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### Zooreport

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#### Editor:

Brno Zoo and Environmental Education Centre, semi-budgetary organization U Zoologické zahrady 46, 635 00 Brno, Czech Republic IČ: 00101451

tel.: +420 546 432 311 fax: +420 546 210 000 e-mail: zoo@zoobrno.cz

#### Puhlisher

Moravian Museum Zelný trh 6, 659 37 Brno Czech Republic IČO: 00094862

#### Editor's office addres

Zoo Brno a stanice zájmových činností, p. o. redakce Zooreportu U Zoologické zahrady 46, 635 00 Brno, Czech Republic tel.: +420 546 432 370 fax: +420 546 210 000

#### Fallendal based.

e-mail: stuchlik@zoobrno.cz

Mgr. Jana Galová, Bc. Jana Hadová, MVDr. Martin Hovorka, Ph.D. (Chairman of the Editorial Board), Ing. Miroslava Piškulová, Bc. Eduard Stuchlík and Mgr. Michal Vaňáč (Lead Editor).

#### Emendation:

Rosalind Miranda

The author of unmarked photos is Bc. Eduard Stuchlík.
Illustration: Natálie Staňková.

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UNSALEABLE

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#### **EDITORIAL**

Dear ladies and gentlemen, readers of ZooReport, & to all the fans of Brno zoo,

We are incredibly grateful to you, to each and every one of you. We suspected last year that closing the zoo would continue to be detrimental to the zoo this year as well. Unfortunately, we were right. The unfavorable situation was exacerbated by another long period when no visitors could come to the zoo. In the end, we did succeed in managing everything. I already thanked you all in my column last year, but I want to thank you again. Without you, we could not imagine how we would have succeeded. But we are here, even though we still have a few restrictions.

As happened last year, in 2021 there will be fewer editions of ZooReport, only two in fact. I hope you will understand. We are trying to move the maximum amount of financial contributions to where they are most needed, and are already considering changes into next year. If any occur, we will certainly let you know. However, we will certainly keep you informed about all the events in the zoo as best as we can.

And now to the content of this issue: To put it mildly, I know a few people who do not like snakes. It is a great pity, as they are beautiful creatures worthy of our attention. They have several remarkable features that you can read about in the first article. And it is my hope that after reading that article, some people might change their views of these fascinating animals and learn to appreciate them.

The following article deals with one specific subspecies of snake that we are lucky enough to be the only ones in Europe to house. You can find it in the Exotarium, but its natural home is in the northeastern United States of America. See page nine for more information.



After an excursion to the serpent empire, we then look at how we managed the previous months. Our success depended a lot on your help: last year's adoptions, the most popular animals, and attendance. In addition, we will also look at the new project that we have launched in this context, making it possible to contribute a smaller amount to a particular animal's feeding.

The other two texts are about our young creatures: First, we will focus on small kangaroos in the pass-through exposure; and we will also get a closer look at the male Srí Lankan leopards. They first saw the light of day at the beginning of June. As you may know from our photos and videos on social networks, their mother takes excellent care of them, but they can be rascals though in the nicest possible way.

I admit that I am delighted with our rescue programs. One of them is dedicated to the protection of Eurasian hoopoes in South Moravia. Its primary mission is to strengthen the hoopoes' population and contribute to more extraordinary biodiversity in the places that these endangered birds inhabit. This gradually increases both the diversity and the frequency of individual representatives of the plant and animal kingdom in the landscape. And as a bonus to all this, the next generation of these beautiful birds is coming out of the birdhouses provided for them in this project.

Along with the hoopoe, other species that live on short-bladed steppes are naturally protected by insects and by both rare species of our whinchats or red-backed shrikes.

In the next issue of ZooReport, we will let you look under the lid of another rescue project, so you really have something to look forward to. But for now, I wish you pleasant reading.

Michal Vaňáč



### THE MAGIC OF SNAKES

There is probably no animal in the world that can cause so many different emotions in people as a snake. Since ancient times, the serpent has been a symbol in many cultures. In terms of symbolism in our culture, the snake is a highly complex creature, which perhaps only mirrors people's relationship to it. On the one hand, the snake scares us; on the other, we are fascinated and attracted by it.

