poland, and in 2004 already 60%. Locating the nest on a power line carries a risk of electric shock for both adults and young birds. The accompanying short circuits often result in interruptions in electricity supply. Especially dangerous for the storks are nests situated close to transformer stations and medium voltage line poles with "bridges" located on them (i.e. additional cables), or various types of "connectors" (these, in turn, give the impression of additional elements on top of the pole). Storks that try to sit on this type of poles often suffer electric shock and consequently are killed. One of the methods of limiting such cases is replacing the "bridges" with cables that have insulation and "connectors" are moved to places below the power cables. Such

solutions improve the safety of birds to almost 100%. The methods indicated above should, however, be considered only in terms of examples, as they can't be used in every case. The local power station ultimately decides on the manner in which a pole is secured, guided by economic considerations and technical solutions available in the particular case.

In the case of both risks, the storks can be helped. **Let's remember, however, that nests located on power poles are in the immediate vicinity of voltage threatening human life and health. It is therefore strictly forbidden to interfere with and approach such nests.** Let's leave it to skilled workers who will secure the nest professionally and, more importantly, in a manner that is safe for humans, the birds, and the environment. Each of us can, however, report the incident of a newly built nest on wires or a post with non-insulated elements, which pose a threat to storks nearby. Remember, however, that the installation of a platform under a newly built nest is justified only when storks at least once delivered the young in the nest. Otherwise, you should wait and watch the fate of the nest in the next breeding season. It happens that immature storks "practice" the construction of nests and make some imperfect structures, which they don't use later. Also adult storks sometimes build so-called "summer nests" used only for resting and sleeping when in the nest with growing chicks there is no room for the parents. Building platforms under such structures is pointless and may lead to luring the storks to power lines, which are dangerous to them.

An inadequately secured pole can be the cause of death of many storks. Photo: MR

Recognizing power lines

If we want to take actions leading to securing the nest or post with non-insulated parts, the first issue to address is to identify who is responsible for the given pole. Not all posts "with wires" can in fact be described as power poles. The correct determination of the type of line shall make it considerably easier to reach the owner, which in turn will reduce the time of making our report. The appearance of an example low-voltage power pole (the vast majority of nests are located on them) is illustrated by the following photos:

Nest on a power line with "bare" wires. Photo: AT

Nest on a modernized power line (wires in black insulation are braided). Photo: AT

Storks also build nests on telecommunication poles – they usually "run" along roads or tracks and have over a dozen cables, or on "internal" power lines, owned by private companies, farms, or businesses. Keep this in mind and pay special attention to the above, in order not to waste time in reporting a problem with a nest at the energy company, while they will not be able to take care of the nest anyway, because the pole and line is not owned by them.

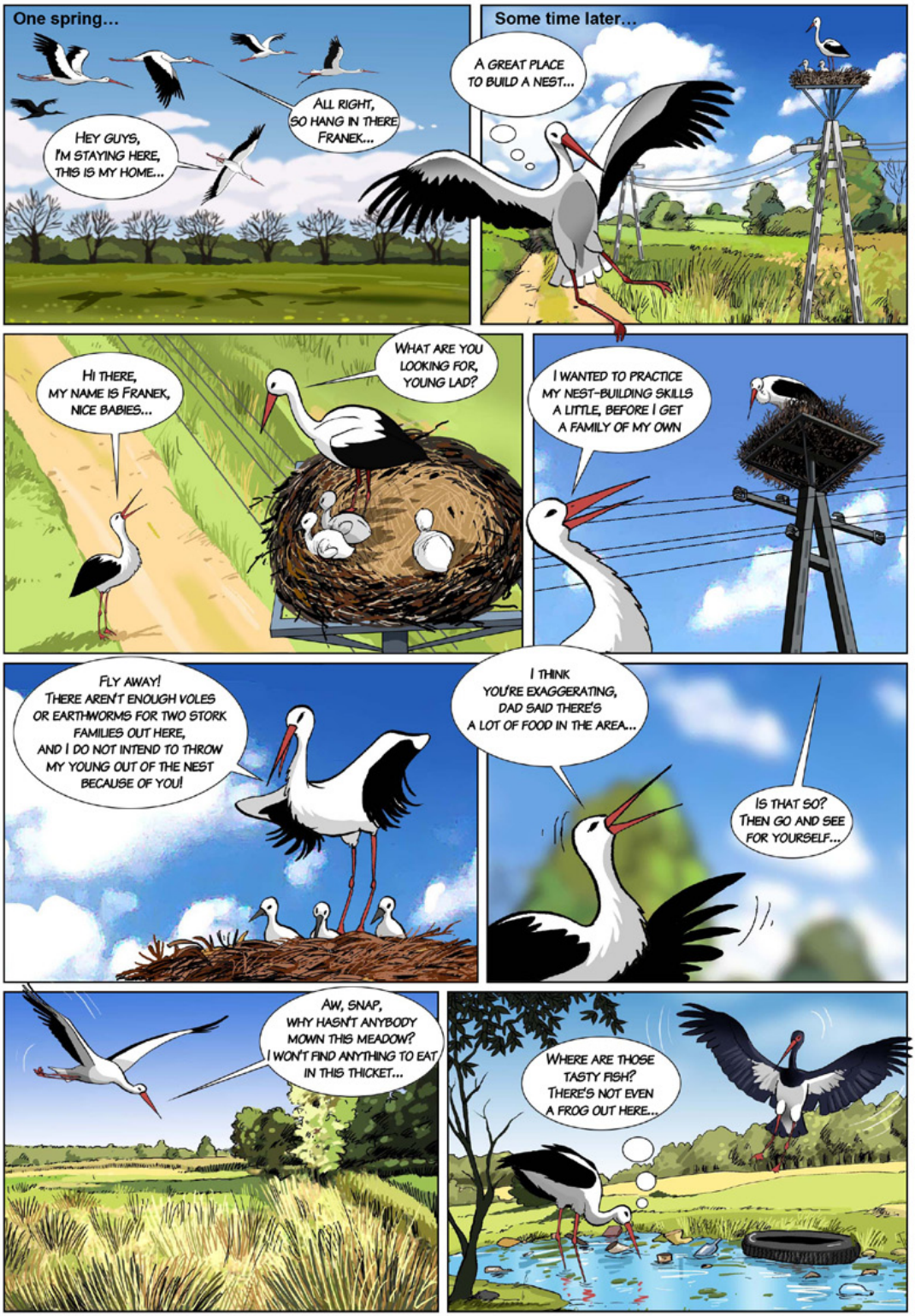
If we establish that the pole belongs to the energy company, in case of difficulty in locating the seat of the power district which covers the site in question, we can turn to the associated local government unit, i.e. city office, commune office or poviat office. It is best to go there to the unit dealing with environmental protection, where we can count on answers to our questions, and sometimes also practical tips on how, where and with whom we can deal with our matter quickly and efficiently.

