

Protection of bat colonies in attics in Hungary, Romania, Slovakia and Ukraine - ongoing results of the international project HUSKROUA- BAT4MAN

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spoločnosť
pre ochranu
netopierov
na slovensku



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ENI Cross-border Cooperation Programme
2014-2020



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This project was born in response to a negative attitude of a large group of local people in the Cross Border area toward bats. Every year we find out the loss of sites that were used by colonies of bats, which are unwanted guests of sacred buildings like churches or castles.. The most common thing is that building managers close the flying entrances to their shelters. The problem is that state institutions do very little or nothing to save them. Bat shelters need to be taken care of, attics where guano accumulates need to be cleaned regularly, but the State conservation of nature and Ministry of the Environment does not set aside special resources for that. When no one cares about the problem, the parishes decide to end the process with bats and prevent them from occurring in the attics in the future.

BATS are IN DANGER





Fortunately, thanks to the lead partner – The Econsult association from Romania, and other partners - The Hungarian Ornithological and Nature Conservation Society (MME), also known as BirdLife Hungary and Institute of ecological and religious studies from Ukraine, we were able to obtain the project that at least partially and temporarily addresses this situation in the conservation of bats.

WHO ARE BEHIND THE SCENCES?



THE ECONSULT ASSOCIATION

The lead partner of the project



BIRDLIFE HUNGARY

Hungarian Project partner



SLOVAK BAT CONSERVATION SOCIETY

The Slovakian Project partner



INSTITUTE OF ECOLOGICAL AND RELIGIOUS STUDIES

The Ukranian Project Partner



<https://bat4man.ecoedu.ro>
<https://bat4man.netopiere.sk>
03/2020 - 03/2022

Our Aims



SUPPORT CROSS BORDER ACTIONS

support the sustainable use of the environment in cross border regions of Hungary, Slovakia, Romania and Ukraine



INFORM LOCAL COMMUNITIES

by supporting public awareness campaign



SUPPORT JOINT PROTECTION OF BATS

joint protection of bats in the frame of active conservation actions.



GOOD PRACTICES

imparting good practices for local communities.

The project allowed us to create a new database of nursery colonies, which we lacked for years to record data. The database includes input information about the object, whether it is a building or an underground space that is used by the nursery colony. The result of a specific shelter inspection is also entered there - ie the occurrence data. Last but not least, we mark the proposed or implemented protective measures, including photo documentation.

You can see a visual view of one site on the left in the picture.

As there was a lack of funding for monitoring and mapping of nursery colonies for several years, the basis was a survey of the area. Our project area is the Prešov and Košice region, approximately 1/3 of Slovakia.

On the right you can see a map that shows the visited sites during the two seasons of project implementation. More than 200 localities were inspected. Mainly localities were inspected, from which we had data on the occurrence of bats from the past, from the 70s and 90s. Localities with known significant colonies, which were last monitored in 2015, were also inspected. There were recorded data concerning presence and absence of bat species, presence of predators (owls, raptors, martens), features of the building and threatening factors (for example existence and type of illumination, future renovation plans etc.).

Last but not least, the state of guano pollution of the tower or attic and the need for cleaning or technical modifications in shelters were evaluated (for example, modification of flying entrances, installation of wooden floors for guano capture, etc.).

Databáza reprodukčních kolónií Lokality Moje Register 

Klávesové skratky Údaje máp ©2021 GeoBasis-DE/BKG (©2009), Google

CLIMATE CHANGE RISKS

Several studies suggest that climate change have serious negative effects on loft-dwelling bats – warming and overheating of their shelters cause mass mortality. On selected colonies in attics we studied climatic condition by dataloggers. Dataloggers were installed in 10 shelters in order to monitor temperature and humidity during the entire season of bat reproduction. The summer of 2020 was mild and there was no overheating of the shelters, which would cause mortality in the colonies. In previous years, when we had not yet had the opportunity to monitor the temperature conditions, we observed massive deaths of individuals of the Geoffroy's bat (*Myotis emarginatus*) in several localities.

Estimation of impact of climate change risks and light pollution



2020/ 6/26 10:40

2020/ 6/26 10:43

VALKOV temperature measures

We placed two dataloggers also in the attic of the most important colony of Geoffroy's bat (*Myotis emarginatus*) in Europe – nursery colony with a number of approximately 2500 individuals. One datalogger was placed at the very top in the attic and the second about 2 m lower on the rafter, where the colony often sits. The attic strongly absorbs sunlight because it is dark in color and without a ventilation hole.