We would probably find the cult of the serpent in all cultures and religions of ancient civilizations. Here are some examples: There is the serpent that offered Adam and Eve the apple of knowledge; and the serpent on the rod of Asclepius, which is the symbol of medicine; and the uroboros, which is an ancient symbol depicting a serpent eating its own tail to form a circle, which came to Western tradition from Egypt; also from ancient Egypt is their goddess Merseger, who had a cobra head.

Above all, however, it is an animal deeply misunderstood by humankind; and, as we have seen with many other animals, it can arouse our fear, often unnecessarily.

#### They are (almost) everywhere!

Today, science recognizes more than 3,400 species of snakes. They live on all continents except Antarctica. However, you will not only meet snakes on solid ground. There are also species which live in the water. Although they occur in countries

where winters are harsh, all snakes, like all reptiles, are ectothermic animals. This means that they have a body temperature dependent on the temperature of the environment in which they are located. In order to be capable of metabolism, they must adjust their behavior to be warmed to their "operating" temperature. Professionally, we can call this behavioral thermoregulation. It is therefore not at all accurate to claim that reptiles are cold-blooded. Not at all, as their blood must be warm in order for them to be able to move. If a snake lives in a place where there are cold months, it must hibernate. In this condition, which can be defined as a state of rigidity and significantly slowed metabolism, the snake will stay in a shelter until it again is warm outside. However, it is not said idly that "snakes and scorpions were pouring out on St. George's day" (23 April), as it is around then that the weather tends to warm up. Of course, tropical snakes do not have to worry about this.

#### Perfect predators

All snakes are predators. Some specialist species disdain mice and feed exclusively on other snakes, fish, insects, or even earth-



◀ *The young of a green anaconda.* Photo: Petr Šrámek



Reticulated python with its prey (a bat). Photo: Petr Šrámek



Common European viper. Photo: Petr Šrámek



Boa constrictor. Photo: Petr Šrámek

worms and eggs. However, most snakes have one thing in common in this regard: They can survive a long time without food. Of course, this is usually proportional in that the bigger the snake is and the more it ate at its last meal, the longer it can go without eating again. The interval between meals can be several months. For a snake to be able to hunt, it needs senses, reflexes, and other "gear" that allow it to detect and catch prey. And some of this equipment belongs exclusively to snakes but to no other vertebrates. For example, pythons and rattlesnakes have unique holes with thermoreceptors above their mouth. These can sense the presence of a mammal or bird, which usually have a higher body temperature than the surrounding area, at a distance of up to a few meters.

All snakes have a unique jaw which is not tightly connected to their skull. Even the upper jaw is attached to the skull only by ligaments and muscles, so the jaws are very movable and expandable, allowing a snake to swallow prey much wider than its mouth. Thanks to this, an anaconda can swallow a capybara or a cayman, or an egg-eating snake can swallow a whole egg with a firm shell. The shell is then broken by contact with



*Yellow-lipped sea krait.* Photo: Petr Šrámek

growths on its vertebrae, and the egg content continues through the digestive tract while the snake spits out the broken shell. Snakes do not chew their food, but just push it into their body with head and mouth movements helped by backward-curved teeth.

#### And what about venomous snakes?

Now that we're talking of teeth, it is necessary to learn about venomous snakes. Of the total

number of species of snakes, only a small percentage are venomous. Various sources put the numbers at around 400 to 600 species, and it is estimated that only about half of them can be life threatening for humans. Venomous snakes can be further divided according to the effect of the poison. Some are neurotoxic, while others have hemotoxic or cytotoxic components. Usually one of these predominates in a particular family of snakes.

The only poisonous snake living in the Czech Republic is the common viper (*Vipera berus*).

#### Maternity care

Our only poisonous snake is a fascinating creature. It is the most widespread species of terrestrial snake in the world. The secret of its success is probably its way of reproduction. The viper does not lay eggs; it is viviparous. Babies remain in the mother's body and are nourished by a primitive placenta and yolk sac. As a result, the common viper can live even in cold areas, as the female gives the developing young the warmth of her own body, which it maintains by thermoregulation, as explained above. In addition to our common viper, sea snakes, some water snakes, and even boas and all four species of anacondas are viviparous. All other snakes, which means most of them, are oviparous. Their maternal care consists of choosing an appropriate safe place to lay and then incubate the eggs. And that is not simple. Therefore, some species patrol their eggs after laying. A python will often encircle its clutch of eggs with its body, and even warm them by shaking its muscles. An unknowing observer may then think that such a snake has hiccups! Until the eggs are hatched, the females do not hunt, and only leave the clutch in order to warm themselves. It is impossible to write fully about such a colorful and extensive topic as snakes in a single magazine issue. To give you a bit more information in conclusion, therefore, we will now tell you about a few interesting records and curiosities, things which zoo visitors often ask:



Tiger snake. Photo: Petr Šrámek



Carpet python. Photo: Petr Šrámek

#### The longest:

Records claim that the longest snakes are reticulated pythons (Python reticulatus). However, specific numbers are difficult to find because trusted sources and their accounts are often questioned. Pittsburgh Zoo claims they had a 9.15meter-long python, which they named Colossus. However, this information has been questioned by the professional public, so we instead have to say that the longest snake is perhaps a python called Medusa, 7.67 m long, which lived in Missouri and entered the Guinness Book of Records. If we were to name the longest poisonous snake, it would be the king cobra (Ophiophagus hannah) from Southeast Asia. There is data of an individual which was in the London Zoo in 1930. It was 5.71 m long, and weighed almost 12 kg.

#### The heaviest:

Heavyweight supremacy goes to a great anaconda (*Eunectes murinus*) living in South America. It is estimated that an 8-m-long anaconda would weigh, on average, 200 kg. Among the venomous snakes, the heaviest is the diamondback rattlesnake (*Crotalus adamanteus*) which, at a length of 2.5 m, can reach up to 13 kg.



Bornean Kee led Green Pit Viper. Photo: Petr Šrámek

#### The oldest:

The possible attainable age for snakes varies from species to species. The commonly bred corn snake (*Pantherophis guttatus*) can live 15 to 20 years in human care. However, large species live to an even older age. We know of a boa constrictor (*Boa constrictor*) which lived to be 40 years old. His name was Popeye (Pepek), and he lived at the Philadelphia Zoo in the USA.

#### The longest venomous teeth:

The Gabonese adder (*Bitis gabonica*) has the longest venomous teeth. Their jaws are armed with 5-cm-long fangs.

#### The longest snake hunger strike:

We have already said that snakes can survive without food for a very long time under certain circumstances. A *Python reticulatus* holds the world record in the hunger strike field. An individual measuring 6.45 m did not receive food for an incredible 910 days. Unfortunately, he died then.

Ing. Eva Karbanová



Javan spitting cobra. Photo: Petr Šrámek

# Introducing a Unique Species: THE GREAT BASIN GOPHER SNAKE



This unique grass snake has found its home in the Tropical Kingdom. Photo: Petr Šrámek

In the Tropical Kingdom Pavilion you can see an exceptional, attractively colored, massive snake. It is the Great Basin gopher snake (*Pituophis catenifer*); specifically, the subspecies *Pituophis catenifer deserticola*.

"The species is scarce in European zoos, and no other European zoo breeds this subspecies except us. The Great Basin gopher snake is known for its very loud hiss, which is produced through a special modification of its respiratory apparatus, pot flaps," said Petr Šrámek, the curator of reptile breeding in Zoo Brno.

In case of danger, they twist into an S-shape, lift the front part of their body, and flatten significantly, while also rattling the end of their tail. This non-venomous species thus imitates the defensive position of a venomous rattlesnake very well, so it is unfortunately sometimes killed by people who believe it to be that other, dangerous snake.

The Great Basin gopher snake is widespread from Canada to Mexico. The subspecies we breed has its center of occurrence in the northeast of the United States of America. It searches for different habitats, from the Mojave Desert to forests, but prefers open spaces. In nature, it plays an essential role by limiting populations of small rodents, many of which are considered to be significant pests.

We have an adult female at the Zoo Brno, and we are currently looking for a male. However, this is not an easy task, given the small number of this species kept in other institutions.

Michal Vaňáč



The Great Basin gopher snake is widespread from Canada to Mexico. The subspecies we breed has its center of occurrence in the northeast of the United States of America.

Photo: Petr Šrámek

# In 2020, Zoo Brno recorded an increased interest in animal adoption



Great favorites of visitors are also meerkats. Photo: Matyáš Slavík

In this first issue of ZooReport for the year, even though it is not coming out until autumn, we will evaluate last year. Due to the coronavirus pandemic, our garden was closed to the public for almost four months (precisely 112 days) in 2020. Yet, in the summer months, we had an historically record attendance, and an increase in interest in animal adoption and experience programs.