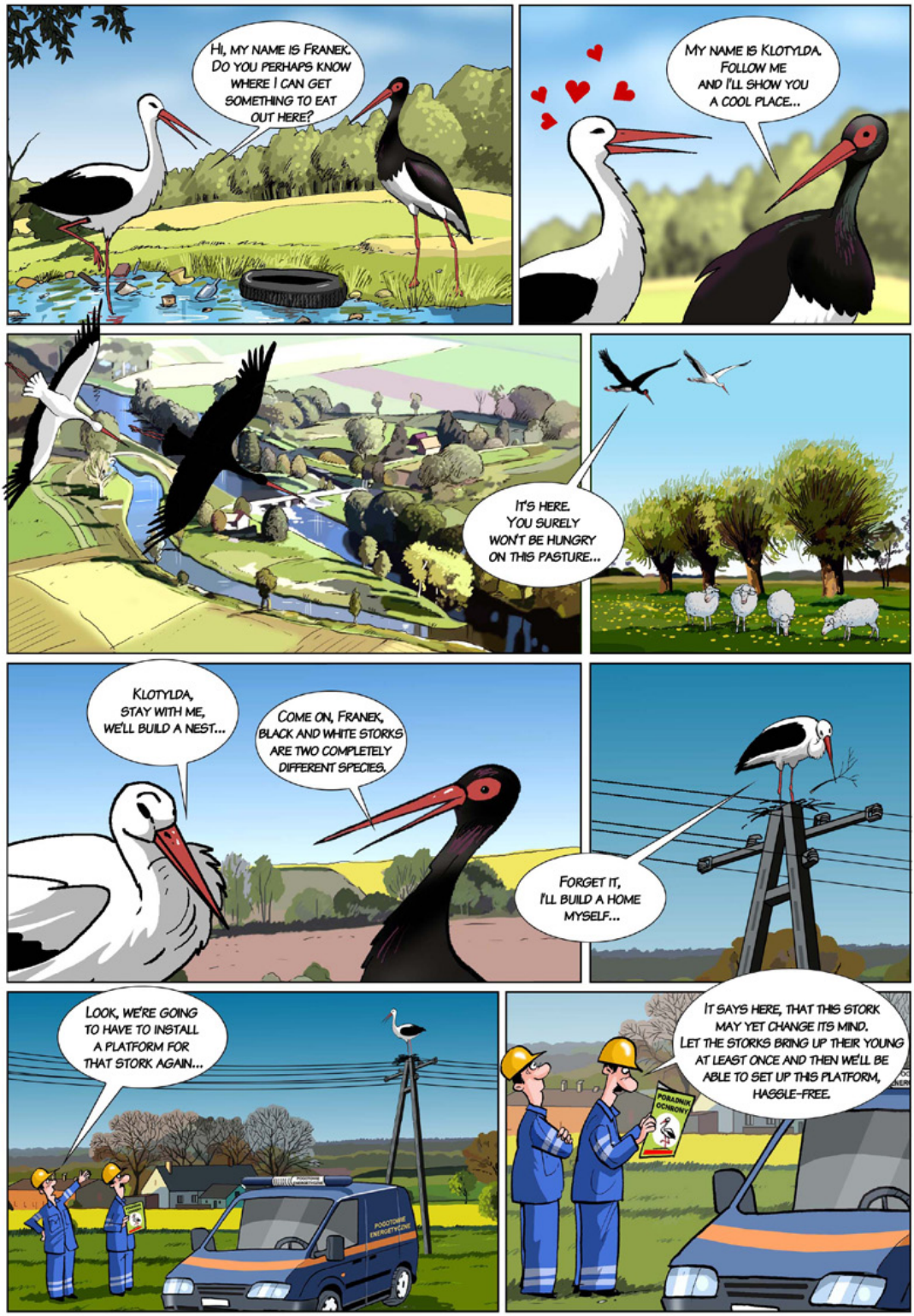
Reporting a nest at the power district

If we find a stork nest on a power pole, which does not have a nesting platform built and storks at least once delivered the young in such a nest, also, when the nest is located on a platform, but it is very large in size and causes e.g. the pole to tilt, this fact should be reported to the appropriate field power district. This is best done in written form sent via registered mail. It is necessary to provide in the notification the most comprehensive information on the location of the pole (we can provide the number read from it), its description (it is also good to include a photo), as well as a description of the storks' problem connected to that pole. Providing detailed information will make it easier to reach the indicated place, and accelerate the preparation of a suitable structure under the nesting platform. It is also necessary to provide contact information (e.g. telephone number) to the person reporting the problem. While monitoring the progress of our report, it is good practice to write down the name and position of the person you talked to each time. In the event of necessity of further contacts, this will significantly help us to reach the person responsible for our case, and consequently speed up the handling of the report.

If the situation is not urgent (i.e. there is no immediate threat to the safety of people or storks), any problems with nests should be reported to energy companies in autumn, when the storks fly away. The Act on environmental protection prohibits disturbing storks during the breeding season, therefore works with the nests can be carried out by energy services only in autumn and winter (from 16.10 to the end of February). By reporting the case in this period, we are sure that our letter won't get stuck somewhere in a pile of other applications and requests. If we want to help the storks nesting on power lines, there is basically no difference whether we do it as a private individual or operate under the aegis and with the support of some institution or organization. However, practice shows that the second option is "more acceptable".

Finally, remember that power districts as part of their statutory tasks have to primarily ensure the safety and liquidity of electricity supply and cannot always immediately take care of our business, so it is recommended to be patient from the very beginning of the process of reporting a problem.


One spring...
Hey guys, I'm staying here, this is my home...
All right, so hang in there Franek...
Some time later...
A great place to build a nest...
Hi there, my name is Franek, nice babies...
What are you looking for, young lad?
I wanted to practice my nest-building skills a little, before I get a family of my own
Fly away! There aren't enough voles or earthworms for two stork families out here, and I do not intend to throw my young out of the nest because of you!
I think you're exaggerating, dad said there's a lot of food in the area...
Is that so? Then go and see for yourself...
Aw, snap, why hasn't anybody mown this meadow? I won't find anything to eat in this thicket...
Where are those tasty fish? There's not even a frog out here...


Hi, my name is Franek. Do you perhaps know where I can get something to eat out here?
My name is Klotylda. Follow me and I'll show you a cool place...
It's here. You surely won't be hungry on this pasture...
Klotylda, stay with me, we'll build a nest...
Come on, Franek, black and white storks are two completely different species.
Forget it, I'll build a home myself...
Look, we're going to have to install a platform for that stork again...
It says here, that this stork may yet change its mind. Let the storks bring up their young at least once and then we'll be able to set up this platform, hassle-free.
PORADNIK OCHRONY

VI. AD HOC INTERVENTIONS – *AGNIESZKA CZUJKOWSKA, ADAM OLSZEWSKI, ALEKSANDRA WIERZBICKA*

VI. 1. WALKI O GNIAZDO

The nest is a factor that bonds a pair from the beginning to the end of breeding. However, "marital ties" are not lifelong in storks, and fights for a nest sometimes end in death, e.g. as a result of electric shock. Photo: AŁ

Fights for the nest are a fairly common phenomenon among storks. Some sources say that this happens even in every third stork's nest. Thanks to ringing storks with coloured rings that allow recognition of particular individuals, it was possible to dispel many myths about stork fidelity. It turns out that both the attachment of storks to the partner and to the nest is not lifelong. If one stork of a pair is late in the arrival to the nest in the spring, it can be replaced by another, "faster" stork. It also happens that one bird is killed in a fight with a competitor, which is soon accepted by the first stork of the pair. Such situations happen, however, usually before a pair starts breeding. Male and female usually defend eggs and chicks already together, and the nest in such a situation is a factor cementing the pair until the young are delivered.

Fights for the nest escalate if the area isn't very rich in food, and the nests are located too close to each other. It happens that the new platform under the nest, placed to encourage storks to settle in the area, but located too close to an active stork pair nest, will become a hotbed of conflict. The storks will intensely chase away any potential competitor for food from the vicinity, and the platform will remain uninhabited. **Therefore, any decision on setting up a platform for storks in a place where there was previously no nest or at least one successfully delivered brood, must be very carefully thought through!** Sometimes fights between storks are so severe, that they end in serious mutilations of birds or electric shocks due to falling on power wires (nests on electric poles), which can lead to death. It also happens that during fights for nests, eggs are thrown out, or even newly hatched chicks, and storks are forced to repeat the brood or give it up.

