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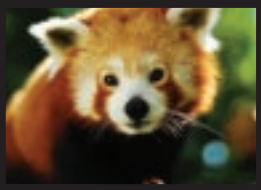
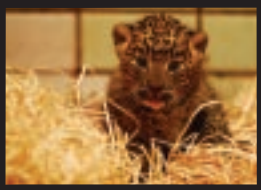
ZOO OSTRAVA

The Annual Report 2008





ZOO OSTRAVA
BOTANICKÝ PARK

Michálkovická 197, 710 00 Ostrava, Czech Republic
www.zoo-ostrava.cz

Zoological Garden Ostrava
Address: Zoo Ostrava, Michálkovická 197, 710 00 Ostrava, Czech Republic
tel.: +420 596 241 269, **fax.:** + 420 596 243 316
Internet: www.zoo-ostrava.cz, **E-mail:** info@zoo-ostrava.cz

Compiler of the annual report: Šárka Bartáková and Petr Čolas
Editor of the cover page: Zdeněk Berger
Photos: Pavel Vlček, Jan Pluháček, Zdeněk Berger, Ivo Firla, Yveta Svobodová, Jana Kálnová, Dagmar Marková, Hana Tomková, Tomáš Hulík, Enrico Gombala, Jitka Vokurková, Zoo Belfast, Zoo photo library
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Founder of the zoo: Statutární město Ostrava
Residence: Prokešovo nám. 8, 729 30 Ostrava
Chief Magistrate: Ing. Petr Kajnar, tel: 599 443 131, fax: 596 118 861, pkajnar@ostrava.cz

Director: Ing. Petr Čolas, tel. + fax: 00420 596 243 316, director@zoo-ostrava.cz

Vice Director, Spokesman: JUDr. Stanislav Derlich, derlich@zoo-ostrava.cz

Head of Dendrological Department: Ing. Tomáš Hanzelka, hanzelka@zoo-ostrava.cz

Secretariat: Bc. Monika Ondrušová, ondrusova@zoo-ostrava.cz

Head of Economy Department: Ing. Pavlína Konečná, konecna@zoo-ostrava.cz

Heads of Zoological Department: Ing. Ivo Firla, firla@zoo-ostrava.cz, Mgr. Jiří Novák, novak@zoo-ostrava.cz

Assistant of Curators, Registrar: Mgr. Jana Kálnová, kalnova@zoo-ostrava.cz

Public Relations Department
Head of Public Relations Department: Mgr. Šárka Bartáková, bartakova@zoo-ostrava.cz
Designer: Mgr. Zdeněk Berger, berger@zoo-ostrava.cz
Educational Programs: Bc. Jana Kovářová, kovarova@zoo-ostrava.cz, Jindřicha Zemanová, zemanova@zoo-ostrava.cz, Vladimír Adámek, adamek@zoo-ostrava.cz

Research Department: RNDr. Jan Pluháček PhD, pluhacek@zoo-ostrava.cz

Head of Technical Department: Ing. Rudolf Mikulský, mikulsky@zoo-ostrava.cz

Animal Feeding and Nutrition: Lenka Lindovská, lindovska@zoo-ostrava.cz

THIS ANNUAL REPORT HAS BEEN PRINTED ON THE RECYCLED PAPER.

Zoo Ostrava
The Annual Report 2008

OSTRAVA!!!

Contents

Dear friends of Ostrava Zoo,

I am pleased to share this 2008 Annual Report with you. You can see that it is a very detailed document, far more comprehensive than any report that has been ever published by Ostrava Zoo. But we have really a lot to say, as 2008 is sure to be recorded as one of the best and most successful years in the history of the zoo.

This report provides not only an overview of the animal collection, but also a number of updates and information on breeding and husbandry as well as participation of the zoo in conservation breeding programmes of threatened animal species; furthermore, it includes a detailed analysis of design and development activities, conservation education, promotion and publicity, scientific research, botanical work, and much more.

Ostrava Zoo is the only zoological park around the Moravian-Silesian Region (MSR). At the same time, it is the most attended cultural institution and tourist destination within the territory, progressively becoming one of the top attractive and most-visited places around the country.

Owing to the financial support of the founder, the Statutory City of Ostrava, two capital projects that had been under development a long time could be launched in 2008. Following the modern elephant house opened in late 2004, these are the most comprehensive investments throughout the long existence of the zoo.

Titled Technical Background for the Dendrology Department, the first of the projects presents another milestone along the way to the goal we had staked – creating a combined zoological and botanical park by linking the animal exhibits and the botanical part, with the first step being the Botanical Park opened earlier in 2006. Being a great challenge in terms of technology and funding, this set of facilities is also very important from other aspects like diversifying zoo's energy demand, economy, and supporting use of renewable energy resources.

The objective of the second capital development project, a vast complex to display and breed bears, langurs, and other species covering an area of nearly 2 hectares, is to allow for moving several animals from their fully used and outdated facilities into state-of-the-art housing conditions, with subsequent clearing the old structures.

Founder's support and all the funds raised from various sources, be it the supra-city budgets, private institutions, foundations, and other donors, helped us either launch or make real a huge number of operations. Do not expect me to list them all – this would go beyond the scope of this short welcome address. Therefore, please refer to the next chapters of this report. If I may highlight any single part of the activities, I would call 2008 a year of project development, with budgets of design development projects ranging from several tenths thousand up to many millions.

In 2008, the progressive efforts to improve visitor services, the proactive publicity and marketing, and also several new small exhibits like the red panda enclosure or that for white-naped cranes helped the zoo achieving the highest attendance in its history. The zoo became an option for almost 364 thousand visitors, which was 34 thousand more compared to the previous year. On the other side, the favourable weather should also be taken into account.

The high revenues from entrance fees making 80% out of total own revenues of the zoo and additional zoo's activities and services supported by the lively contacts with commercial partners, sponsors, and donors made the way to the greatest volume of own zoo's incomes in the history. The returns almost reached 28 million Czech

koruna. Also, the zoo's 2008 self-sustainability rate of 47%, which involves own revenues and donations, is a historical record. Four years were enough to double zoo's own revenues and raise zoo's self-sustainability to 168%, with visitor numbers still increasing. It is clear that such rapid growth will not be indefinite; no tree can reach the sky. Estimating any possible impact of the recent slowdown or even halt of the earlier very rapid growth of economy on the attendance and related revenues of the zoo, or predicting which type of weather will be favourable or not would be difficult if not impossible. Moreover, the first negative signs consisting of the easy to understood reducing interest of donors or declining numbers of visitors from Poland could be already seen in the second half of the year 2008.

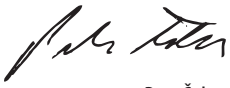
Concerning the animal husbandry part, I do not wish to go into more details, for my preface is long enough even without this; it is a long story, and can be found in the most of the following chapters where it has been fully described by my colleagues. I would like to draw your attention to the long series of animal species, either rare or standing at the edge of extinction, including the successfully raised two Sri Lanka leopard females as well as the first crowned lemur born outside Madagascar, the USA, and Western Europe. The prospective elephant females from Belfast Zoo that the zoo managed to import in the framework of the captive conservation breeding programme is promising news and a peak of our foregoing long-term efforts.

As for in situ projects, zoo's activities related to the little owl, barn owl, Hainan gibbon, and the Madagascar region of Sahamalaza continued. In addition, young zoo-bred European lynxes and wild cats were provided for a repatriation project in Slovakia. The flagship project of the zoo titled Returning the Golden Eagle to the Mountains of Moravskoslezské Beskydy, where the zoo has been involved as a partner of the project leader Wildlife Rescue and Conservation Education Centre Bartošovice na Moravě, has been successfully underway for three years. You can read more about the first three years of the project under a separate chapter.

Scientific research presents another integral part of modern zoo's activities. Therefore, I am happy to see that a new edition of the Hippopotamus European Studbook has been produced by a member of Ostrava Zoo's personnel. In addition to the in situ activities above, this not only confirms the zoo's full-fledged concern in conservation – to some extent a process of emancipation during integration into the conservation structures worldwide, but also promotion of both town and the country abroad.