According to a studies from bat boxes, bats avoid temperatures above 40 ° C. If the shelter overheats, the bats leave the bat box or fly to the lower parts in the attic. Overheating occurred for 150 hours almost every day in July and August in the highest part of the attic. In the part about 2 m lower, where the colony used to hang, the temperatures were lower and the moment of overheating occurred only three times - on June 29, July 7 and 11, when the temperature reached 40-41 °C.

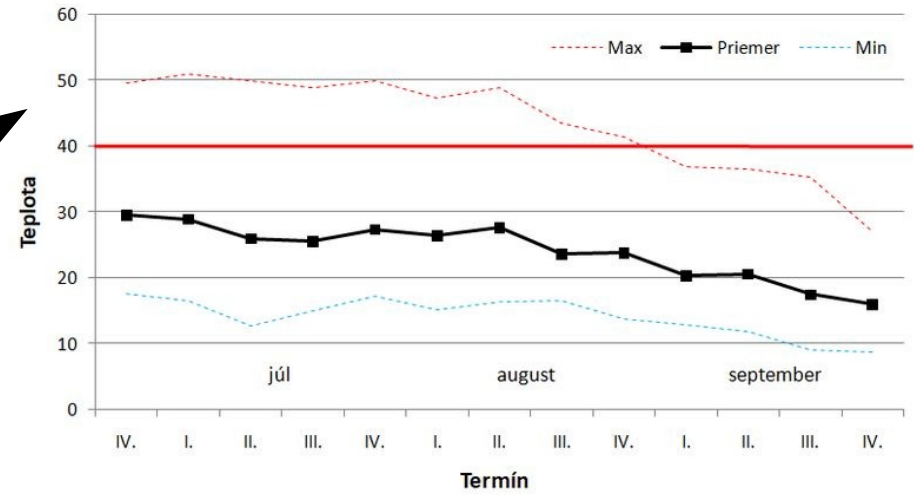
During the reproductive period, we also monitored the death of young individuals on 26.6.2020, 17.7.2020 and 11.8.2020. Mass deaths in 2020 and also in 2021 were not found in this colony, only up to 10 individuals were found, which is natural.

In this example, you see how important the different levels in the attic are, where bats can hang and cool off on hot summer days. Or at least not to be exposed to very high temperatures that could cause deaths in females or young.

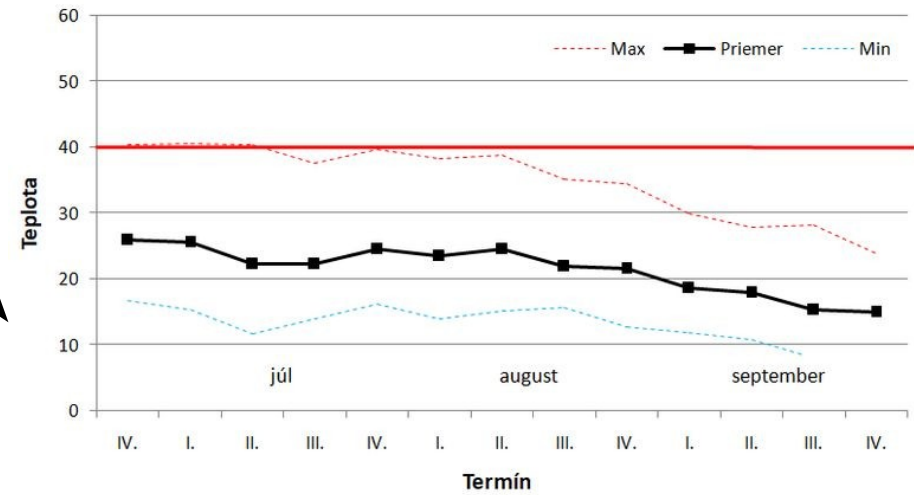
Lower levels for hanging can also be created additionally for bats, for example by hanging some elements such as wooden boards or pallets horizontally on existing beam structures in attics. I've never seen Geoffroy's bats to be hanged on a stone wall to cool off, unlike the colony of the Greater mouse-eared bat (*Myotis myotis*) which they do commonly.