Because of the closure in 2020, 263,479 people visited Zoo Brno, a decline compared to 2019 when 331,298 people came. However, during the summer months of July, August, and September,

a total of 157,453 visited, a record for those three months. Martin Hovorka, Director of Zoo Brno, commented: "The people used Mniší hora as an ideal place for a day trip or an afternoon walk. A big thank you to those who financially supported Zoo Brno in the form of animal adoption last year, an increase of 100% compared to 2019. This shows that our zoo has its fans, who thought about us even when the interest of the media and the public was concentrated on the issue of coronavirus. We are pleased about that, and those people deserve a big thank you."

In 2019, the total number of adoptions was 518, amounting to CZK 1,453,000; and in 2020, 953 adoptions

Another frequent choice for adoptive parents is the Kamchatka brown bear.

Photo: Matyáš Slavík







The price of adoption of individual animals is different, depending on the cost of the food. Prices start at CZK 500. The most expensive is the Katanga lion (pictured), whose adoption costs CZK 60,000. Photo: Matyáš Slavík



animals were arctic wolves, suricates, and red pandas. Adoptive parents could enjoy this year's traditional Day of Adoptive Parents in August.

There was increased interest also in our experience programs in 2020. In 2019, the proceeds from these attractive programs for the public amounted to CZK 373,000; in 2020 it totalled CZK 469,000, even though the garden was only open for eight months.

When the garden was closed, we used various forms of online communication with our supporters, especially on social networks in the form of commented feeding. And we are pleased that you liked our new events in the online space.





We started the Feed Me (Nakrm mě) project in April this year. Photo: Kristýna Božková

## Project Feed Me

New in Zoo Brno this year is Project Feed Me. It is a virtual shopping cart on the e-shop www.brnoid.cz/cs/zoo where it is possible to buy suitable food for selected animals. In this way, people can contribute a small amount to animal breeding and, at the same time, learn what individual species like best.

"During the time that the zoos were closed, we tried to stay in touch with the public at least through our social networks. We are very grateful for the huge wave of solidarity providing an increased interest in the adoption of animals. But we wanted to make it possible for our fans to contribute a smaller amount to the zoo, as well" said Martin Hovorka, Director of Zoo Brno.

How to do it? Just select the animal you want to feed, choose appropriate items from its diet, tell us how much of this food you want to buy, and pay, exactly as you would do in any other online grocery store. The system then sends a "receipt" to your email. The BrnoID.cz website is not intended only for residents of Brno but for all. If someone does not come from the South Moravian metropolis or does not have their profile on BrnoID.cz, it is only necessary to enter an email and password before being able to shop easily.

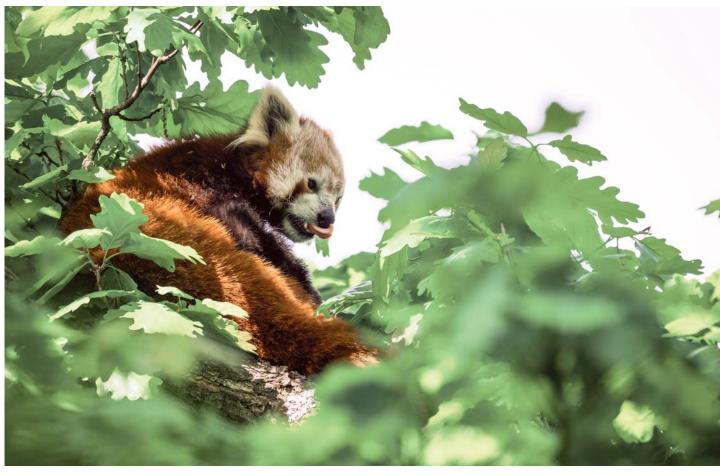
For example, you can buy food for a polar bear or a red panda:

Hi, I am a polar bear, and I am an endangered species. My home is dissolving under my feet, but I do not lose hope. I believe that stopping the melt-

ing of the glaciers will succeed, and my friends in the Arctic will be safe. In nature, we hunt seals, beluga whales, and we will not even despise a dead whale thrown on the shore. Here in the zoo, I get different kinds of fish and meat. Also, I get some fruits or vegetables to diversify my diet a bit.

Hi, I'm a red panda. Although I am a beast, I am mostly a vegetarian. Although I sometimes eat some small animals, the main component of my food is bamboo. Here in the zoo, they give me fresh bamboo every day, and I do not even know where they can get such a quantity of it. And I also am treated to bamboo porridge with grated apple and bamboo granules. As for extra goodies, I receive a small amount of fruit.