To conclude, I wish to say sincere thanks to all of our visitors for choosing Ostrava Zoo when looking for a destination of their trip, walk, or a source of learning. Next, my acknowledgments go to the zoo's founder and owner, the Statutory City of Ostrava, and to all of their political representatives and officials with a real desire to see their zoological park shaping up. Last but not least, all sponsors and donors, friends and patrons of the zoo, and namely my colleagues deserve my sincere thanks as well.

You may find the following chapters of this Annual Report useful to learn more about the activities of Ostrava Zoo. Enjoy your reading and get inspired!



Petr Čolas
Director, Ostrava Zoo
Ostrava, 21 March 2009

Animal husbandry
By Jiří Novák and Ivo Firla

Census of animals 2008	January 1		December 31	
	Species	*Specimens*	*Species*	*Specimens*
Mammals *(Mammalia)*	68	372	66	322
Birds *(Aves)*	133	587	117	499
Reptiles *(Reptilia)*	18	143	19	128
Amphibians *(Amphibia)*	3	13	4	25
Actinopterygii *(Actinopterygii)*	49	481	51	446
Cartilaginous fish *(Chondrichthyes)*	0	0	1	2
Invertebrates *(Invertebrata)*	44	122	47	113
Total	**315**	**1718**	**305**	**1535**

The collection decreased by 10 species throughout the year, which namely involved birds. As per 31 December 2008, the value of stock on display was CZK 7,178,907.17.

In the course of the year, total 332 young in 72 species, subspecies, and forms were bred, including mammals (90/30), birds (128/31), reptiles (3/1), ray-finned fishes (94/7), and invertebrates (17/3) with a total accounting value making CZK 429,834.50.

Concerning the primates, several news sure needs to be mentioned. There was an important change in the chimpanzee group *(Pan troglodytes)*, where a male was exchanged with Krakow Zoo. This new male was successively integrated into the group of four females. A male northern white-cheeked gibbon *(Nomascus leucogenys)* that arrived from Jerez Zoo was added to the female. The recent years turned out to be successful in lemur breeding. One young was bred in both the red-bellied lemur *(Eulemur rubriventer)* and crowned lemur *(Eulemur coronatus)* group. For the crowned lemurs, this was the first young in the zoo's history. In the ring-tailed lemur *(Lemur catta)*, two animals were bred. In addition, it was for the first time this species was held in the island exhibit. Other primates species bred included 2 Diana monkeys *(Cercopithecus diana diana)*, 2 Tarai gray langurs *(Semnopithecus hector)*, and a single lion-tailed macaque *(Macaca silenus)*.

In addition, the primate collection expanded with two new species in 2008, for which two nocturnal exhibits were arranged by using existing empty space in the hippo house. The first exhibit is inhabited by northern greater gallagos *(Otolemur garnettii)* and the Emin's pouched rat *(Cricetomys emini)*, while the other hosts Senegal bushbabies *(Galago senegalensis)* together with straw-coloured fruit bat *(Eidolon helvum)*. These nocturnal exhibit dwellers mostly came from Pilsen Zoo.

One of the largest arrival in 2008 not only in terms of size presents additional two females of the Indian elephant (Elephas maximus) imported from Belfast Zoo. So far, two aged females had been held, where reproduction was not considered, but with these new females, which is mother and daughter, breeding is hoped-for. A breeding male has already been selected to complement the elephant herd in spring 2009.

As for the ungulate mammals, a number of breeding successes also occurred, including 2 Pere David's deer *(Elaphurus davidianus)*, 1 Siberian red deer *(Cervus canadensis sibiricus)*, 3 Vietnamese sikas *(Cervus nippon pseudaxis)*, 3 alpacas *(Lama guanicoe f. pacos)*, 4 llamas *(Lama guanicoe f. glama)*, 2 elands *(Taurotragus oryx)*, 1 Rothschild's giraffe *(Giraffa camelopardalis rothschildi)*, and others. The death of a female southern white rhino *(Ceratotherium simum simum)* was the greatest loss in hoofed mammals.

Concerning the Safari section, there was the second parent-raised southern ground hornbill *(Bucorvus leadbeateri)* in the row. As visitors could see these attractive birds only in the outdoor exhibit so far, which was further limited due to raising the young bird, an indoor exhibit was arranged in one of the boxes, where at least young birds can be watched all the time.

In late 2008, another two sea aquariums inside the hippo house were put into operation, 500 l each. These tanks complement the existing much larger aquarium very well, presenting another forms of diversity of the sea world. In the first tank, the ribbon eel *(Rhinomuraena quaesita)* and marine flora, i.e. different algae species, can be admired, while the other exhibits namely corals. Unlike with the existing large tank, these corals produce calciferous skeletons, feature a larger range of colours and shapes, but are more difficult to hold and breed.

In 2008, the fish collection and breeding was still limited to the facilities behind the scenes or the small additional ponds in certain exhibits. In the Madagascar exhibit, two threatened fish species found on this island, the polleni cichlid or marakely *(Paratilapia polleni)*, and killifish *Pachypanchax sakaramyi* settled successfully. Specifically for the killifish species, Ostrava Zoo will work as a conservation ark as this fish has probably been extinct. Unfortunately, a group of already grown up giant pangasius *(Pangasius sanitwongsei)* fishes held in the Elephant Jungle exhibit was lost. Yet this attractive catfish admired namely by small and adult fishers did not disappear from this exhibit for ever as the stock is to be recovered as early as 2009. In the same year, another aquatic exhibit will be launched: the Amazon Minor. In addition to several interesting fish species, the first member of the cartilaginous fishes at Ostrava Zoo's history, the ocellate river stingray *(Potamotrygon motoro)* will be introduced. Two stingray females are already dwelling in the tank behind the scenes.

Next, conditions for another species extinct in the wild were established out of scenes: the butterfly goodeid *(Ameca splendens)*. Once some basic experiences are raised, more true viviparous fish species are to be added; aside from the vivipary, which is something special in the fishes, this fish group has one thing in common: alarming status in the wild.

The past year also involved some important events in the felid collection, with the greatest of them produced by the Sri Lanka leopard *(Panthera pardus kotyia)*. A harmonising pair was successfully set up following many years of efforts. In carnivores like leopards, the courting period is wild and sometimes even dangerous.

Underestimating the situation may produce a setback instead of a long-yearned-for success in form of cubs. This was another reason why the zoo personnel spent a lot of time including evenings by introducing the animals to each other. However, all that keepers' asceticism and the culture, sports, or other events lost paid off in the end: two female leopard cubs arrived on 1 July 2008. This was something everyone had hoped for over a long period of 18 years. The beauty and the neatness of both young leopard females can be still admired also during 2009.

In 2008, recommendation to breed was received from the Amur tiger *(Panthera tigris altaica)* EEP co-ordinator again. This is not something automatic, especially in mammals, where husbandry has already been mastered in many species and any larger numbers of young are difficult to place in other zoos. Many other zoos could not get a chance like this in 2008 meaning they will have to wait for their cubs; but fortunately, the visitors of Ostrava Zoo will be lucky to marvel two young lively tiger females also throughout 2009. And, as the mother of the cubs is now busy with her maternity duties, the male tiger, Xeron, left for Lešná Zoo to court another female.

There were also other felids making us happy with their offspring. Four cubs were born in both Geoffroy's cats *(Leopardus geoffroyi)* and Canadian lynxes *(Lynx canadensis canadensis)*. As agreed with Jihlava Zoo, their female Pallas's cat *(Otocolobus manul)* was imported for Ostrava's male just before her oestrus period. The male Gremlin turned out to be a very good breeding male, as the female gave birth to four cubs upon successful mating and return to Jihlava. As this felid is difficult to breed, the combined Jihlava and Ostrava success is highly appreciated.