Týždenné teploty v kolónii Vaľkov - vrch podkrovia



Týždenné teploty v kolónii Vaľkov - na krokve



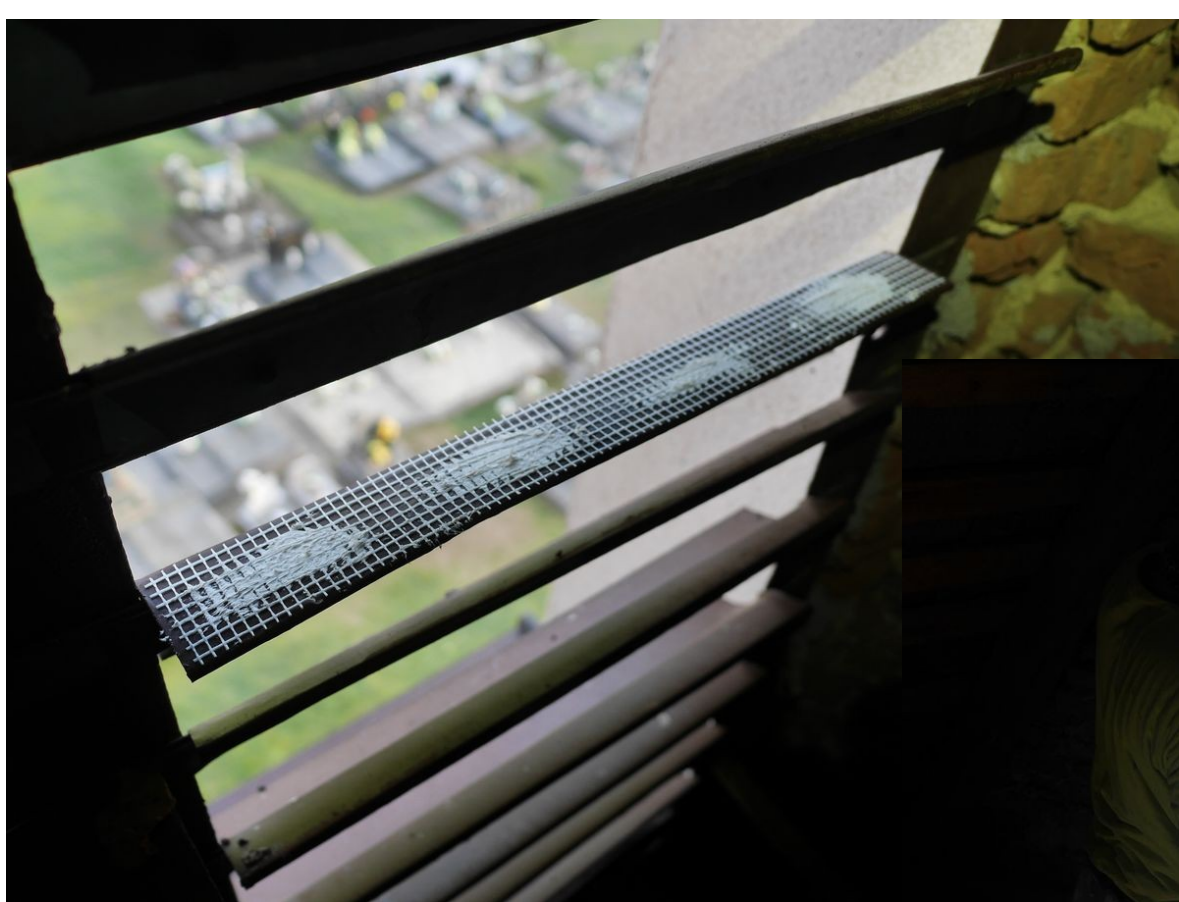
Improve secure shelter opportunities

In several shelters, we made improvements that helped both bats and buildings. We technically modified the flying entrances for bats. We also solved problems with the occurrence of pigeons, which degrade the interior of towers and attics, and we try to design and implement solutions to prevent entry into these areas.

We also aim to establish an artificial roosting possibilities like installing bat boxes, as a solution for the lack of crevice shelters. Because this project not only protects bats, but is focused on the care of sacred buildings, we also solved problems with the fall of guano into the interior of churches by installing chimney roofs on the openings in attic.