VI. 2. YOUNG OUTSIDE THE NEST

If you find a chick outside the nest, you must first determine the cause of their absence in the nest. The causes may be as follows:

A. Throwing out of the nest by the parents. Its potential causes can include:

- problem with feeding all the chicks due to insufficient feeding base (see: chapter VI. 4.);
- deformation of body parts of chicks or their unusual behaviour that result from congenital or acquired defects (due to illnesses or mechanical damage to the body);
- severe parasitic infestations covering the entire brood and weakening the chicks.

The above-mentioned causes can sometimes occur together.

This chick was found under the nest. It fell from a height of 4 m without injuries. Young storks are characterized by unusual optimism and are sociable. But remember, they are wild birds, and although they clatter amusingly, do not pet them or tame them! Photo: AC

B. Falling out of the nest with brood. Most often it takes place when the nest is unstable or too big (nest more than one year old, weighing even over 1 tonne), or when the tree or branch, on which the nest was located, withered away. Usually the nest falls during violent weather phenomena, e.g. a storm with strong gusts of wind. It is very rare for the young to avoid injury after falling out with the nest. Each time such birds should be examined by a veterinarian.

In the case when the examination of chicks showed no injuries, i.e. visible fractures or dislocations, and there is no suspicion of internal injury (e.g. blood in the beak, difficulty breathing), and the birds behave normally, you should try to install a replacement nest in the old place or in its vicinity, as soon as possible (as close as possible to the old place). The method of building the platform under such a nest depends on the place where you will install it (see chapter III). The speed of rescue has a huge impact on the success of the entire operation. Before returning to the nest, the young should not be fed abundantly, because their begging for

food increases the chance for the quick return of their parents. If we observe that the parents regularly arrive with food, it can be said with a high degree of certainty that the operation was successful.

If the young are injured, you should take them to the nearest rehabilitation centre. If there are no technical means that would allow to quickly build a replacement nest, consider the attempt of placing the young with "foster families" (see: chapter VI. 3.).

C. Juvenile birds during first independent flights. The anxiety of people who observe the development of young storks can be raised by situations when the young, after the first attempts at flying, do not return to the nest. The reason may simply be an inadequate amount of space in the slot, where there are a few young. In this case, you must observe whether:

- the young bird rests and sleeps on high structures, guaranteeing its safety against predatory mammals (including dogs and foxes);
- the juvenile birds in the first days outside the nest are accompanied by their parents who feed them;
- the young bird has no problems with flying and/or taking off into the air. If so, it is worth trying to capture the bird (such an attempt must be made with caution! – see: chapter VI. 11. 1.) and to consult its health with a veterinarian. However, do not attempt to place the young into the nest with the other young, because it may cause premature leaving of the nest by siblings that do not have the ability of free flight.

VI. 3. PLACING YOUNG STORKS IN SUBSTITUTIVE NESTS

The relevant local regional directorate for environmental protection must issue a consent for moving the stork. Because the situation is usually urgent, a written request should be supported by a phone call explaining the situation and asking the office for urgent consideration of the case, and the young stork should be taken to a rehabilitation centre or veterinarian, where under professional supervision it will wait for a decision.

Each operation of placement of the young should be conducted in consultation with an experienced ornithologist and using specialized equipment ensuring the safety of people and birds. During the operation, you should be guided by several principles:

1. Placement of the young should concern nests where there are smaller broods (preferably from 1-2 up to 3 chicks). The young being placed should not differ

in size from the young in the replacement nest. It can be estimated in a simple way by comparing the lengths of their beaks – the difference should be up to 3 cm.

2. Avoid placing chicks with eggs. Exceptions are situations when we are sure that the existing eggs are not fertilized, and the chicks are at most a few days old – then it's best to simulate hatching (place the chick or a maximum of 2 chicks and shells of chicken eggs, of course removing the unfertilized eggs). Due to the caution of female storks, which may not accept this situation, it is a risky solution without certainty of successful adoption.

Young storks can be placed in substitutive nests only with chicks of a similar age and before they reach the ability to stand on straight legs (i.e. during the period of development, when chicks position themselves on their hypotarsus in the nest). Photo: AT

3. In no case should you add eggs to chicks!

4. It is important that young storks before placing are fed with appropriate food (see: chapter VI. 10.), at the same time not overfeeding them.

The young kept for a long period at the rehabilitation centre, are not suitable for placement with parents. Such chicks have completely different behaviour from wild birds. They also may fall out of the nest as a result of the loss of instinct, which dictates the young to stick within it (at the rehabilitation centre, young storks usually have unlimited space and freely walk on the premises or on the ground).

Adoptions of young are only possible before they achieve a certain age. Older birds which are at the stage of intense exercising of wings – in response to the stress connected with the whole operation of placement in the nest with other foreign storks – may fall out of the nest. Therefore, placement is only practiced with very young chicks, which position themselves on their hypotarsus in the nest or even fluffy chicks, up to 40 days old.

VI. 4. HUNGER

Circumstances contributing to hunger:

- unfavourable weather: cold (less insects and reptiles), rainy summers;

- year low in rodents;
- death of a parent;
- strong rivalry between birds nesting in close proximity;
- conversion and change of land use within nesting and feeding areas: drainage of meadows, overgrowing of unused pastures, backfilling field ponds, use of chemicals, and agricultural intensification.

Insufficient food is one of the most common causes of throwing the young out of the nests, and in extreme cases, their abandonment. It is amazing that in general small storks survive the fall of several meters, and poor health is caused rather by low temperature and malnutrition.

In each case, when we are dealing with a thrown out chick, we should take into account the possibility of hunger as the cause of this fact (although there are also carelessly constructed nests), and then placing the young back into the nest is not a good solution. If the chick has not yet reached the age when it can stand on straight legs, after medical consultation you can try to place it in the replacement nest with young of the same age, in an area rich in food (see: chapter VI. 3.). Another, but risky option that requires experience is feeding the chick and another attempt to reconcile it with the family, with simultaneous feeding the adults (see: chapter VI. 6.). The last and least favourable option for the bird is manual rearing (see Chapter VI. 10.).

Hay meadows are the most important feeding ground of the white stork. Abandoning their use leads to a reduction in the number of raised chicks, and in a longer perspective to the disappearance of breeding sites. Photo: AŁ

VI. 5. DEATH OF A PARENT

A particular situation is the death of a parent. The decision of feeding needs observation and reflection. There are known cases when a lone stork successfully fed the young. It seems that if the male dies, the female leaves the brood. In the opposite situation, the male often takes up performing double duty. There are known cases of a lone bird feeding two chicks, and even the case when the male fed four chicks. The availability of food in the area and in the given year is of great importance here (see: chapter VI. 4.), as well as the age of the young. The chance of rearing the young increases with their age. The decision of feeding depends therefore primarily on the degree of development and the number of young (if it is possible to be determined). If the number of young is maximum two, we can refrain from feeding (while still observing the situation in the nest), whereas in the case of three and more young, there are clear prerequisites for feeding. It is best to monitor the situation and consult it with an ornithologist.