Furthermore, either of the local fauna felid species produced the young as well: this involves four cubs of the European lynx *(Lynx lynx carpathicus)*, and two cubs of the European wild cat *(Felis silvestris silvestris)*. In both cases, the young animals were provided for repatriation into the wild in the partnership with Slovak colleagues. The wild cats are discussed under a separate paper in this Annual Report. Arrangements for releasing two of the bred lynxes called Líza and Muro in the wild in the beautiful settings of the mountain range called Malá Fatra are already underway.

The zoo has participated on several more repatriation projects: as in each of the recent years, another barn owls *(Tyto alba guttata)* and little owls *(Athene noctua noctua)* were forwarded to the Wildlife Rescue Centre Bartošovice. In 2008, 14 barn owls and 10 little owls left for the centre. A report concerning the zoo's involvement in the golden eagle *(Aquila chrysaetos)* repatriation project can also be found under a special chapter.

Other three females were added to the Caribbean flamingo *(Phoenicopterus ruber)* flock; all of them hatched during the 2008 nesting season. They can be still seen being fed by the parents regardless their adult size. Unfortunately, the 2008 season was not very successful for Anseriformes birds, with only a single Hawaiian goose *(Branta sandvicensis)* and one Laysan duck *(Anas laysanensis)* bred. On the other side, the much higher numbers of pigeons hatched in 2008 could be enjoyed, with 3 chicks of the Mindanao bleeding-heart pigeon *(Gallicolumba crinigera crinigera)* and even 8 young of the Luzon bleeding-heart pigeon *(Gallicolumba luzonica)*.

In the parrot collection, another particular and rewarding success was achieved: the vinaceous parrots *(Amazona vinacea)* produced first two chicks in the zoo's history. There were other two young of the yellow-headed parrot *(Amazona oratrix oratrix)*, scarlet macaw *(Ara macao macao)*, as well as the golden-capped parakeet *(Aratinga auricapillus aurifrons)*, and three chicks of the African grey parrot *(Psittacus erithacus erithacus)* were also raised. The first offspring in the zoo's history was also produced by the red-billed blue magpie *(Urocissa erythrorhyncha)* and the red-tailed laughingthrush *(Trochalopteron milnei)*.

To stock the projected Papua exhibit, six young Siebenrock's snake-necked turtles *(Chelodina siebenrocki)* arrived from Pilsen Zoo. This first member of the Cryptodira turtles at Ostrava Zoo features an extremely long neck that can fold in a special S-shaped manner and hidden in its shell. As for turtles, the European pond turtle *(Emys orbicularis)* should be also mentioned, as it is another breeding species, which is promising for the planned turtle collection at the zoo.

Amur tiger *(Panthera tigris altaica)* cub

Economy in 2008
By Pavlína Konečná and Petr Čolas

Costs and revenues

Indicator	2008 (CZK thousand)	% out of total costs	Difference compared to 2007 (CZK thousand) +/-
Total costs	**72.674**	**100 %**	**+ 3.898**
Including Feedstuffs used	4.886	6,7 %	+ 1.277
Medical products, veterinary services	824	1,1 %	+ 43
Other materials, merchandise costs	7.915	10,9 %	+ 1.321
Energy used	7.998	11,0 %	+ 1.076
Repairs and maintenance	3.739	5,1 %	+ 200
Other services	6.277	8,7 %	- 6.445
Total staff costs	27.692	38,1 %	+ 2.223
Other staff costs	13.343	18,4 %	+ 4.203
Total revenues	**73.365**	**100%**	**+ 3.434**
Founder's allocation and other resources*)	38.072	52 %	+ 267
Total own revenues	**35.293**	48 %	+ 3.167
		% from own revenues	Difference compared to 2007 (CZK thousand)
Including Entrance fees	22.400	63,5 %	+ 4.082
Rental and advertising	2.472	7,0 %	- 427
Other services	1.134	3,2 %	+ 402
Revenues from sales of animals	410	1,1 %	+ 165
Other revenues inc. merchandise	1.510	4,3 %	- 88
Depreciations	7.367	20,9 %	- 967

Note: *) Other resources included Ministry of Environment, Labour Office Ostrava, Regional Authority of the Moravian-Silesian Region, and EU Structural Funds.

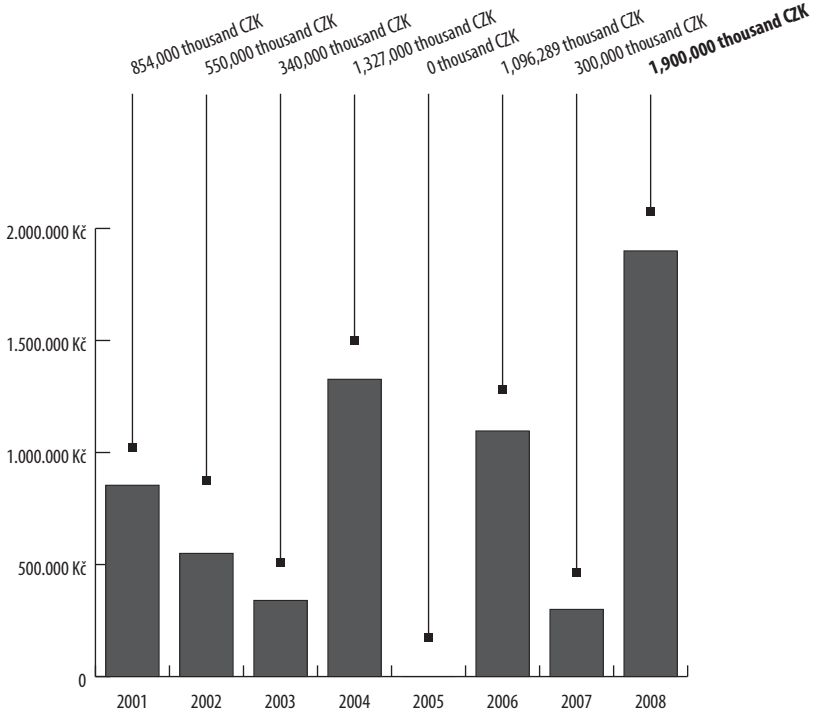
The economical operations of the zoo in 2008 produced a profit amounting to CZK 691.1 thousand.

The founder of the zoo, which is the Statutory City of Ostrava (SCO), allocated a total of CZK 33,307 thousand to help covering the costs for zoo operations in 2008. Even though this allocation made nearly 100% of that for the previous year, **the cost covering percentage decreased by some 3% compared to 2007, thus, it only helped to cover 45.8% of real expended costs of the zoo.**

The founder's non-capital allocation consisted of the following in 2008:

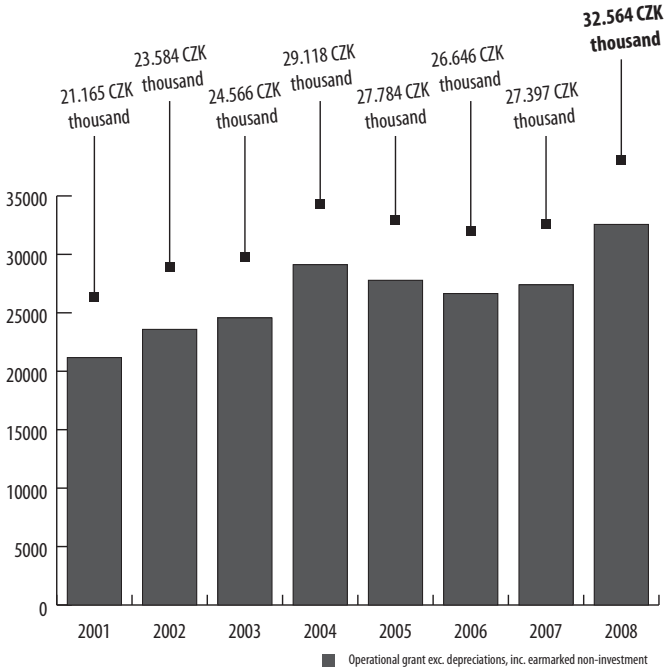
1. **Allocation for operations amounting to CZK 30,664 thousand,** out of which 86% to cover budgeted staff costs – i.e. salaries, social and health insurance, the remaining CZK 4,160 thousand was used to fund a part of the running costs required to ensure the zoo operations. Compared to the previous year, this kind of allocation increased by 13%. This allowed for covering especially the increase in staff costs incurred by increased staff numbers, and to some extent to help cover the growth of prices for energy, feedstuffs, and also the expenses incurred for the first time by running and maintenance of the newly opened Botanical Park.
2. **Earmarked allocation of CZK 1,900 thousand,** which was historically the highest sum compared to the previous years. This funding was designated to repair and maintain certain parts of the property; more specifically, this involved CZK 550 thousand to repair the building containing zoo's guest room, and to repair the flamingo house, while CZK 750 thousand were provided for repairing a part of the backbone LV power supply grid and indoor boxes in the animal isolation facility. The rest of the allocation amounting to CZK 600 thousand also covered a major part of the necessary costs related to the costly importation of two female Indian elephants to the zoo.