Creating new bat shelters by installing Bat boxes / Improving secure shelter opportunities for bats in the attics









We also solved the jamming of bats in gutters. A strange situation occurred in April, the attic where the bat colony was supposed to hang was empty. We found the female colony stuck in the back in new gutters. Unfortunately, 45 female bats died, but 25 females still alive, exhausted, and cooled were taken to rehabilitation. The problem occurred due to change of the flying entrance after the reconstruction of the church. The original flying entrance was closed, and was replaced by another – new flying entrance. The bats did not accept him and tried to get into shelter through the original flying entrance, until they finally got stuck in the gutter trap. The gutters also lacked cover grilles, which we later installed. We also restored the original flying entrance on the facade, which bats have been using before.





2021/ 4



2021/ 4/28 14:23

To the greatest extent, we clean shelters from guano. In some attics, after a few years, a large amount of guano accumulates, which burdens the vaults or contaminates the structure of bells and beams. We usually remove more than a several thousands of kilograms of guano from one church. We have already carried out cleaning in more than 30 churches. We clean the beams so that they do not accumulate moisture and are exposed to air circulation.

As many of the selected buildings are national cultural monuments, all our activities and interventions in the bat shelters were preceded by consultations with representatives of the regional monument offices. At these meetings we preliminarily agreed on the conditions for the measures and then we officially applied for a letter of permission.















Warning plates

Warning / awareness raising boards with information about legal protection of bats are placed in buildings with significant bat colonies. The boards contain contact information too, if necessary attic reconstruction. 20 such boards will be placed in Slovakia and 40 small boards will be placed near to the flying entrances, with inscription “Attention! Flying entrance for bats, do not close.”

- preparation of content and design and assignment of production of **warning plates** (small and large) feb2021
- start of installation from March 2021



CHRÁNENÝ BIOTOP NETOPIEROV

Podkrovné priestory tohto objektu sú úkrytom netopierov. Všetky plánované práce, ktoré môžu ohroziť chránené živočíchy musia byť konzultované so Štátnou ochranou prírody SR (www.sopsr.sk). Ide o tieto činnosti:

- rekonštrukcia a výmena strešnej krytiny
- impregnácia a nátery drevených konštrukcií
- utesňovanie strechy a fasádne úpravy strešného štáblónu
- zásahy do vletových otvorov – uzatváranie a zmeny prekrytia okien
- zmeny spôsobu využitia podkrovného priestoru
 - výrub stromov a krov v okolí budovy
 - vonkajšie osvetlenie budovy
- pozorovanie a fotografovanie živočíchov

Všetky druhy netopierov na Slovensku sú zákonom chránené. V zmysle § 35 ods. 1 zákona 543/2002 je zakázané chráneného živočícha odchytať, úmyselne zraňovať alebo usmrtiť v jeho prirodzenom areáli, ďalej rušiť najmä v období hniezdenia, rozmnožovania, výchovy mláďat, zimného spánku alebo migrácie.

Starostlivosť o túto kolóniu netopierov zabezpečuje:

Spoločnosť pre ochranu netopierov na Slovensku

Andraščíkova 1, 08501 Bardejov, 0910 946 793, www.netopiere.sk

Maďarsko-Slovensko-Rumunsko-Ukrajina ENI Program cezhraničnej spolupráce 2014-2020



PARTNERSTVO BEZ HRANÍC

Spolufinancované Európskou úniou







Presents

We have also prepared gifts for cooperating organizations, for priests, church workers, administrators, volunteers and helpers. Without all these entities, we would not be able to meet the goals of the project, and we are very grateful for their cooperation.

Presents for cooperating entities

- Small prizes to local people – cups and eco-bags for cooperating entities, volunteers and people who are interested to by involved into the project activities
- More than 20 volunteers and 15 cooperating parishes have so far been rewarded with this gifts



Presentation tables

We award "Bat friendly building" presentation tables to the administrators of the buildings where the important colony of bats occurs. This table is to be placed at the entrances and serves to inform the public that the building is not only a cultural and historical monument, a building used for religious ceremonies, but also provides a unique home for bats.

- preparation of design and assignment of production of presentation tables “Bat Friendly Building” feb2021
- start of installation from March 2021



OBJEKT PRIATEĽSKÝ K NETOPIEROM

Maďarsko-Slovensko-Rumunsko-Ukrajina ENI Program cezhraničnej spolupráce 2014 — 2020 „Partnerstvo bez hraníc“







Information panels

Tourists and visitors can learn more about bats in 5 locations through information panels. Each panel contains information about the specific species of bats found in this site, since they use the attic of the church, how we care for them, and that guano is an excellent fertilizer for gardens.