VI. 6. FEEDING

Feeding storks is not a difficult task, however, it requires paying attention to the following issues:

- place of leaving the feed: safe for the bird, easy to control, eliminating competition e.g. with dogs, cats or foxes;
- type of feed: use only one day-old chickens, freshwater fish (10–15 cm), beef hearts in pieces, poultry hearts, crushed chicken wings, rodents (but not killed by poisons!). **Feeds that are absolutely prohibited are offal such as liver and meats, wheat products, sweets, milk, sea fish** (see also: chapter VI. 10.).

Storks can be fed among others with freshwater fish, which are a part of their natural diet. Photo: AŁ

VI. 7. YOUNG IN THE NEST TANGLED IN STRINGS

Storks strengthen nests each year using materials picked from surrounding fields. Unfortunately, in this way strings and nets left in the field, which are used in presses and balers for binding hay and straw, and also other dangerous rubbish, get into the nests. These materials are a deadly threat to the young, which for the first weeks of their lives move around the nest awkwardly on bent hypotarsus. A chick, which gets caught in string, is unable to stand on its legs and it can rarely

Young stork entangled in strings. Photo: AT

Necrosis of the limb – a tragic end to leaving strings in the fields. Photo: AC

untangle itself on its own. This string will tighten, causing more and more serious problem, leading to necrosis of the extremities, sometimes to fractures (which lead to a deformed limb once healed).

In general we learn about this tragedy when the young already stand up in the nest or when the family flies away, and one chick remains. In most cases it is too late to save the young bird from death or disability because:

- part of the limb is dead (dry and black), it can be easily broken off,
- the bird has one deformed leg, which is the effect of multiple fractures.

The stork cannot function without working legs, as its feeding, taking off and landing, as well as safely spending the night on branches or buildings depends on them. Even if the bird stands on one limb, freeing the other, over time, the other, due to increased load, will be covered on the sole side with unhealing wounds and pressure sores, causing the bird additional pain with each step.

Of course, in order to diagnose the situation, the young must be safely taken out of the nest and presented to a veterinarian for examination. Sometimes the leg is not yet dead but only very swollen, and there is a chance that after taking off the string and with proper medical care the bird will return to health.

VI. 8. LATE BREEDING

In the case of storks in which the development of the young, from the moment of laying eggs to volatility, takes about 3 months, it is not possible to deliver more than one brood during one breeding season (spring-summer). It often happens, however, that a brood is repeated, due to the loss of eggs in the initial period of their incubation. This can be caused by adverse weather conditions (storms and nest destruction, rain, sudden cooling), less frequently by predation or fights for

the nest between storks. If the storks lose a brood at a more advanced stage, they do not repeat it. Such storks usually keep close to the nest, often visit it, spend the night in it and look for food in the surrounding meadows and fields. Another cause of late broods can be a late return from wintering grounds.

An experienced pair usually copes with bringing up even a later started brood. However, it sometimes happens that the young of such a brood do not manage to reach maturity that enables them to survive the long journey to wintering grounds and do not decide to begin it but stay in the country (see chapter: VI. 9.). It sometimes happens also that the instinct to migrate in adult storks is so strong that the parents leave their young which are still in the nest. These chicks have no chance of survival. Before intervention, it is necessary to observe and make sure (preferably by consulting an ornithologist) whether the adult birds don't in fact come to the nest. If this is the case, the young must be carefully taken out of the nest and brought up by humans (see chapters: VI. 11. 1. and VI. 10.). If it is an entire brood, the chances increase that the young storks won't tame and they will be able to fly free in the next season, especially if they spend the winter in the company of other storks.

VI. 9. WINTERING STORKS

Each year there are more and more reports of storks wandering in the fields. This is not a new phenomenon, as information about storks that did not fly away for the winter can be found even in historical sources. Although many people associate the frequent reports of storks wintering in the country with the phenomenon of global warming, it is not clear whether the number of storks wintering in recent years has indeed increased or if the number of bird watchers and people concerned about the fate of storks, who report such cases, has increased. What's more, in the reports of many ornithologists, it seems that the birds which did not decide to commence their journey are primarily weaker individuals or young from late broods. There are known cases of successful wintering of storks in the country without human help. A threat to such birds is not the cold but the large snow cover which makes it difficult for them to find food. Mild winters, which occur especially in the west of the country, can be conducive to storks surviving the winter without human assistance, searching for food in the field, by unfrozen water bodies or near chicken farms and landfills (feeding on meat scraps). If we see a wintering stork, the most important thing is to determine if the bird is healthy or injured. Sometimes this can cause difficulties, but generally nearby inhabitants are able to say if the bird:

- has visible signs of trauma, e.g. blood?
- is limping, has an asymmetrical wing or if one wing is simply hanging?

Every year in the winter there are cases recorded in Poland of storks, which decided not to take up autumn migration. Photo: AŁ

- is able to fly away if frightened or if it only runs off?
- spends the night on tall structures, which provide safety, or if it is not able to fly well and spends the night on the ground?

Usually, wintering storks feed in nearby fields, and if it is not necessary, you should not attempt to capture them until the first frost. Until this time, there is enough food in the fields, while **the available methods of capturing storks pose a risk to the birds and they are used only if necessary.** What's more, it is against the law to try to capture healthy birds, and the law says consent is required to catch and transport protected birds, which are not injured (see: chapter VIII). A healthy stork may certainly be fed (see: chapter VI. 6.), which also makes it possible to assess its health.

If the bird is clearly weak and/or sick, you should immediately attempt to catch it and deliver it to the nearest rehabilitation centre. You should remember that even an injured bird, if it is in a good enough condition to escape, will not allow humans to get close. More information about catching and transporting storks can be found in chapter VI.11.

VI. 10. MANUAL REARING OF WHITE STORKS

Manual rearing is reserved only for specialized facilities, i.e. rehabilitation centres. Keeping protected birds without permission is illegal. The information provided in this chapter is only guidelines for interim measures, i.e. until transport to the rehabilitation centre.

Manual rearing of the white stork bears the risk of the so-called "human imprinting" (the stork identifies with the "parent" who fed and raised it, so the human). Therefore, such a decision should always be taken after considering all the possible solutions (i.e. adoption by another pair of storks, uniting with the family). If manual rearing remains the only solution, it is preferable to join a few birds together. Chicks of storks usually compete with each other, so if they are not birds from one nest and in the same age, they should be separated, but in such a way that the birds can constantly see and hear one another. Otherwise there will be constant "stealing" of food, and even fights. Oddly – the oldest and largest individual will not always be the initiator!

Storks feed their young by throwing up the food, and the young quickly take everything that is within their reach. Therefore there is no need to feed from the hand (unless the bird is very weak). It is sufficient to position the bowl with appropriately fragmented food. If the food is soaked in water and not dried, there is no need for giving water. Adult birds do it very rarely, on hot days, and it is rather cooling the young than giving them water to drink.

The most practical and realistic solution is feeding the young storks with balanced food ad libitum (at will) in several portions (every 2-3 hours). Young storks, despite a large appetite, should not, however, grow too fast. To determine the caloric demand of the young stork, the formula presented in the frame is used.

Taxonomic constant C x (body weight in kg $^{0.75}$) x 1.5 x (physiological status) = Kcal/24h

Where:
C = 78
Physiological status for growing animals is 1.5-3.0.

Suitable foods for storks are: crushed chicken wings (without the skin), day-old chickens, freshwater fish, house mice or rats (possible to be obtained e.g. from laboratories). Young storks from the first days of life can form pellets, so it is advisable that the food contains ballast – it will be skin and hair (of course added

in moderation), or fish scales. Frogs are not used in feeding of storks for many reasons, apart from the fact that they are protected by Polish law, they have little nutritional value and in addition contain many parasites.