Earmarked grands allocated by SCO: 2001 - 2008



3. **Contribution of CZK 743 thousand to refund accounting depreciations of long-term movable assets.** Unlike the year 2007, the contribution to help to refund the accounting depreciations of long-term assets was re-established; however, this only applied to movable assets. No contribution was granted to cover the accounting depreciations of immovable assets such as buildings and structures, a very significant cost item making 10% from total costs, which is CZK 7,367 thousand, by the founder. In order to cover zoo's capital fund, these costs were charged to the zoo's revenues as instructed by SCO. This accounting operation caused a significant increase in zoo's total own revenues.

Non-investment grants for operations allocated by the founed: 2001 - 2008



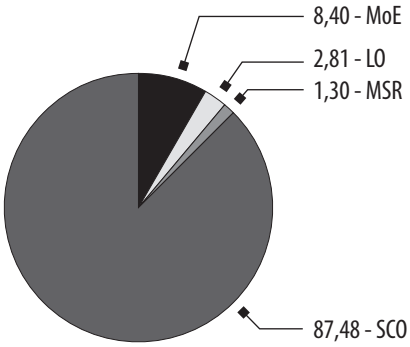
2008 was a very important year for the zoo as well as the previous year; in many aspects, it can be described as a year of a great turn. Following two years of decreasing allocation for operations from the founder's funds regardless of inflation rate and increasing zoo's activities, the year 2007 was a turning point. The increase of the operating grant by 13% as well as nearly 2 millions of earmarked funding from the founder's budget encouraged further development of zoo's work and activities, and enabled the zoo handling the constant growth of the operating costs necessary to keep the zoo running. The operating costs above had been incurred by growing prices of the individual items like feedstuffs, energy, maintenance, disposal of wastes, insurance, banking charges, and VAT rate increase, and also by running newly completed and opened buildings and exhibits, extended visitor services and related points of sales, etc.

In addition to the above-mentioned source of funding, i.e. the founder's budget, the zoo managed to raise

quite high funding from the national budget, from the budget of the Regional Authority of the Moravian-Silesian Region, and from EU Structural Funds. These grants helped the zoo to cover over 6.5% of real expended costs of the zoo.

CZK 3,198 thousand, which is a historical record, were obtained and spent thanks to the budget of the Czech Ministry of Environment (MoE) under their challenging grant scheme. Chances that the zoo can get any similar funding from MoE as in the record year 2008 in a foreseeable future are very low, as the total volume of funding available for allocation will be rather lower than before. The funding obtained from the resources above were earmarked to co-fund the husbandry costs related to specific endangered animals species and assistance in conservation programmes. The grant above allowed financing the second edition of the Hippopotamus European Studbook, procurement of a video surveillance system to monitor behaviour of several rare parrot species within captive conservation breeding programmes, participation on continued releasing the eagle to the wild in the Czech Republic within the Returning the Golden Eagle to the Mountains of Moravskoslezské Beskydy Project, organising the second conference for school teachers around the Moravian-Silesian Region focused on conservation education and publicity, or also development of the interactive education facility under the How to Help the Animals Project. Another historically highest contribution that amounted to CZK 1,071 thousand was allocated by the Labour Office Ostrava to co-fund salaries and social and health insurance. The use of the funding obtained from SROP (EU-funded Joint Regional Operating Programme) under the Corporate Design 2006 grant scheme to co-fund the Marketing Support of New Ostrava Zoo's Visitor Activities Project aiming to develop the established trend of presenting the zoo as one of major tourist destinations and key players in the leisure time market around the Moravian-Silesian Region with outreach to the Polish and Slovak regions along the border continued. Total funding successfully raised for this project implemented in the 2007-2008 period made CZK 1,311 thousand.

Allocation of non-investment grants (%) in 2008



To co-fund 48.6% from the operating costs and achieve profit, own revenues of CZK 35,293 thousand were produced; they **namely include revenues from entrance fees**, but also other revenues, especially rental and advertising, sales of merchandise and materials, etc., and charged but uncovered accounting depreciations. Leaving the item involving charging uncovered accounting depreciations of immovable assets aside, as it was just an accounting operation and did not contribute to the own revenues, **the zoo's own revenues increased**

by over 17% compared to 2007, which in monetary terms presents a considerable amount **of some CZK 4,134 thousand.**

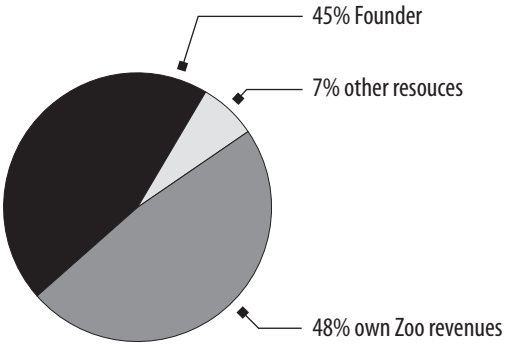
As usually, revenues from the entrance fees presented the highest and the most important item within the own revenues, which can be hardly changed. In 2008, this item successfully **increased by CZK 4,082 thousand,** which presents 122% of the incomes from sales in the preceding year. This was a record level considering the numbers achieved four years ago that made less than a half of the current status. In addition, the zoo visitor numbers have increased. However, the attendance is a value that cannot be exactly foreseen, as it will largely depend on favourable weather. The last year's moderate winter with low rainfall as well as quite stable warm and dry weather over the remaining part of the year attracted **363,944 visitors.** This was a real historical record, even exceeding the year 2005, when two female Indian elephants arrived, thus becoming the key attraction around the Ostrava region.

The fact that the zoo became an option for spending leisure time and seeking education for as much as 34,242 people more than in 2007 clearly indicates that the money invested in the extensive grounds of Ostrava Zoo has not been wasted. These capital costs spent very recently have rapidly made this only zoo in the region one of the top tourist destinations around the Czech Republic, whether it was for the development of the new exhibits or reconstructing the existing used facilities, making additional parts of the vast natural area such as the Botanical Park available to the public, extending promotional campaigns beyond the Ostrava territory mainly to the Poland's regions along the border, and organising diverse education, sports, cultural and entertaining events. As a result, any such investments enhance the attractiveness of not only the Ostrava Town but also the Moravian-Silesian Region for tourists.

Additional important incomes of the zoo include revenues from rental and advertising, sales of merchandise, sales of the feedstuffs for specific animal species sold to visitors through vending machines, and zoo train fares that sharply increased by 4% compared to the previous year regardless the rising crisis of economy, which was mainly reflected by the revenues from advertising.