Another quick option is a direct payment by phone via your mobile bank-



For example, you can buy food for a polar bear or a red panda. Photo: Matyáš Slavík

# 200 Kč 500 Kč libovolně OR Platba OR Platba OR Platba OR Platba OR Platba

Another quick option is a direct payment by phone via your mobile banking system.

Photo: Zoo Brno

ing system. Just open the app, scan the QR code from the Zoo Brno website, and all the data will be automatically uploaded and sent to you. You can donate CZK 200, CZK 500, or any other amount.

Thank you very much for all your contributions! Although it might seem

as if we are back to normal now, we will undoubtedly still face the consequences of our closures in the years to come. That is another reason why we appreciate every bit of help.



How to do it? Just select the animal you want to feed, choose appropriate items from its diet, tell us how much of this food you want to buy, and pay.

Photo: Kristýna Božková



## Kangaroo Baby Boom



A the beginning of this year, the first female yellow-footed rock wallaby joey left the safety of her mamma's pouch. Photo: Michal Vaňáč

The pass-through exhibition of kangaroos in Zoo Brno experienced a baby boom in the spring – a total of four young. In January, the first female yellow-footed rock wallaby joey left the safety of her mother's pouch, and another eventually followed. And the swamp wallabies were not left behind.

"Two yellow-footed and two swamp young were born last year, and continued to develop in their mothers' pouches. This year, they returned to the pouches only if they felt threatened. Little by little, they also switched from breast milk to a different diet. In total, we now have eleven kangaroos in the exhibition, "said breeder Jana Moravcová.

The female kangaroos may be pregnant at any time of year. The young are born blind, bare and with stunted limbs; they subsequently develop in the mamma's pouch. "It's about 200 days for the yellow-footed rock-wallaby, about 250 days for the swamp wallaby. The breeding of both species is coordinated



Female kangaroos may be pregnant at any time of the year.

Photo: Michal Vaňáč



Nine European zoos breed yellow-footed rock wallabies. Photo: Eduard Stuchlík

within the framework of EAZA, and older young animals will go to other gardens this year," added the curator of mammalian breeding Šárka Mikátová.

Our zoo is the only one in the Czech Republic which breeds yellow-footed rock wallabies. We started in 2015. In the following years, swamp wallabies were also added to their run. The Brno group of yellow-footed rock wallabies currently contains two breeding females, one breeding male, one joey from last year, and these two new ones. The swamp wallaby group also consists of two breeding females, one breeding male, and two new joeys, but without any addition from last year.



The swamp wallaby has dark brown hair, darker limbs and tail, a lighter yellow belly, and often a yellow stripe on the cheeks.

Photo: Matyáš Slavík



### Srí Lankan Leopard Twins were Born in Zoo Brno

Now that you have read about our young kangaroos, we will tell you about another breeding success of Zoo Brno. On Monday, June 7, our female leopard, Nayana, gave birth to two male cubs. In the first days of their lives, they were taken care of ideally, as in Nayana's previous maternity. It is the second breeding of ten-year-old Nayana and our male, Daan, of the same age.

"In the last twenty years, nine Srí Lankan leopards were resident in our zoo at one time or another, but only Nayana and Daan have created a stable and harmonizing pair. The young of this subspecies of leopards are not numerous in zoos, so we are just as happy about them as we were of the first pair born in 2017," said Martin Hovorka, Director of Zoo Brno.

Breeding of Srí Lankan leopards is controlled under an EEP (European Endangered-species Program) within the framework of the EAZA (European Association of Zoos and Aquaria), in which there are currently several dozen listed animals. Only a few leopard cubs are born annually within the EEP. The breeding of the Brno pair is a precious contribution to the program, and to the population of the Srí Lankan leopard.

"Nayana has been looking after her twins from the very first moment. The cubs are active, and we regularly observe them breastfeeding. Despite this, the first fourteen days of each rearing are critical, and we closely monitor every change. But given that it is Nayana's second birth, we believe that everything will turn out well," explained Šárka Mikátová, curator of mammalian breeding, shortly after the birth. She was right, and the little leopards are already regularly making visitors happy. The twins often play together, and sometimes try the patience of their mum.