A group of tourists from Poland and Ukraine also took part in one of the information panel installations. They were interested in cultural monuments and with a lecture on bats we diversified their knowledge of values in our region.







V podkroví tohto kostola žijú tri druhy netopierov. Reprodukčnú kolóniu o počte vyše 1500 samíc tvorí **netopier veľký** (*Myotis myotis*). Sprievodné sa vyskytujú **podkováre malé** (*Rhinolophus hipposideros*) v počte približne 10 jedincov a štrbiny pri kamenom múre využívala donedávna skupinka **raniakov hrdzavých** (*Nyctalus noctula*). Raniak je typickým stromovým netopierom, preto boli tieto jedince v kostole vzácnosťou. Raniaky sa z podkrovia presídili do stromových dutín v lipách, ktoré rastú pred kostolom. Samičím kolóniám sa tu vďaka vhodným klimatickým podmienkam darí, ročne úspešne vyvedú z úkrytu desiatky mláďat. V roku 2021 prešiel kostol komplexnou obnovou vrátane rekonštrukcie krovu, výmeny strešnej krytiny, strešných okien a fasádnych úpravami. Popri obnove myslela farnosť aj na ochranu netopierov, a ponechala netopierom voľné vletové otvory do podkrovia.

Netopier veľký je jedným z našich najväčších druhov netopierov (rozpätie krídel 40cm). Vytvára početné kolónie až niekoľko tisíc jedincov na jednom podkroví, kde sa rozmnožuje. Zimuje v podzemí pri teplote cca 6–8 °C. Na zimoviská migruje aj do 200 kilometrov. Má zaujímavú lovnú stratégiu. Loví v otvorených lesoch, kde počúva zvuky hmyzu ležúceho v hrabankách. Keď zaznamená väčší hmyz, pristane a korisť – hlavne bystrušky a väčšie chrobáky nahaňa na zem. Vylieťa z úkrytu približne 20 min. po západe slnka. Netopiere majú význam v prírode hlavne kvôli regulácii populácií hmyzu.

Podkovár malý je jedným z najmenších netopierov na svete, váži iba 5 až 9 gramov. Má silné nohy, ktoré používa na uchopenie skál a konárov, a napriek malým očiam dobre vidí. Pri love je obratný, väčšinou lieta do 5 metrov nad zemou. Živí sa drobným hmyzom – medzi jeho obľúbené koristi patria muchy, komáre, mory a pavúky. Žije v teplých lesoch a v blízkosti vodných tokov. Preletuje len na krátko vzdialenosti a zimuje najmä v jaskyniach, baniach a pivničkách.

Najlepšie hnojivo vzniká v noci. Netopieri trus – guano je všestranné organické hnojivo, ktoré sa zberá z miestnych zdrojov na Slovensku. Je zložené približne z 15% dusíka, 1% fosforu a 2% draslíka. Je ideálne pre izbové rastliny, zeleninu, ovocné stromy, kvety, trávniky a okrasné rastliny.

Všetky druhy netopierov sú zákonom chránené. spoločenská hodnota netopiera veľkého aj podkovára malého je 1000,- Eur, spoločenská hodnota raniaka hrdzavého je 500,- Eur.