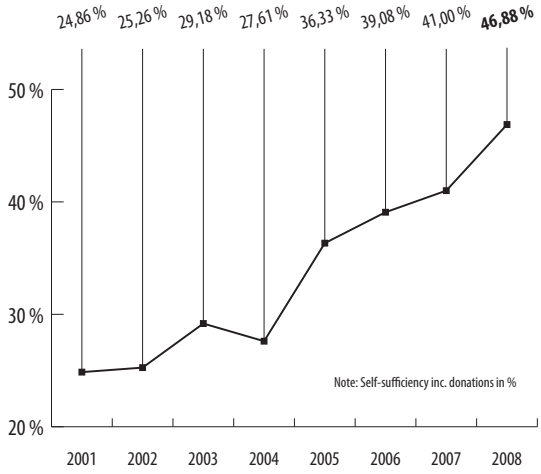
Revenues in 2008	CZK thousand	Variation in % compared to 2007	Variation in CZK compared to 2007
Total revenues	73.365	+ 4,91	+ 3.434
Of which Allocated by the founder	33.307	- 0,16	- 54
Granted by MoE, LO, RA (other resources)	4.765	+ 7,22	+ 321
Own revenues	35.293	+ 9,86	+ 3.167
Of which Own revenues exc. uncovered accounting depreciations	27.926	+17,38	+ 4.134

Percentage from total revenues in 2008



The efforts of the zoo management to further develop the zoo, seeking other potential funding resources, and strict controlling turned out to be a good strategy in 2008 as well. Consequently, this again enabled shifting the **self-sustainability percentage,** i.e. total own revenues raised by donations related to total operating costs decreased by uncovered accounting depreciations, one step higher to the **historical record of 46.88%.**

Zoo's self-sufficiety in 2001 - 2008 (%)

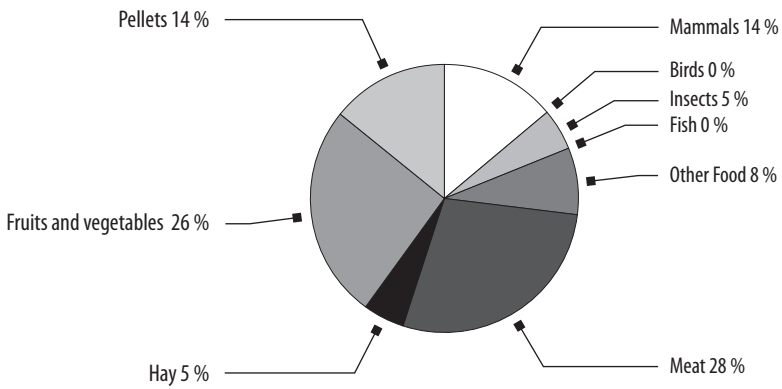


Concerning the cost items, an increase was recorded as well, with costs some 5.7% higher compared to the preceding year; in terms of money, this was increase of CZK 3,898 thousand. However, any such increase could be only covered thanks to the raised level of allocated funding and own revenues of the zoo.

The 2008 costs amounted to **CZK 72,674 thousand.** This was not only due to increase in prices, changed collection structure and raised animal numbers, and higher demand of staff, but also the change of the VAT

rate from 5 to 9%, which for instance influenced the costs of animal food that arose by over 35% compared to 2007 and the costs of medical products and veterinary services; in addition, the changed VAT rate had an impact on the increase of the energy and water costs by CZK 1,076 thousand. Increasing the employee numbers to ensure proper functions of the zoo in the conditions of development required CZK 2,223 thousand more for staff costs compared to 2007. This also affected the material costs including the use of personal protective aids, cleaning and health aids, fuel purchased, etc. Creating a reserve amounting to some CZK 4.4 million was another major cost item, which was necessary due to a lawsuit, extremely complicated from legal aspect, that had been lasting since 1994. The item of services was the only field showing decrease, but of course, no real reduction of costs occurred. This distinctive difference was because the fact that in the previous years this item included operating costs exceeding CZK 6 million related to the development of the Botanical Park. The major cost items that the zoo managed to maintain included repairs and maintenance costs; this item could be even increased by 6%. The maintenance and repair costs are still very important as they help to solve the existing unsatisfactory status of a number of energetically demanding and outdated buildings and facilities constructed namely in the period from 1950's to 1970's. Aside from the many operations covered from the earmarked funds allocated by the founder, overhauls of the following buildings, structures, and facilities could be carried out in 2008: several water supply mains and distribution systems, power supply switchboards and electrical pillars, boilers heating the animal houses, bearing post and mesh in the Chinese and Tibet Avifauna exhibit damaged by the snow load, front barriers near the guenon exhibit and a number of minor emergency repairs.

Structure of feedstuffs 2008



Diet

A specific part out of total costs making 38% had to be spent to cover staff costs involving the salaries as such, mandatory social and health insurance, allocation to the zoo's social fund (FKSP), employer's subsidy to staff boarding, and medical examinations. Despite the staff costs increase by 8.7% and salaries amounting 19,763 thousand paid to 97.63 employees (FTE), the mean salary decreased by CZK 123, thus making mere CZK 16,869. Reasons for this negative trend included arrival of a relatively high number of new employees

with low qualification, hired through the Labour Office (public works) and the fact that in 2008 no legal amendment of fixed salaries occurred. Such substandard remuneration always makes hiring new top quality staff members extremely difficult. What is worse, this makes the zoo a not very attractive workplace for young people coming namely from technology and economy sectors. In the course of the past year, especially in the time of culminating economical boom, the zoo management was exposed to solving a very complicated issue of leaving many good and experienced staff members, which was exactly due to the compensation. The mean age of the personnel achieved 41 years. Everybody will agree that the number of the posts posing a large volume of physically challenging work as well as several rather men posts are staffed by women making one half of the staff is also not very ideal situation.

Information on assets

	CZK thousand		CZK thousand
Total assets	**439.145**	**Total liabilities**	**439.145**
Long-term movable and immovable assets	486.392	Asset funds	405.308
Accumulated amortisation	-87.736	Financial and monetary funds	18.155
Stock	7.185	Profit/loss (profit)	691
Of which Animals	6.694	Reserves	8.871
Receivables	2.074	Short-term liabilities	4.996
Financial assets	30.954	Long-term liabilities	0
Temporary accounts of assets	276	Temporary accounts of liabilities	1.124

SCO was a major investor in 2008 as well. In terms of funding, SCO allocated capital grants amounting to CZK 31,816 thousand to the zoo and permitted use of 2007 investment funding of CZK 3,902 thousand, which remained unspent. Out of the funding allocation above, the zoo managed to invest over CZK 23.4 million. This provided for developing the project documentation for construction of golden eagle and white-tailed sea eagle aviaries, architectural designing four new facilities comprising tiger enclosures, Asian ungulate safari, penguin and seal exhibit, and zoo headquarters inc. main entrance, and launching the development of technical background for the Dendrology Department. Development of crane exhibit, a modern enclosure for the red panda as well as the Amazon Minor exhibit could be fully covered. Thanks to founder's capital grants, development of another key project, the outdoor and indoor facility for bears and langurs, could be also launched, the design documentation for reconstructing the Children Zoo area developed, and a part of the project documentation for development of the Biogas Station at the zoo was fully covered. The documentation for the Visitor Centre including a restaurant and conservation education facility was finished to a major extent, and the design documentation for the Wetland Ecosystem exhibit, mud removal, and re-arrangement of the pond No. 1 could also be processed. In addition, design work concerning the planned House of Evolution could be launched as well as a number of other construction projects. More details can be found in other chapter of the Annual Report.

In addition to the SCO funding, the zoo management successfully raised capital subsidies from the budget of the Moravian-Silesian Region, which involved development of several project documentations that are essential for any construction process to begin. The amount of CZK 1,086 thousand provided by the Region allowed for covering 75% of the full design documentation costs concerning the Biogas Station and the pond No. 4 reconstruction project. In the framework of the projects that were already underway, the project documentation for the Wetland Ecosystem exhibit, mud removal, and re-arrangement of the pond No. 1 was also completed.