An important aspect of feeding is the content of calcium in the diet. In young animals this element should constitute 1.5-2% of the diet, and the ratio of calcium to phosphorus in the diet should always be 2 Ca:1P. Therefore, one-sided feeding, e.g. food for dogs and cats, chicken breast or turkey, which are not adequately balanced in terms of these elements, results in serious health consequences for storks in the form of abnormal development and bone diseases. **Feeds that are absolutely prohibited are offal such as liver and meats, wheat prod**ucts, sweets, milk, sea fish.

Storks, apart from very small and weak chicks should be constantly in contact with fresh air, that is, in practice, the young sprouting feathers should be exposed to partial shade. An important aspect of rearing is to provide a non-slip surface, otherwise there is a risk of joint injuries and deformities of the limbs.

VI. 11. INJURED STORKS: CAPTURING, TRANSPORT, FIRST AID

Injured storks can be divided into two groups. The first group is seriously injured birds, which can be easily captured, and the most important thing is quickly providing them with first aid and transporting them as soon as possible to the rehabilitation centre, where they will receive specialized assistance. The second group is slightly injured birds, usually living nomadically in the fields, that are able to escape from human. This group is difficult in capturing, as generally these birds are in good general condition. After capturing, examining (unless they showed signs of myiasis of the wound) and providing the stork with first aid, it can wait for transport even a few days – because any fractures occur as already grown together or as healed wounds with protruding bone fragments.

VI. 11. 1. INJURED STORKS: CAPTURING

When planning to capture the stork, keep in mind that the first principle, universal for all wild animals, is the organization of the action. If we decide to catch, we need to know:

- who and how will catch the bird;
- who will keep the bird until transport;
- when will the transport take place (and the type of container for transport);

- who and when will provide the bird with medical assistance and before that – first aid;

- finally, where the bird will be taken and whether the facility is appropriate and agrees to accept such a patient.

Health and safety – safety of people

Remember that human safety is always the most important, even at the expense of prolonged rescue operation, even if the chances of the animal decrease by the hour. **Never risk your life,** e.g. by climbing power poles with live wires.

When dealing with wild storks, above all we must remember that the beak of a stork, which the birds use to capture their victims and defend against predators poses a real threat to humans. Therefore, during the capture of a stork, grab his beak first, and then try to gently push the bird to the ground. Then you can try to immobilize the wings and legs, or examine them. **Under no circumstances lean over a stork with an unprotected beak!** When grabbing the beak, remember not to block the nostrils.

Health and safety – safety of birds

Storks, as birds with long legs, are particularly vulnerable to fractures and twists. Some of the birds' bones are pneumatized, that is they contain diverticula of air sacs inside. Fractures of such bones, e.g. humerus or femur serve also as an access route for fly larvae, dirt and bacteria directly into the body cavity.

Young storks (distinguishing young storks from adults – see: chapter II) in a stressful situation and with no way out, assume lying position – the same as in the nest. This makes all actions and immobilization easier – only wings remain to be immobilized.

Adult birds will not be so keen to assume the position with legs bent under the body. You can then, **after grabbing the beak** (adult birds are particularly fast and dangerous), try to put the wings together and press the bird gently but firmly against the ground.

The list below contains basic equipment used to capturing storks:

1. **Visual barrier** – it can be a simple cloth with adjusted weight used to direct the stork to the place where it can be caught with hands, or put e.g. blanket on it.

2. **Nests** – can't be too heavy, because the entangled bird is exposed to leg injuries. Cast nets can be used on small distances and require the cooperation of at least 2 people. Moderately effective in the case of birds flying up, most useful for trapping flightless birds. The second technique of using nests involves spanning it over a certain length (by at least 2 persons) and directing the bird on it. This technique requires the cooperation of many people and is stressful for the birds, and in addition exposes it to excessive and forced effort.

Under no circumstances shall loops for capturing mammals be used for capturing storks. Also, the so-called "herding" of the bird, that is disturbing it until it loses it strength, is not an appropriate method. Apart from the fact that it is inhuman, for the bird it may result in serious health consequences, including severe myopathy (muscle damage).

Moving storks

Fortunately, white storks are not large birds and can be easily fit under the arm, surrounded by a firm hold of the arm. The young can be moved with legs bent under the body, adults can try to get away from that position, then we surround the wings with the arm and press to the body. With the other hand we secure the head – grabbing the beak. You can also carry a stork with its head facing backwards.

The correct way of moving a stork. In an attempt to capture the stork, at first we immobilize the beak, which is dangerous to humans. Photo: AC

NOTE: birds calm in the darkness, therefore you can cover the eyes of particularly nervous birds – e.g. by putting a towel on its head – but it should not hinder breathing.

VI. 11. 2. INJURED STORKS: TRANSPORT

Storks can be transported in bags on short distances. It is important that their heads to not touch each other directly – otherwise, the birds might hurt each other during transport. Photo: AC

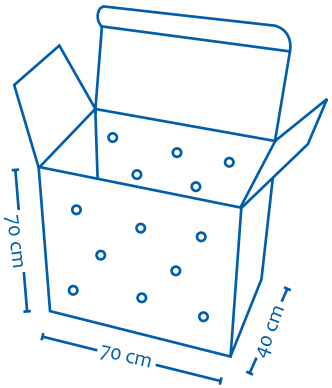
Every year at Ośrodek Rehabilitacji Ptaków Chronionych "Ptasi Azyl" [Rehabilitation Centre for Protected Birds] in the Warsaw ZOO a sad "record" is broken in terms of the wrong way of transporting storks. This box is definitely too small! Photo: AC

In the case of injured birds, before placing them in the transport container, if needed and where possible, the bird should be given first aid assistance. In the case of fractures, both of the wings and legs, especially open fractures, movement should be restricted (see Chapter VI. 11. 3.), which should never mean keeping it in a position for a long period of time, which makes it impossible to straighten the legs or neck. **It is unacceptable to wrap the bird up tightly with tape or string.**

Transporter

In practice, the best type of transporter for the stork is a properly sized carton box. It seems that an injured stork, who has achieved the size of an adult bird, can sustain even several hours of transport in a box with the dimensions:

- width 40 cm, (with fractured wings even 30 cm),
- length 70 cm,
- height 70 cm (at this height it is already possible to assume the position on half-outstretched ankles).



Scheme of a transport box

Chicks can be transported in smaller carton boxes, adjusted to their size.

For short distances, it is acceptable to transport storks in bags, e.g. bags used for grain; a hole for the head must then be made and the other end must be secured with a strong string. A bird may be transported like this up to 3 hours. After this time temporary or permanent damage to the legs may be caused.

Storks should not be transported in cages, where they can easily get their legs, head or wings caught. Under no circumstances should there be more than one stork transported in one transporter, as this is risky even for chicks.

Other rules that a transporter should meet:

1. A solid surface preventing skidding: due to the fact that storks are long-legged birds, during turns and braking of the vehicle, they easily lose their balance, and attempts to get up on a slippery surface almost always end in injuries of the joints.

2. Solid walls and top: this limits the number of stimuli reaching the bird, half-light has a soothing effect, it eliminates the risk of getting caught and injury. **However, the transporter should have ventilation** e.g. holes cut out in the box.

3. If we are dealing with fractures of one or both lower limbs, the box or transporter should be filled half-way (up to 1/3 minimum) with a soft material, e.g. hay, paper balls, Styrofoam balls – so that the bird's weight does not burden the legs

During transport:

Fluffy chicks need to have thermal comfort throughout the entire way, i.e. about 30°C, with no drafts. Temperatures higher than 35ºC may lead to heat stroke and death. In order to assess the behaviour and condition of the chick, it is best to keep in touch with the rehabilitation centre.