Premonštrátsky kláštor s Kostolom svätého Jána Krstiteľa

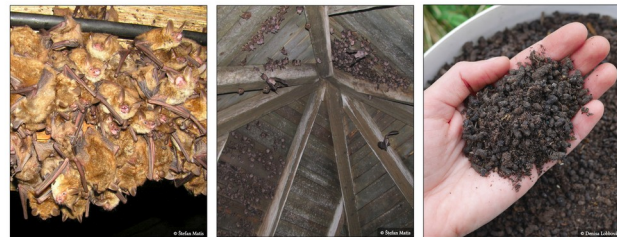
JASOV

Objekt priateľský k netopierom

Rozsiahle podkrovie priestorov kláštora poskytuje priestor pre úkryt až **osmých druhov netopierov**. Prvé zmienky o ich výskyte na tomto mieste nájdeme už zo začiatku 80. rokov minulého storočia, kedy tu bol najpočetnejším druhom **netopier veľký** (*Myotis myotis*) tvoriaci kolóniu samíc s počtom až vyše 500 jedincov. Tento druh však do začiatku 90. rokov úplne zmizol a nahradili ho kolónie ďalších vzácných druhov. Za najzaujímavejšie sa dajú označiť **podkováre veľké** (*Rhinolophus ferrumequinum*), **podkováre južné** (*R. euryale*) a **netopiere brvité** (*M. emarginatus*), ktoré tu vytvárajú spoločnú kolóniu so 700–900 jedincami. Letné zoskupenia týchto troch druhov netopierov sú mimoriadne vzácne a v celej Európe ich nájdeme iba na niekoľkých miestach. Menej početné, avšak tiež pravidelne sa vyskytujúce druhy sú **podkovár malý** (*R. hipposideros*), **večerníka pozdná** (*Eptesicus serotinus*), **ucháč sivý** (*Plecotus austriacus*), alebo aj vzácny **netopier pobrežný** (*M. dasycneme*). Väčšina spomínaných druhov netopierov sa sem v apríli každoročne vracia, aby zvyčajne začiatkom júna porodili a počas leta odchováli svoje mláďatá. Vďaka dlhodobému výskumu vieme, že podkováre južné sa z podkrovia kláštora v septembri presunú do otvorených priestorov Jasovskej jaskyne a po období párenia – koncom októbra odlietajú na svoje zimovisko do 8 km vzdialenej Drienovskej jaskyne.

Netopiere predstavujú veľmi dôležitú súčasť našej prírody a ako **nočné hmyzožravce sú nenahraditeľnou súčasťou potravného reťazca**. Ich účinná ochrana zohráva dôležitú úlohu pre nás všetkých.

Najlepšie hnojivo vzniká v noci. Netopieri trus – guano je všestranné organické hnojivo, ktoré sa zberá z miestnych zdrojov na Slovensku. Podľa analýz je zložené približne z 15% dusíka, 1% fosforu a 2% draslíka. Je ideálne pre izbové rastliny, zeleninu, ovocné stromy, kvety, trávniky a okrasné rastliny. Podkováre kláštora podlieha pravidelnému monitoringu a čisteniu od guána. Všetky druhy netopierov sú zákonom chránené, spoločenská hodnota netopiera veľkého, netopiera brvitého aj všetkých troch druhov podkovárov je 1000,- Eur.



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Bat map for bat lovers

Visitors can find these places on our website on the bat map for bat lovers, in Slovak and English language. The map contains 5 different categories of locations. Some sites may also be visited in person, such as the site of a traveling exhibition on bats, sites with information panels or public events. Visiting the colonies are illegal and not allowed, and the administrators of the buildings and parishes have also been warned not to allow strangers into the buildings.

Batmap for bat lovers

Touristic map for bat lovers

- 5 layers of sites:

1. Places to learn more about bats (info panels)

2. Improved shelters for bats

3. The colony is monitored by a live-stream camera

4. Itinerary exhibition

5. Public events



← SK-Tulčík - Roman Catholic Church of St. Simon and Judas →

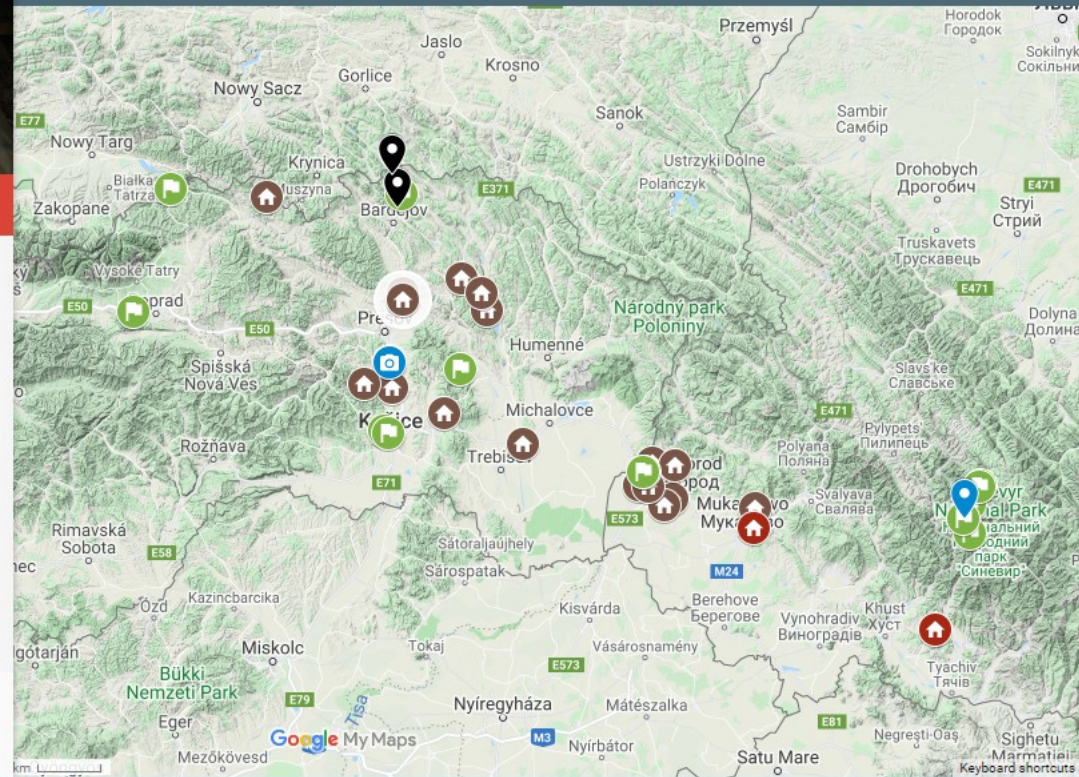
názov

SK-Tulčík - Roman Catholic Church of St. Simon and Judas

popis

We have completed cleaning the tower from guano and preparatory work for laying the floor, which makes cleaning easier in the future.

Article in Slovak language and photogallery here: <https://bat4man.netopiere.sk/lokalita/tulcik-rksvsimona-a-judu-4908912-2131211.html>



Categories



Itinerary exhibition about bats



Places to learn more about bats (info panels)