The high sum of the financial donations obtained in 2008 exceeding CZK 6 million, which represented 18% from founder's allocation, showed the clear interest of other organizations, businesses, small donors, individuals as well as schools to help the zoo; it totalled CZK 6,141 thousand. The objective of the donations was to support not only the animal breeding, but also new exhibits, such as red panda, cranes, Amazon Minor, etc. At the same time, such incredibly high amount also reflected the fact that a number of negotiations and discussions that had already been underway several years were finished successfully just in 2008. The overall amount of the donations obtained throughout the year is extraordinary not only in the framework of Czech zoos; however, such volume is sure not to be repeated in the years to come. Besides, a number of expensive and necessary material donations were also obtained, including prizes for competitions, aquarium, playground components, and the like.

We thank all of the persons listed below as well as those not included, but also the numerous anonymous donors and sponsors for their favour.

Our donors and sponsors:

ArcelorMittal Ostrava, a.s.; Nestlé zmrzlina ČR; Nadace OKD; Nadace ČEZ; Komerční banka, a.s.; Severomoravská plynárenská, a.s.; Koňařík Martin, Alexandra a Václav Mičkovi, Bernold, s.r.o.; Široký Petr, JUDr.; ZŠ Školní 862, Orlová; Okresní soud Ostrava; Raida Lukáš, Mgr.; Široká Svatava; Novotný Jiří; pracovníci Krajského soudu Ostrava; ZŠ Dvorského 1, Ostrava; pracovníci Zákaznického centra GE MONEY v Ostravě; Vítkovické slévárny, s.r.o.; Statutární město Opava; Kašpárková Danuše; ZŠ a MŠ Čs. Armády, Bohumín; SŠ Sýkorova 1, Havířov; ZŠ a MŠ Horní Suchá; ZŠ Paskovská, Ostrava; ZŠ a MŠ Ostrčilova, Ostrava; Kurkovi Pavla a Jan; Dulanská Zuzana; ZŠ Aviatiků, Ostrava; Kolektiv II. oddělení pohotovostního pořádkového odboru městského ředitelství PČR Ostrava; Olesz Rostislav; Vítkovice Tours, s.r.o.; Harley-Davidson Club Ostrava; ZŠ J. z Poděbrad, Frýdek – Místek; Slámová Alena, Ing.; Kvados, a.s.; Bednarz Luděk; Sommerová Niki; Mičovský Emil; Šimon Robert, Ing; ZŠ Gorkého, Havířov; ZŠ a MŠ Dětmarovice; ZŠ Školní 20, Albrechtice; ZŠ Porubská, Ostrava; Foto Morava, s.r.o.; ZŠ Fr. Formana 45, Ostrava; Hribovi Marie a Jiří; Wichterlovo Gymnázium, Ostrava; ZŠ a MŠ V. Košaře, Ostrava; ZŠ Na Nábřeží, Havířov; Kapela Sakumprásk; SRPŠ ZŠ Školní 1600, Rychvald; ZŠ Slovenská, Karviná; ZŠ a MŠ s polským jazykem vyučovacím, Třinec; Středoevropská asociace přátel zoo (CEAF ZOO); Klub Kamarád a Občanské sdružení Máš čas; ZŠ Dětská 915, Ostrava; Rodina Maštalířová; ZŠ Majakovského, Karviná; Gymnázium P. Bezruče, Frýdek – Místek; SOŠ a SOU dopravní, Ostrava; ZŠ Trnkovecká, Ostrava; HP Tronic Zlín; SPŠCH akademika Heyrovského a Gymnázium, Středoškolská 1, Ostrava; ZŠ a MŠ T.G.Masaryka, Bílovec; Řecká obec Ostrava; Krevní centrum Fakultní nemocnice Ostrava; Zámecký golfový klub Kravaře; Chobot Petr; Ruckauf Marek; ZŠ a MŠ Palkovice; ZŠ a MŠ Ludgeřovice; ZŠ Mitrovická 389, Ostrava; ZŠ Oldřišov; ZŠ Ke Studánce, Orlová; Milata Zdeněk, Ing.; Janštová Kateřina; AR CARS, s.r.o.; ZŠ Školská, Karviná; Wildnerová Monika; Mitrengová Danuta; ZŠ 29.dubna 33, Ostrava; Sedláček Mojmír, MUDr.; Bendová Šárka, JUDr. … a další

For a full list of sponsors and donors, please visit www.zoo-ostrava.cz

Development, design activities, and maintenance
By Stanislav Derlich, Petr Čolas and Pavlína Konečná

Finished and launched capital projects.

In August 2008, the **Botanical Park – Technical Background for the Dendrology Department Project – Phase 2** was started after many years of preparations thanks to the allocation of a capital grant by the founder, with total estimated costs CZK 45,000 thousand inc. VAT, where the costs also comprise the previous challenging design work. This complex set of buildings and facilities will be finished by the end 2009. Earmarked capital grants were allocated to the construction budget by the Statutory City of Ostrava (SCO), making CZK 20,000 thousand for 2008, and CZK 25,000 thousand for 2009. Upon completion, the old glasshouse from the late 1950's is to be replaced with two state-of-the-art planting glasshouses for plant propagation and subtropical plants as well as other facilities required for the botanical part of the zoo to work well, like a shaded glasshouse, seed-bed, container facility, boxes, and shelters for machines. Completion of this project of technical background for dendrology department will allow the process of development of the Ostrava Zoo's botanical part to continue, with the clear and ultimate aim of establishing a Zoological and Botanical Park of Ostrava. Essential parts of the project include a modern biomass combustion boiler plant and chipping equipment as well as a chip store with the capacity of 920 m^3. The very purpose of constructing this boiler plant was to help the zoo to cut fossil fuel costs and to facilitate the desired increase in the percentage of renewable sources of energy. In addition, it is in line with principles of sustainable development. The project design includes roads, water supply mains, power service line, heating mains, sewerage, a large rainfall pit, and fencing. Located behind the scenes, this set of buildings will be essential for zoo's operations.

In November 2008, another large capital project was launched, which had also been under development a number of years: construction of the bear and langur exhibit, with total costs of CZK 71,000 thousand inc. VAT. The works as such will be finished by the end of 2009, but the exhibit will not be made available to visitors before starting the 2010 season, as the habitat the animals will have to adapt to will be completely different than that they had been used to. SCO earmarked capital grants were provided to construct the exhibit, making CZK 20,000 thousand for 2008 and CZK 51,000 thousand for 2009. This new facility will present a unique combination of primates – entellus langurs, and Asian black bears in a mixed exhibit. This modern complex will namely contain a large outdoor enclosure with natural environment complemented with an indoor facility. These new premises are designed to move the species above from their existing unsatisfactory and outdated concrete facilities, where the animals still live, thus principally improve their living conditions. Once dwelling in the outdoor naturalistic enclosure, the animals will live under conditions very close to their habitat in the wild. The existing natural ground in the exhibit will be maintained including the water stream and a small lake. There is a grown forest stretching almost around the enclosure. The ground as such is rugged, which will provide the animals with almost unlimited motional opportunities. The zoo visitors will be able to see the animals moving in the forest stand, in trees as well as in the lake in fully natural habitat. To make the animal watching more comfortable, amenities will include five observation points with different types of architectural design. In some of them, an unusual type of access will be added in form of a wooden bridge. Extensive integrating the water surfaces in the cascade of lakes with streaming water forming mountain-brooks and waterfalls will become another refreshing component of the exhibit. The central view-point will also contain two large freshwater aquariums presenting a water world to visitors. In addition, an Asian small-clawed otter enclosure with an outdoor pool will be located before the entrance to the main view-point. The whole complex

will be complemented with a children's playground to provide play and fun to the children as well as the much-needed social facility including toilets for physically challenged. In addition to the construction work above, this extensive project also involves necessary mains and service lines, including drinking and service water, power and communication installations, sewerage, wastewater plant and water management, large-scale landscaping and gardening work as well as outdoor lighting. The construction of this up-to-date husbandry and display facility is sure to increase the zoo's attractiveness, while providing the visitors with the opportunity of watching the animals in their natural habitat.

