

Approved
Head of the Department of
occupational safety, industrial and
environmental safety
LLC DTEK Grids


O.Y. Tatarenko

The White Stork Ringing Report of LLC DTEK Grids, 2023

Written by
Dr. Sci. Biol., Senior Research Scientist
Head of the Western Ukrainian
Ornithological Society


A.A. Bokotey



Lviv
2023

Table of Contents

1. Introduction.....	3
2. Materials, methods and discussion.....	3
3. Results of the white stork ringing project	4
4. Conclusion.....	5
List of references	5
Annex 1 List of ringing objects.....	6

1. Introduction

The acceleration of urbanization and anthropogenic transformation of natural ecosystems, climate change, and Russia's military aggression against Ukraine have a huge impact on the state of Ukraine's environment. Therefore, the relevance of scientific and monitoring studies of natural ecosystems and their components is increasing. It can help to understand the current state, dynamics of processes, as well as influence management decisions at various levels.

An important element of these researches is the observation of dynamic processes in populations of individual species, trends in which may indicate changes in environmental conditions. White stork (*Ciconia ciconia*) is one of such species. This is a large, recognizable bird, who is the national symbol of Ukraine.

Over the past 100 years, this bird has completely disappeared from northern France, Belgium, the Netherlands, Denmark, western and southern Germany. According to the latest estimates, is about 45 thousand pairs in Ukraine (Hryshchenko, Yablonovska-Hryshchenko, 2023). Meanwhile, according to the estimates of ornithologists, there are about 160,000 pairs of white storks in the whole world.

The protection of the white stork in Ukraine is fixed by legislative acts. The bird is protected by the Law of Ukraine "About the Animal World", as well as by the Bonn, Bern and Ramsar Conventions.

Nesting of white storks is associated with settlements and the infrastructure of power lines, which greatly simplifies the observation of these birds during the nesting period and allows scientists as well as the public be involved in this process. The availability of trophic resources and other environmental parameters have a significant influence on the parameters of the placement of nests of this species, the number of chicks in the nest, etc.

2. Materials, methods and discussion

The DTEK Grids implements a number of projects related to the white stork. The main one is the construction of special platforms in the nesting places of birds on power lines and the transfer of stork nests to these platforms. The aim of this project is to preserve both bird nests and uninterrupted operation of power grids, which minimizes the conflict of interests of birds and energy companies.

One of the most effective modern methods of researching migratory route of birds, nesting sites, post-nesting aggregations and wintering, as well as long-term observation of certain individuals of the species is the marking of birds with colored rings with a unique identification number. In the case of the white stork, the easiest way of marking is to mark the chicks in the nest. This allows for long-term observations of the local nesting group of the species, its distribution, life span, survival of young birds, etc.

To achieve the goals, the ecologists of DTEK Dnipro Grids and DTEK Odesa Grids of the holding DTEK Grids, with the involvement of production personnel,

carried out preparatory work and analysis of the most promising locations for the implementation of the tasks. After preliminary camera work and consultations with ornithologists, a field inspection of stork nests located on the poles of 0.4 kV overhead power lines in the Odesa and Dnipropetrovsk regions was carried out. As the result, the number and approximate age of chicks were recorded (described and photographed), the selected locations marked on the work cards and the exact time of ringing was agreed. Furthermore, necessary resources (special equipment and personnel) was ensured and organized.

Accordingly, the distribution system operators DTEK Grids Company participated the international project (Małopolskiego Towarzystwa Ornitologicznego), which unites the energy companies of Poland and Ukraine for the preservation of white storks.

For the implementation of such projects, it is important to involve professional ornithologists with experience in marking birds, as well as further observations of already marked birds. The Western Ukrainian Ornithological Society is one of the public organizations that unites professionals with many years of experience in marking large birds, including white and black storks. Cooperation with ornithologists allows you to correctly interpret the results of research, correctly organize the marking process and minimize risks for birds.

3. Results of the white stork ringing project

During July 4-7, 2023, a pilot project of marking white stork chicks was implemented in Odesa and Dnipropetrovsk regions. As part of the project, chicks from 17 nests with a total number of 42 individuals were ringed (see Appendix 1), information was collected to determine the sex of the chicks, trophic base, etc.

Ringing was carried out in the period when the chicks have grown enough, but have not yet flown out of the nest - approximately 2-2.5 months when the birds already have a developed system of joints and the rings will hold firmly on their legs.

Ringing is an effective method of researching wild birds by attaching a small metal or plastic, individually marked, ring-shaped tag to the bird's limbs. By means of individual ring, scientists are able to monitor the bird in different countries of the world.

Ringing allows you to track migration routes, the influence of external factors on the population in different countries of the world, and the number of birds returning to the country. Then, this will help scientists to obtain up-to-date data on the population and implement effective corrective measures for its saving.