Improved shelters for bats



The colony is monitored by a live-stream camera

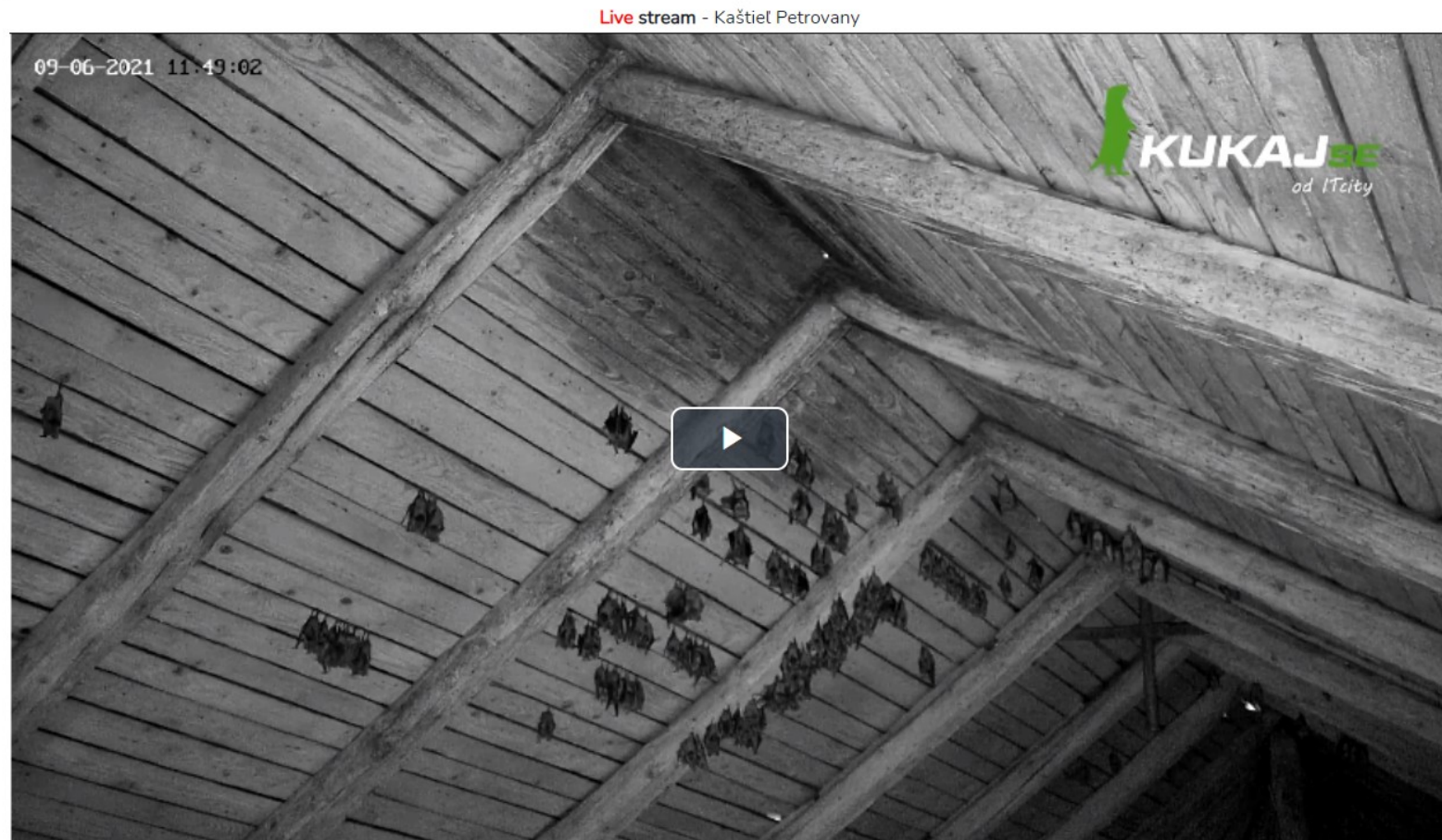


Public events

LIVE camera

The footage from the life of the colony *Myotis myotis* with about 300 individuals was broadcast live, both professionals and the general public had the opportunity to watch on our website this year.

LIVE stream 2021



Itinerary exhibition

All project partners prepared an exhibition based on common developed ideas. It is designed to explain the value of bats. Together 13 roll up banners teach people that bats are really important both economically and environmentally – as they provide ecosystem services. The exhibition is moved from settlement to settlement (together 12 places in Slovakia at least) and will serve for the purposes of environmental education even after the end of the project. It is exhibited mostly in museums, information centers, schools, community centers, castles, etc.

Interactive itinerary exhibition travels through the regions



B4M_rollup_01



B4M_rollup_02



B4M_rollup_03



B4M_rollup_04



B4M_rollup_05



B4M_rollup_06



B4M_rollup_07



B4M_rollup_08



B4M_rollup_09



B4M_rollup_10







Events for public

Several evening events were organized – as part of participation in the nature camps: captures of bats into the mistnets on water surfaces and observing an emergency activity of bats from the attic of the church. Exceptionally we accompanied people and public to some bat shelters.

Events for public









Workbook for children

The workbook were developed to teach children in an interactive way. It is distributed in the frame of the exhibitions, conferences, send to schools, and it is used at different events.

Workbook for children in 4 languages





We are preparing...

- Documentary film with narration in 5 languages
- Bat box preparation workshop
- Production of floors for guano capture
- Guideline of bat protection in 5 languages (AJ, HU, SK, RO, UA)

Documentary film

A 15 minute long film will impart information about the ecological and economical importance of the bats, the necessity of its conservation and good practices for local communities. All the footage will take in each country by all the project partners, and the film will realize with narration in 5 languages. The film will be accessible online at our websites and social media.

Bat box preparation workshop

Production of bat boxes and their installation in attic spaces, we will support shelter possibilities for crevice dwelling species of bats. We will involve local communities in the protection of bats.

Guideline of bat protection in 5 languages (AJ, HU, SK, RO, UA)

A guideline will be made by using the data of the survey results. Solutions will be presented for bat protection, advices and recommendations for renovators, specialists, stakeholders. It will contain methodological instructions of good practices for local communities, case studies from localities where conservation measures were implemented, assuring the possibility of sharing experiences. This common guideline should be expected at least 75 pages. We plan to improve the graphic design, use quality photographs, take valuable experience from colleagues from the Czech Republic, make professional drawings of technical solutions.



Production of floors for guano capture

New floors that capture guano will make it easier to clean church towers and attics in the future.

Thanks to the bat4man project, we have made many positive interventions for the protection of colonies, but the main output of this project is to show our state institutions what threats our bats face and to what extent, and to persuade ministries to allocate funds to address this issue in the future, if we want to keep shelters and save them.

Thank you for your attention!



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