At the end of May 2008, a **new red panda exhibit** was formally opened. This species had not been held at Ostrava Zoo before. The exhibit for the rare red panda could be especially developed thanks to the funding support provided by Arcelor Mittal Ostrava Company whose contribution made CZK 2.2 million out of the total costs amounting to CZK 2,403 thousand. The rest of the budget was covered by an earmarked grant of the founder (SCO). The grand opening took place under the presence of Arcelor Mittal Ostrava's executives as well as the representative of Ostrava Zoo's founder – Mr Vojtěch Mynář, Deputy Mayor of the Statutory City of Ostrava. The red panda exhibit was erected in a much-frequented place along the backbone visitor path near the zoo entrance. Situated in the area of former bird aviaries – now cleared, the exhibit extends up to the Pere David's deer enclosure. The whole set of facilities includes a newly constructed **white-naped crane exhibit** that was started in autumn 2007. The rare and threatened crane species was also never held at the zoo before. The exhibit unit for the white-naped cranes follows the existing Chinese Garden exhibit, thus completing the set of displays dedicated to rare and endangered fauna species of East Asia, together with the extensively arranged Pere David's deer enclosure and the red panda exhibit. The crane exhibit includes a place allowing viewing the deer enclosure; the viewpoint is accessible for physically challenged persons as well. The crane exhibit could be developed namely thanks to the financial support of SCO amounting to CZK 1,500 thousand. In addition, CZK 150 thousand was contributed by Nadace ČEZ (a foundation) and CZK 376 thousand by other donors.

Aside from the above, there were more changes in the zoo grounds that should not be unnoticed as follows:

- First two small nocturnal exhibits in the zoo's history, allowing the visitors viewing some of the night-dwelling animals in a facility with reversed lighting cycle established. Funded from own resources. For more details, please see a separate chapter.
- Two new aquarium exhibits (0.5 m^3 each) set up in the rhino house, presenting the sea world to the public. Funded from own zoo's resources.
- The binturong exhibit in the carnivore house rearranged, and now the animals can be watched through the glass. Funded from own zoo's resources.
- The other entrance to the carnivore house rearranged and made accessible for disabled persons, fencing in two small felid enclosures (jaguarundi and Geoffroy's cat) replaced with safety glass, and interactive facility near the flamingo enclosure constructed. Funded by Nadace ČEZ, total 299.8 thousand.
- The guest house and flamingo house repaired; funded from SCO's non-capital subsidy of CZK 550 thousand.
- Hippo drinkers reconstructed; funded by donors, total of CZK 28 thousand.
- Damaged backbone LV power cables under the animal isolation facility in the operating part of the zoo (Ostrava Zoo's quarantine) in direction to the African ungulate house repaired; funded by SCO's non-investment subsidy, total CZK 567 thousand.
- Existing cages and animal husbandry installations in the room 1 inside the animal isolation facility in the

operating part of the zoo overhauled; funded by SCO's non-investment subsidy, total CZK 200 thousand.

- Three wells for service water drilled in different parts of the zoo's area; total capital costs made CZK 751 thousand, fully covered by SCO's grant.
- A part of the animal isolation facility (the quarantine) heat-insulated by means of six new PVC heat-insulation windows; total costs CZK 178 thousand, fully covered by SCO's capital grant;
- Heat-insulation and installation of devices heating the water distribution system supplying the drinkers in the elephant house; total costs CZK 77 thousand, fully covered by zoo resources.
- The final part of electrifying the security fences in the aviaries for Tibetan and Chinese birds completed; total CZK 39 thousand, covered by zoo resources.
- Toilets near the amphitheatre reconstructed and made accessible for the physically challenged; total costs CZK 81 thousand, fully covered by the zoo resources; before this much-needed facility, only a single toilet accessible to the disabled existed.
- A lemur all-season housing facility secured by an electric fence constructed on the island of the pond No. 2; total CZK 156 thousand, covered by donations.
- A video surveillance system installed inside the elephant house as well as outside in the enclosure to allow for 24/7 monitoring of the Indian elephants; total CZK 152 thousand, covered by donations.
- A video surveillance system installed inside the primate house as well as outside in the ring-shaped enclosure to allow for non-stop monitoring of the chimpanzees; total CZK 53 thousand, covered by donations.

In 2008, preparation phases for the following projects was launched, underway, or completed:

- **Hippo House Reconstruction** project preparation phase was completed. Objective of this project is to improve thermal conditions for housed animals and atmosphere for visitors – reducing the excessive smell inside the house, as well as to reduce the extreme demand of running energy costs. The building design covers replacement of the damaged roof, non-insulated entrance gate and a part of building envelope, insulation, etc. The project includes transformation of the heating system in the building from the existing electric heating system to renewable sources, more specifically wooden pellets, as well as implementation of a minimum level of filtering the water in the hippos' pool. All of the measures above will make the operation of this animal and visitor complex building housing the Ostrava Zoo's flagship species much more reasonable and efficient, thus helping to distinctively save water, energy, and also human work. In the framework of this project, an application seeking funding from the resources of EEA/Norwegian Financial Mechanism was approved by the Ministry of Finances as well as the Ministry of Environment. Afterwards, the application was translated into English and forwarded to Brussels for final decision. Currently, notification is underway with the European Commission to clarify if the project would constitute public support or not. An Ostrava Zoo's opinion reasoning that no public support will be involved, sustained by opinions of the Legal Department of the Ostrava City Authority, the Office for the Protection of Competition, the Regional Council of the Moravia Silesia Cohesion Region, and the Union of Czech and Slovak Zoos, has been sent to Brussels via the Ministry of Finances. Total amount to for the building design made CZK 1,041,250, from which 539 thousand was covered by SCO's budget, and the remaining part was funded by the grant provided by the Moravian-Silesian Region.

- Development of the building design and documentation for the **Visitor Centre** continued; the centre will not only provide the inevitable restaurant operated all the year long, but also offer premises for

conservation education programmes, conferences and workshops. An application for funding of the project implementation from EU Structural funds, more specifically, from the Regional Operating Programme (ROP) Moravskoslezsko, was submitted by the zoo still in 2008. Unfortunately, the Regional Council of the Moravia Silesia Cohesion Region did not find the zoo's application attractive enough for the development of the regional tourism. The money for the complete project development that amounted to CZK 1,228,080 were obtained from the SCO's budget. In 2009, other attempts to raise funds for the project from the resources of ROP Moravia Silesia are yet to be made in the next calls.

- Development of an architectural study for the **House of Evolution** meeting the criteria for an investment plan was finished. The development costs were covered by the capital grant provided by SCO that totalled CZK 295 thousand inc. VAT. This project covers full reconstruction of the old aquatic bird house to an up-to-date exhibit for chimpanzees and other African species designed as a combined interactive education exhibit and an animal breeding centre. Concerning the next phases of developing the project documentation for this highly expensive construction work, a grant of CZK 844 thousand has been obtained from SCO so far. At the same time, an application for funding from Nadační fond společnosti EVRAZ (EN: EVRAZ Endowment Fund) was submitted already in 2007 to ensure covering the remaining part; however, with no response so far. During 2008, this project was listed to the Integrated Development Plan of Ostrava City (IDPOC).

- As the zoo successfully obtained a grant from the Moravian-Silesian Region's programme of supporting the development of environmental projects, while also managing to get the remaining 50% from SCO, the preparation phase for the **Pond 1 - Mud Removal and Treatment Project** with total investment costs of CZK 160 thousand could be fully completed. The pond covered under the project had been used for the collection of aquatic birds since its establishment, but has now been empty due to an excessive mud layer and destroyed sides. Since the pond has been drained, the process of biological digestion and drying of the substrate – the mud – occurred, which will largely simplify any future treatment. Aside from the mud removal as such and treatment of eroded sides, a littoral zone for threatened local fauna species will be set up and new animal exhibits constructed along the pond, and a major part of the covered area will be made accessible to visitors. Still in 2008, the zoo managed to submit an application for co-funding to implement a specific part of the project from the resources of the Operating Programme Environment (OPE).