While driving, only fluffy chicks (and that's only when the trip takes longer than 3-4 hours) must be fed, and even that depends on their health, because sometimes they are too weak to eat and then our assistance will be limited to ensuring their thermal comfort. **It is best not to feed the birds right before transport.** This species easily regurgitates feed in stressful situations, which undoubtedly includes transport. It is not recommended to give storks water to drink during transport, unless it is so long that it is planned to take breaks and the birds are released from the containers, and their condition allows them to drink on their own. In other cases, they should be prepared for the road, e.g. by intravenous fluids and electrolytes administered by a veterinarian.

VI. 11. 3. INJURED STORKS: FIRST AID

First aid means all measures taken before delivering the bird to a veterinarian or rehabilitation centre.

Providing the bird with first aid, e.g. dressing the wing, does not exempt you from the obligation to deliver the patient to the rehabilitation centre or veterinarian, where further actions will be taken. First aid measures taken should make it possible to safely transport the stork and minimize any further trauma. It is important that they do not harm the birds and do not hinder the later work of the veterinarian. Do not administer the birds any medication of your own accord.

Treatment of wounds

Dressing the wounds of a stork does not differ greatly from the general rules applicable to animals. It should be done in the cleanest way possible, taking into account the principles of anatomy, i.e. do not immobilize limbs in a position that is not physiological, do not bandage the neck tightly (risk of suffocation), etc. The best method is always calling a veterinarian or rehabilitation centre you know. When dressing wounds, use means of personal protection, i.e. rubber gloves.

When dressing wounds do not:

- use disinfectants (hydrogen peroxide, alcohol, iodine, etc.), which may impair healing, and even lead to tissue necrosis;
- apply cotton or paper towels directly to the wound (softened by the blood and other seepage they will stick to the tissue, dry up and impede further action);
- pick scabs that protect the wound and block bleeding;
- apply tourniquets on the birds;
- use band-aids that stick directly to the feathers;
- use pressure dressings on the bird's chest.

If in the place of fracture or in the wound there are already fly larvae, do not remove them on your own – the veterinarian will do this when working on the wound. Do not waste time and focus rather on the fastest possible transport of the bird to the veterinarian.

The type of dressing used for wrist injuries and forearm bones fractures. When putting on this type of dressing, we need to make sure that we include the humerus – to do this, the position of the elbow joint must be set. Photo: AC

Second variant of dressing used for wrist injuries and forearm bones fractures, this time, the "octal type" . Putting on this type of dressing by untrained persons, and with multiple fractures may, unfortunately, make the injury worse. It is, however, more stable than the previous one. Photo: AC

Leg bone fractures

The general rule when it comes to fractures is immobilizing the two adjacent joints, and with dislocations – immobilizing two adjacent bones. In practice, persons who are unfamiliar with anatomy, should try to set the limb (usually the wings) in a physiological position. This can be done by looking at the healthy limb on the other side of the body.

If the leg fracture is below the ankle or knee, so on a section of the leg that is easily accessible for manipulation, it is recommended to put on a dressing and immobilize the fracture site. Putting immobilizers requires knowledge and experience, otherwise inadequately secured stiffening may slide below the wound and additionally constrict it. In the case of an open fracture the point of the dressing is to protect the injury against contamination. After immobilizing and setting the limb in the physiological position, it is recommended to transport the bird as quickly as possible to a veterinarian or rehabilitation centre (see: chapter VI. 11. 2.).

In the case of protruding bone fragments, the most important task is to secure them from drying out, e.g. by applying a sterile gauze soaked in sterile liquid or a sterile gel dressing for burns.

In the case of a hip bone fracture, performing dressings without knowledge and training is risky. Bend the limb in a physiological position and proceed in the same way as with fractures of the ankle and lower leg.

An increasingly popular method of bandaging the wrist and forearm – it consists in a combination of wide pieces of bandage, making one wrapping and securing it with adhesive bandage. This type of dressing is suitable for extensive injuries and oedemas, and it is also easy to make. Photo: AC

In the case of a fracture of the humerus, make the wrapping around the bird's body. The photo shows two bands of bandage fixing the dressing. The first runs cranially, the other caudally in relation to the humerus. Make sure that the bandages covering the body do not slide down, compressing the organs or making it difficult to walk. Photo: AC

The most common mistakes when performing first aid on the fractures of storks' legs are:

- too loose dressing moves off and does not fulfil its role,
- insufficient restriction of the bird's movement, which tries to get up and makes the trauma worse.

Wing fractures

With wing fractures, apart from dressing bleeding wounds and securing the protruding bone fragments, we aim to place the damaged wing in a physiological position – such as it is assumed by the second (healthy) wing. It is important, as in leg fractures, to limit the motion and prevent the bird from spreading the wings. **In the case of wing fracture, stiffening is not applied in the form of an immobilizer, as bandaging the wing in a bent position to a sufficient degree contributes to stability of the fracture and the adjacent bones form a natural stiffening.**

Types of dressings depending on the location of fracture on the wing:

- wrist injuries: we use the bones of the forearm as a natural stiffening, we bandage the wrist in a bent position;
- forearm injuries: we immobilize the wrist and elbow, we use the humerus as a natural stiffening;

- humerus: we immobilize the whole wing, additionally we perform several wrappings of bandage around the trunk (note: it shouldn't be too tight, so as not to impede breathing), but we does not include the healthy wing.

VII. REHABILITATION CENTRES
AGNIESZKA CZUJKOWSKA

There are dozens of rehabilitation centres for wild animals in Poland. Creating and running a rehabilitation centre of animals requires the permission of the General Director for Environmental Protection, which is issued at the relevant proposal if the conditions in the facility meet the biological needs of the animals during their treatment and rehabilitation.

The nationwide, current list of rehabilitation centres for birds created by virtue of the Ministry of Environment and the General Directorate for the Environment can be found at **www.gdos.gov.pl.**

One of the leading such facilities is the Rehabilitation Centre for Protected Birds "Ptasi Azyl", which began its operations at the Warsaw Zoological Garden in the spring of 1998. This initiative was a continuation of many years of activity of Krystyna Rogaczewska and Jerzy Desselberger, which through the perseverance of Andrzej Kruszewicz and good will of the director at the time, Jan Rembiszewski, turned into a professional facility on a national scale. Since then, the number of patients admitted is regularly growing and has already exceeded 3000 birds per year, which makes it the largest centre for wild birds in Poland. Since 2009, due to new responsibilities of Andrzej Kruszewicz, the centre is directed by Agnieszka Czujkowska, a long-time collaborator and volunteer of Azyl (Asylum).

Ośrodek Rehabilitacji
Ptaków Chronionych
PTASI AZYL

Ośrodek Rehabilitacji Ptaków Chronionych [Rehabilitation Centre for Protected Birds] in the Warsaw ZOO
ul. Ratuszowa 1/3, 03–461 Warsaw
tel. (22) 670 22 07
e-mail: azyl@zoo.waw.pl
http://ptasiazyl.zoo.waw.pl

VIII. LEGAL ASPECTS OF PROTECTION OF THE WHITE STORK
DOROTA ŁUKASIK

Who is responsible for helping wounded storks and their transport to a wildlife rehabilitation centre? Who should take care of clearing the corpses of dead storks?