Two Srí Lankan leopard cubs were born on June 7. Photo: Eduard Stuchlík

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Breeding of Srí Lankan leopards is controlled under an EEP (European Endangered-species Program) within the framework of the EAZA (European Association of Zoos and Aquaria). Photo: Eduard Stuchlík



It is already Nayana's second successful breeding. Photo: Eduard Stuchlík



Daan was born in 2011 in Royal Burgers' Zoo in the Dutch city of Arnhem; and Nayana, in the same year, at ZOO Bratislava. The male and female from their first litter went to Ostrava Zoo and Zoo Jihlava.

In the wild, Srí Lankan leopards are found, not surprisingly, on the island of Srí Lanka. According to IUCN (International Union for Conservation of Nature) estimates, there are only somewhere between 750 and 900 individuals left, and the subspecies is therefore on the Red List as endangered. Typically, they have black spots on otherwise yellowish-brown hair. Each individual's markings are unique, and you cannot find two leopards with the same artwork. In addition, they show sexual dimorphism. Females are significantly smaller than males, whose weight can reach up to 65 kilograms. They are loners, with predominantly night activity. Their domain is mainly in tree branches. The females are pregnant for about three months, and usually give birth to two cubs each time.





The little leopards often play together, and sometimes also try the patience of their mum.

Photo: Eduard Stuchlík

# The protection of the Eurasian hoopoes continues successfully

A total of twenty-five chicks in four years: This is the result of the Zoo Brno project to protect the Eurasian hoopoe in South Moravia. After last year's very successful nesting season, the hoopoes again occupied two nestboxes in each of five selected locations this year. In June, six chicks were hatched in them.



In June, a total of six hoopoes were hatched in unique nest boxes installed by Zoo Brno staff.

Photo: Petr Šrámek



The hoopoe population in the Czech Republic has stabilized, but there are only between 70 and 140 pairs.

Photo: Matyáš Slavík

The population of hoopoes in the Czech Republic has stabilized, but there are only between 70 and 140 pairs. The main causes of such a low number of hoopoes is the loss of their natural environment, and improper management of agricultural land. "The main mission of this rescue program is not only to strengthen the population of the hoopoes but also to contribute to greater species diversity in places that endangered birds inhabit," explained Petr Suvorov, coordinator of the project and curator of bird breeding at Zoo Brno.

Along with the hoopoe, other species that live on short-bladed steppes are naturally protected by insects and by both rare species of our whinchats or red-backed shrike. This gradually increases the diversity and frequency of individual plant and animal representatives in the landscape.

"As a typical representative of our birds, people know the hoopoe well, and therefore the project has its permanent promoters and supporters. It is one of the four rescue projects of Zoo Brno for which the public can contribute financially all year round," added Petr Šrámek, the field worker of the project.

Hoopoes inhabit the open landscape of meadows and pastures with small trees, occupying empty cavities. Unlike woodpeckers, their beaks are not adapted to cutting, so they cannot create suitable rearing places by themselves. In 2017, the South Moravian Guards, following the example of their Austrian colleagues, identified five sites in which to put hoopoe nest boxes, which provide the birds with possible new nesting sites. They then regularly monitored and repaired the boxes if necessary. The project partners of Zoo Brno then take over the practical management of food sites.

"For understandable reasons, we do not give their exact locations, so that the birds can nest undisturbed. Hoopoes fly to Africa for the winter, and many pitfalls await them on their long journey: They can fall victim to predators, and are also an easy target for hunters who kill migrant birds. Songbirds are the hunters' main victims, but also storks and pelicans can lose their lives. We are glad that we can create suitable



The main causes of the low number of hoopoes is loss of their natural environment and inappropriate farming.

Photo: Matyáš Slavík

conditions for the hoopoes, at least as concerns their food and nesting," added Petr Suvorov.

To support the conservation of the Eurasian hoopoe, Zoo Brno draws funding from the landscape care program of the Ministry of the Environment, which will, however, cover only part of the cost. We also received a grant from Norway of 381,000 CZK for the project. This subsidy will help to secure two new locations.

We will be very grateful for every financial gift from the public. You can contribute to the rescue programs of Zoo Brno by transferring money to this account: 295947196/0300.



The hoopoes inhabit the open landscape of meadows and pastures with small trees, occupying empty cavities.

Photo: Matyáš Slavík

Become part of the wild nature!

# VIRTUAL EXPEDITION OF BRNO ZOO

Unique experience in centre of Brno.