During the ringing process, appropriate questionnaires with data on the physical parameters of the chicks, the geometric parameters of the nest and the presence of roommates (starling, house sparrow, field sparrow) are attached to each nest; in some cases the number of pairs of roommates reached more than a dozen.

Further implementation of the project on marking white stork chicks will allow to significantly expand the volume and quality of the obtained data, which, in turn,

will provide a reasonable understanding of the processes that occur in the population of this species and the ecosystems where this species lives.

In addition to purely scientific data, this will allow obtaining information on the influence of a number of factors on the nesting population, including natural and anthropogenic ones, as well as developing effective mechanisms for preserving biodiversity and introducing elements of sustainable development in a modern dynamic environment.

4. Conclusion

Despite the fact that in 2023 Company's efforts were focused on restoring the electrical infrastructure destroyed by the enemy, as well as maintaining the stable operation of grids, DTEK Grids continue to implement projects to preserve land ecosystems. It is important for us to be faithful to the Sustainable Development Goals of the UN General Assembly. We joined the project of the Polish Society of Ornithologists to continue and scale up our initiatives to preserve the white stork population in Ukraine.

This is the first (pilot) stage of the ringing project implementation. In general, upon completion of the project, the company plans to help ring 500 birds.

Such Polish energy companies as: Tauron Dystrybucja SA, Energa Operator, Enea Operator, PGE Dystrybucja SA take part in the Małopolskiego Towarzystwa Ornitologicznego project. By the joint efforts of ornithologists and energy scientists in Poland, by the beginning of 2023, almost 4,600 storks have been ringed and 15 transmitters have been installed to track migration.

In Ukraine, the next stage of the project may be the marking of white stork chicks with GPS-GSM transmitters, which, together with color marking, will provide much more information about the movement of birds throughout the year, the settlement of chicks, the return of chicks to nesting sites, the localization of wintering sites and migration routes, and flight phenology.

List of references

1. Gryshchenko V. M., Yablonovska-Gryshchenko E. D. Thirty years of monitoring of the trough of the white stork in Ukraine (1992-2021). - Chernivtsi: Print Art, 2023. - 296 p.
2. Fesenko G.V., Bokotey A.A. Annotated list of Ukrainian scientific names of birds of fauna of Ukraine. - Kyiv-Lviv: UTOP. – 2000. - 44 p.
3. Fesenko G.V., Bokotey A.A. Birds of the fauna of Ukraine (field determinant). - K.: New seal. – 2002. - 414 p.
4. Field nest survey questionnaires.

Annex 1 List of ringing objects

DTEK ODESA GRIDS (Odessa region):

№	Date	Power Grid Division	Settlement	Name of overhead power line	Number of chicks
1	04.07.23	Ivanivska precinct	Mykhailopil village	Overhead PL 0,4 кV L1 from TS - 125 TT 23	2
2	04.07.23		Mykhailopil village	Overhead PL 0,4 кV L1 from TS - 125 TT 11	2
3	04.07.23		Mykhailopil village	Overhead PL 0,4 кV L1 from TS - 285 TT 31	2
4	04.07.23		Mykhailopil village	Overhead PL 0,4 кV L1 from TS - 285 TT 23	2
5	04.07.23		Mykhailopil village	Overhead PL 0,4 кV L1 from TS - 285 TT 6	3
6	04.07.23		Mykhailopil village	Overhead PL 0,4 кV L1 from TS - 285 TT 41	3
7	04.07.23		Mykhailopil village	Overhead PL 0,4 кV L1 from TS - 285 TT 43	2
8	04.07.23		Mykhailopil village	Overhead PL 0,4 кV L2 from TS - 285 TT 46	2
9	04.07.23		Mykhailopil village	Overhead PL 0,4 кV L1 from TS - 125 TT 67	3
In general:					21

DTEK DNIPRO GRIDS (Dnipropetrovsk region):

№	Date	Power Grid Division	Settlement	Name of overhead power line	Number of chicks
1	06-07.07.2023	Tsarychanska precinct	Preobrazhenka village	TS - 344 L-2, TT. 17	2
2	06-07.07.2023		Preobrazhenka village	TS-737 L-2 TT.38	3
3	06-07.07.2023		Preobrazhenka village	TS-344 L-1 TT.34	3
4	06-07.07.2023		Preobrazhenka village	TS-349 L-2 TT.29	3
5	06-07.07.2023		Dragivka village	TS-148 L-2 TT 22	2
6	06-07.07.2023		Dragivka village	TS-148 L-1 TT 58	3
7	06-07.07.2023		Dragivka village	TS -147 L-3, TT. 10	3
8	06-07.07.2023		Dragivka village	TS-756 L-1 TT 37	2
In general:					21
In general DTEK Grids:					42