The legislation does not explicitly indicate who has the responsibility to help injured storks and who is responsible for transporting the animals to the animal rehabilitation centre. However, according to art. 7 sec. 1 point 1 of the Act dated 8 March 1990 on the commune local government (Journal of Laws of 2016, item 446, as amended), the tasks of the commune includes satisfying the collective needs of the community, which also includes matters related to the protection of nature. Pursuant to Art. 2 of the Act dated 16 April 2004 on environmental protection (Journal of Laws of 2016, item 134, as amended), environmental protection consists in preserving elements of nature, wild animals and animals of protected species, thus it should be held that the commune's tasks include providing help to injured animals of wild species.

The tasks of the commune include also clearing the corpses of animals on its territory. Art. 3 item 2 point 2 of the Act dated 13 September 1996 on maintaining cleanliness and order in communes (Journal of Laws of 2016, item 250, as amended) indicates that communes provide cleanliness and order in their area and create conditions necessary for its maintenance, including providing the construction, maintenance and operation of own or shared with other communes installations and devices for collecting, transporting and disposing of animal carcasses or their parts.

If the animal is injured as a result of being hit by a motor vehicle, in accordance with Art. 25 of the Act of 21 August 1997 on animal protection (Journal of Laws of 2013, item 856, as amended), the operator of the motor vehicle, who hit the animal, is obliged, to the extent possible, to provide it help or notify one of the listed services – i.e. veterinarian, member of the Polish Hunting Association, inspector of social organization which statutory objective is protection of animals, officer of police, municipal or commune police, border guard, employee of the Forest Service or the National Parks Service, guard of the State Hunting Guard, hunting guard or guard of the State Fishery Guard.

In the case of finding the carcass of an animal on the road, sidewalk or other devices connected to the road, on the basis of Art. 20 point 4 and Art. 4 point 20 of the Act of 21 March 1985 on public roads (Journal of Laws of 2016, item 1440, as amended), the entity responsible for the execution of the necessary

measures to clean up the road, should be the manager of the road. In the case of internal roads, their maintenance and management, in accordance with Art. 8 item 2 of the above Act on public roads, is the responsibility of the manager of the land on which the road is located, and in the absence thereof – of the owner of the area.

Is a consent required for capturing a wounded and/or weakened bird? What if it is a healthy, wintering stork?

From the point of view of legislation, the issue of capturing of white stork individuals is dependent on the state of the animal. Pursuant to § 9 point 3 of the Regulation of the Minister of Environment of 16 December 2016 on the protection of animal species (Journal of Laws of 2016, item 2183), in the case of capturing wounded and weakened animals in order to provide them with veterinary assistance or move them to the centre of rehabilitation of animals, an exemption from the prohibitions referred to in § 8 of the above regulation was introduced. Therefore, capturing a bird that meets the above criteria, i.e. is injured or weakened, in order to provide him with assistance, does not require permission of nature conservation bodies.

It is different in the case of capturing healthy individuals, e.g. those that decided to stay for winter. The phenomenon of wintering of the white stork in Poland is not a new phenomenon, and the number of these birds staying for winter in the country and their behaviour during this period indicates that these are not the only sick or weakened animals. Therefore, their survival does not always depend solely on feeding by humans. In such a situation, if in autumn you notice an individual that shows no desire to migrate and will probably stay for winter, it is best to observe it. There is no need to intervene, until the animal shows clear signs of weakening. If you wish to capture a healthy individual, you should first obtain a consent for such an action, as well as for the transport of the captured stork and ultimately for its keeping.

When and under what rationale nest storks can be destroyed?

There is an exemption from the general prohibition of destroying the nests of protected species of animals, introduced in § 8 point 2 of the Regulation of the Minister of the Environment on the protection of animal species, i.e. prohibition of destroying nests does not apply to the removal of bird nests from 16 October to the end of February, from buildings and green areas if it is necessary for safety or sanitary reasons. These conditions have to be fulfilled collectively, i.e. a stork nest can be removed without a consent only in the period specified in the above regulation, in the case when it is located on a structure (which includes not only

buildings, but also e.g. power poles) or in green areas (nests on trees, but only in cases when the trees are located within the borders of a village with compact building pattern, cities or accompany streets, squares, historic fortifications, buildings, landfills, airports and railway and industrial objects), and its removal is necessary for security reasons or for sanitary reasons.

In other situations, the body competent for issuing a consent for an exemption from the prohibition of destroying nests is a regional director for environmental protection.

Who and on what basis can keep storks requiring treatment, rehabilitation and birds unable to return to the wild?

In a situation when we find the white stork which requires help, the best solution is to get it under professional care of the rehabilitation centre for animals. Rehabilitation centre for animals is a place where by decision of the General Director for Environmental Protection, treatment and rehabilitation of wild animals that require periodic human care may be provided. Such institutions have adequate technical facilities, experienced personnel and are subject to regular inspections of regional directors for environmental protection. The complete list of rehabilitation centres for animals can be found on the website of the General Directorate for Environmental Protection.

Also veterinarians can provide help for the animal. Undertaking this noble task does not require a consent for keeping protected species. However, remember that in such a case "assistance", in accordance with the regulation on the protection of animal species should be interpreted as taking steps to eliminate hazards to the life and health of a stork. In the case of necessity of keeping an individual stork by a veterinarian longer, e.g. due to the necessity of its rehabilitation, you should obtain a consent of a regional director for environmental protection, because according to the act on environmental protection, a place where treatment and rehabilitation of protected species can be carried out is the rehabilitation centre for animals.

In addition, the legislator did not rule out the possibility of obtaining a consent for keeping storks by other entities, e.g. private individuals. Often there is a situation in which, due to the injuries, the stork individual after the treatment does not qualify for being re-released into the wild. Any volunteer can take care of such an individual. It is only necessary to obtain a consent for permanent keeping of an individual of protected species. The application must include legally required information:

1. name, surname and address or name and registered office of the applicant;
2. purpose of implementation of the proposed activities;
3. description of actions, for which permission may be issued;
4. name of the species or number of species, which will include actions, in Latin and Polish;
5. number of individuals concerned;
6. indication of the place and time of execution of action.

The application, which should include all legally required information, including the description of conditions in which the animal will be held, in this situation must be accompanied by a certificate from the veterinarian about permanent injury of the stork, making it impossible to release it into the wild.

It should be noted here that in accordance with applicable regulations, rehabilitation centres operating under valid permits of the General Director for Environmental Protection, can keep protected species only until the completion of their treatment and rehabilitation. At the time, when it comes to an end, the animal should be restored to the natural environment. In the case described above, when due to the sustained injuries, it is necessary to cover the individual stork with constant care of a human, also rehabilitation centres are required to obtain a consent for indefinite keeping of individuals of protected species.

Does a stork taken to the rehabilitation centre a few dozen kilometres from the place of finding have to be released at the place of finding after treatment?

Sometimes it happens that in order to help the storks, they must be transported over long distances, which usually in itself is the main obstacle for the person wishing to help the wounded stork. However, there is no obligation of re-releasing the animal after rehabilitation only at the place of its finding. Remember, however, that it cannot be a completely random place. You should always keep in mind biological requirements of the species and choose the place of release so that it resembles the site where the species occurs in the wild as much as it is possible. You should also remembered about possible dangers. In the case of white storks, they certainly should not be released in built-up areas, in the woods or in the proximity of power lines.

IX. RINGING
ADAM OLSZEWSKI

Ringing is one of the oldest methods of studying birds, yet it still provides us with a lot of valuable information. It involves labelling the individuals with rings, so it is possible to identify the bird after seeing it again anywhere on Earth. Thanks to ringing of storks, the existence of two migratory populations in Europe have been proven: western (migrating via Gibraltar to savannas of West Africa) and eastern (migrating via the Bosporus and the Middle East to eastern and southern Africa). The border zone between the two populations are the Netherlands and Germany.


Ringer at work. Photo: AT

In addition, analyses based on the ringing of storks concerning survival and causes of death are of great importance for their protection. It has been shown that 2/3 of the young dying in the first half of their life are victims of electric shocks or collisions with electricity or telephone wires. The first, neuralgic year of age is survived by less than half of storks, which is heavily influenced by the success of migration and wintering.

Ringing birds can be done only by authorized persons, i.e. having a license of a bird ringer of the Ornithological Station of the Museum and Institute of Zoology of the Polish Academy of Sciences in Gdańsk.

Ringing storks appears to make sense only in two cases:

- when we assume the implementation of the project for at least the next few years in the area of e.g. commune, poviat or geographic region;
- in the case of birds released from rehabilitation centres and zoological gardens

Ringing white storks does not cause damage to the brood and adult birds react to the man visiting them in nests with calm and without too much stress.

Implementation of ringing white storks seems to be an easy project. As it turns out, in addition to high costs (renting an aerial platform + the cost of coloured plastic rings), however, it requires a good logistical organization. Firstly, ringing storks is limited to the second half of June (rarely to early July). Secondly, you have to have knowledge about where and how to get, so that you do not miss any nests in the studied area. Thirdly, in order to reduce costs, you can reach some of the easiest nests using a ladder (for nests that are located 10 m above the ground). **Absolutely all the nests on poles with non-insulated power lines must be visited using an aerial platform.**

Renting an aerial platform is not easy, because not every company offering it is able to meet the often challenging demands of the terrain and the specific conditions at each nest, e.g. it is required to manoeuvre the basket of the aerial platform perfectly with the precision of a few centimetres to between power lines or branches. It often turns out that the best aerial platforms with the working range of over 18 meters are too heavy and not very manoeuvrable, which hinders e.g. ringing on a small yard.

When we arrange the equipment, it is good to have at least one helper, apart from the aerial platform operator. The helper mainly assists the ringer, but can also record data on a regular basis to the field diary, or deal with ongoing maintenance of the nest (to the extent possible during the active brood), e.g. trimming branches hindering access to the nest. Of course, any help, whether from local governments or private individuals, e.g. help in financing the aerial platform by the mayor in the commune, is very welcome.

Even the best organized ringing carried out over a larger area may be associated with various problems, e.g. with unfavourable weather conditions (storms or heat waves) or difficulties in accessing the nest (e.g. a closed yard or nest located in the middle of farmlands). Despite this, ringing of storks gives great satisfaction to the ringer, even after several years of work, because he has contact with a generally liked species, and there are still surprises in the slots which descriptions cannot be found in scientific studies.

All information about ringed birds is very valuable! If you find a bird with a ring, try to read the number, then contact the Ornithological Station of the Museum and Institute of Zoology of the Polish Academy of Sciences:
ul. Nadwiślańska 108
80–680 Gdańsk
tel. +48 (58) 308–07–59
www.stornit.gda.pl

X. ABOUT THE ACTIVITIES OF THE WILDLIFE SOCIETY "STORK"
MIROSŁAW RZĘPAŁA

Wildlife Society "Stork", as part of its activities, has been concerned with the white stork (protection, counting nests, education) almost from the beginning of its operation. In the years 1994-96 we participated in the 5th International White Stork Census in Mazovia, and we coordinated the 6th census in Mazovia in 2004. In 2012 we started monitoring the population of storks in Mazovia, which consists in counting nests in selected communes (the most abundant in the nest storks) in individual poviats. This area includes not only Mazovian Voivodeship, but also a part of Łódź, Podlaskie and Lublin Voivodeships. Monitoring included more than 40 cities and communes with a total area of 6900 km2, which are planned for systematic monitoring in the coming years. People working in the field as part of the monitoring, gain experience that will help during the upcoming event of the 8th International White Stork Census. It will take place in 2014.

Since 1999, we have carried out various activities related to active protection of storks. With the help of commune offices, poviat offices, power districts and with the participation of specialist companies, were carried out works with nearly 2,300 endangered nests. They consisted in the installation of platforms, setting up standalone poles, maintenance cuttings on trees to provide the birds free access to the nest.

Works with endangered nests were preceded by detailed diagnoses in the field in selected areas. In the years 1999-2003 we conducted inventories oriented at risk assessment of individual sites of storks in 10 poviats of Mazovian Voivodeship and in Biała Podlaska poviat (Lublin Voivodeship). In relation to injured storks (with various fractures or after electric shocks) we carried out interventions in collaboration with veterinarians and the Rehabilitation Centre for Protected Birds "Ptasi Azyl" at the Warsaw Zoological Garden. As part of the activities, in recent years we also carried out modernization works on 64 disconnectors and about 30 transformer stations, where in previous years storks were electrocuted.

The above-mentioned activities were carried out thanks to grants from various funds acquired by the Society, as well as thanks to the generosity of nature lovers. As a non-governmental organization we do not have permanent financial means which allow to conduct active protection.

You can help us protect storks, by giving 1% of the tax (more at: www.bocian.org.pl/1procent).

XI. ABOUT THE ACTIVITIES OF THE POLISH SOCIETY FOR BIRD PROTECTION
ADAM ZBYRYT

The Polish Society for Bird Protection (PTOP) exists since 1985 and its main activity are the tasks of active protection of nature in north-eastern Poland. The priorities of its activities include the protection of birds, including their habitats, knowing the status and tracking changes in avifauna and dissemination of knowledge about the birds, mainly about dangers and protection. PTOP gained experience during many years of implementation of projects financed from numerous external sources, e.g. LIFE (6 projects), EcoFund (24 projects), Coordination Centre for Environmental Projects (10 projects), GEF, National Fund for Environmental Protection and Water Management, Voivodeship Fund for Environmental Protection and Water Management, FARE, Norwegian funds and others. PTOP has worked as a partner with numerous entities, both public and private (e.g. forest districts, Regional Directorates of State Forests, General Directorate for Environmental Protection, Regional Directorates for Environmental Protection, Voivodeship Boards of Land Reclamation and Water Facilities, Polish Energy Group PGE, offices of cities and communes, poviat offices, natural landscape parks, national parks, etc.). Apart from practical protection of birds, members and employees of PTOP conduct ornithological research, including in cooperation with several scientific institutions in the country and abroad and coordinate large-area natural inventories. In addition, the society is engaged in environmental education through training for adults, classes in schools, television and radio broadcasts, newspaper articles, popular scientific and scientific publications, and guides.

The white stork has had a special significance since the beginning of PTOP. We coordinated 5th (1994), 6th (2004) and 7th (2014) International White Stork Census in north-eastern Poland. During our more than 30 years of activity we have set up more than 2,000 platforms under the nest for this species. To this day, we organize annually actions related to saving endangered stork nests (e.g. their transfer, reducing the size). In the years 2011-2014, we have completed the LIFE+ project entitled „Protection of the white stork population in the Natura 2000 Ostoja Warminska region", under which over 800 pairs of this species have been included in the protection. Currently we implement the LIFE project entitled „Protection of the white stork in river valleys of eastern Poland", under which we secure the appropriate state of population consisting of approx. 1,600 pairs. The main activities, which are scheduled to perform during its implementation are: (1) securing 400 conflictual and threatened nests, (2) securing 280 elements of power grid causing fatal electric shocks and 4 sections of 110 kV lines, with which migrating storks clash, (3) renovation of 2 rehabilitation centres for storks (Drozdowo and Grzędy) .

EDITION I

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