- **The Biogas Plant (BP) Project:** completion of the project documentation. The costs of building design documentation including surveys and energy audit made CZK 1,362 thousand. They were covered by the grants extended by SCO (333 thousand) and Regional Authority of the Moravian-Silesian Region (999 thousand). CZK 30 thousand was funded from zoo's resources. The project implementation is estimated in the 2010 to 2011 period; as for funding resources, up to 40% out of the qualified costs can be raised from the EU funds via OPE if the application is accepted. The remaining 60% as well as any ineligible costs will have to be covered by other resources. It should be noted that the percentage of eligible costs is being decreased year by year by OPE while compensated by increasing prices paid for the green energy which is produced from renewable energy sources and accordingly sold to the ČEZ (power supply company) network. Every additional year of delay in submitting the application to OPE will lead to a higher rate of capital costs to be spent by the Statutory City of Ostrava. The BP at Ostrava Zoo Project has been under development since early 2005; at that time, the co-funding rate applied by OPE was much higher than the recent 40%. The biogas plant is to be situated behind the scenes, with a primary objective to cover disposal of the biological

sludge produced by the animals as well as the waste vegetation produced within the zoo's running and maintenance of the vast zoo's area. Once the plant is put into service, close co-operation with OZO Ostrava Company as well as green biomass supplies from several city districts are anticipated Plans exist to use other green matter as well in winter periods to increase the rate of profit and revenues; currently, maize silage is being considered for this. The project is sure to have positive effects on improving the zoo's economy, be it the revenues from supplying green energy into the ČEZ Company network or using the waste heat produced in specific zoo's facilities. Another essential aspect to consider is potential self-sufficiency of the zoo in case of total power failure or blackout, at least to some extent, as unlike other facilities, theatres, senior homes, and hospitals, any evacuating process would be simply impossible for the most of the animals held at the zoo, so consequences of any blackout status would be dramatic.

- A preparation phase for the **Pond No. 5** called the **Wetland Exhibit** was finished. 50% from total costs CZK 235 thousand inc. VAT were funded from the Moravian-Silesian Region's grant, the remaining part was covered by the SCO's budget. Additional parts of the zoo grounds of a high biology value will be made accessible for the zoo visitors by creating one of the most threatened habitats of our times with the highest rate of loss: the wetlands. This will at the same time establish well-suited living conditions for diverse endangered local flora and fauna species, especially amphibians, with added resting places and education components dedicated to the importance of wetlands as well as the related conservation of plant and animal species depending on this habitat.

- A preparation phase for the **Pond No. 4 - Mud Removal and Treatment** launched. 75% of the costs amounting to CZK 116 thousand inc. VAT were funded by the grant successfully assigned by MSR; the rest was covered by the zoo's resources. Through the implementation of this project, the following measures will be possible: mud removal, repairing eroded sides and the dike, and also setting up new islands and semi islands for exhibits of primates and new species – pelicans. In addition, endangered local wildlife species will benefit from this project through establishing a littoral zone in a part of the pond.

- A capital grant amounting to CZK 259 thousand provided by SCO helped to complete a preparation phase of the **Construction of sea eagle and golden eagle aviaries** project. Application for grant to implement this project included in the Returning the Golden Eagle to the Mountains of Moravskoslezské Beskydy Programme was submitted within the funding scheme titled Operational Programme Cross Border Cooperation Czech Republic-Slovakia.

- A preparation phase of the **Children Contact Zoo** reconstruction and extension project was started. This project documentation package covers not only the emergency status of the part of the existing children contact zoo – during the project development, the scope was extended, which resulted in adding other attractive domestic animal species like for instance one cattle breed, varied breeds of rabbits as well as domestic pigs. The project includes a farm with access for visitors, water and power supply service lines as well as sewerage, activity components for the kids, seats and other equipment and extensive landscaping and gardening work. In addition, social facilities for visitors including toilets for disabled persons will be constructed in this part of the zoo, where such facility was still missing. The costs of the project preparation phase including designer's supervision amounting to CZK 258 thousand inc. VAT will be covered by an SCO's grant. The launch of the children contact zoo reconstruction work is scheduled for 2009.

- Thanks to the SCO's capital grant amounting to CZK 550 thousand, capital project studies could be developed for the following projects:

  - Ostrava Zoo – Zoo Office and Main Entrance;
  - Ostrava Zoo – The Safari (IDPOC listed);
  - Ostrava Zoo – Tiger Exhibit;
  - New Leopard Exhibit;
  - Ostrava Zoo – Penguin and Seal Exhibit.

The next project preparation phases could be started in each of the above projects – except for the leopard exhibit – thanks to the obtaining of additional financial support from SCO of above CZK 11 million, which made further fundraising efforts to get funding from external sources (namely the EU funds) possible. The projects can be outlined as follows:

Ostrava Zoo – The Safari. Funded by SCO's grant, the project documentation will be developed in 2009/2010 period. Project development costs based on the public tender will amount to CZK 2,356 thousand inc. VAT. The intention is developing a safari park, an extensive fenced outdoor enclosure with free-ranging animals. This will be a ride-through area with visitors allowed to observe the animals, while keeping as close contact as possible. This will provide the visitors with a sense of moving in open natural area in the middle of exotic wildlife that can be watched in its natural habitat and very close to the public. This kind of displaying the animals in zoos has been highly attractive, making the visitors able to move around an open area, and eliminating the negative feelings caused by fenced exhibits. In the course of 2008, this project was listed in IDPOC.

Ostrava Zoo – Penguin and Seal Exhibit. Funded by SCO's grant, the project documentation will be developed in 2009/2010 period. Estimated project development costs (full documentation) range from CZK 3.5 to 3.8 million inc. VAT. The final price to be specified within a public tender. This new exhibit is to be developed in place of the existing old bear facility – a huge concrete prison-like cell made in 1960 located in the middle of the zoo, which had not been complying with any of the recent animal husbandry standards a long time. The service life of this old bear pit as such had ended a long ago and any investing except in terms of personal and animal safety would be ineffective. As this structure is fully outdated from ethical and technical aspect, demolition will be the only meaningful solution. The planned penguin and seal exhibit will present a mixed exhibit of these spectacular animals that have always attracted zoo visitors' attention regardless of age and social background for their behaviour and activity. These animals can be seen in most of zoos, and their exhibits are much-sought.

Ostrava Zoo – Tiger Exhibit. Funded by SCO's grant, the project documentation will be developed in 2009/2010 period. Project development costs based on the public tender will make CZK 1,216 thousand inc. VAT. The existing tiger enclosure consists of a small iron cage. Designed in the spirit of 1960's trend of animal displays in the country, this facility is not only decayed and outdated, but even fails to comply with the recent animal housing concepts in terms of either husbandry or humaneness. The structure does not meet even basic tiger housing standards. In addition, following the ever stricter requirements for holding animals in captivity, Ostrava Zoo is sure to finish its tiger collection within several years without developing an up-to-date breeding facility, as no established zoo institution would permit relocating its animals to any sub-standard housing

conditions. Therefore, clearing this old facility and constructing a new one will be the only option. Compared to the existing status, the new tiger exhibit has been designed as a structure fully integrated into the natural landscape with minimum requirements to build anything above the ground. Such solution will provide the visitors with the possibility of viewing the tiger in its normal habitat: a broad-leaved forest with fully grown trees consisting mainly of birch-trees similarly as in the tiger's home range.

Ostrava Zoo – Zoo Office and Main Entrance. Funded by SCO's grant, the project documentation will be developed in 2009/2010 period. Estimated project development costs over CZK 3 million inc. VAT. The final price to be specified within a public tender. The existing main entrance and the zoo office have not been complying with the recent needs of the zoo operations a long time. The technical conditions and space arrangement of the main entrance does not allow for clearing the recent visitor numbers in a cultivated manner. The set of interconnected portable cabins looking like we were at a construction site that currently forms the Ostrava Zoo's main office was designed to serve as a temporary facility in 1960's, and now is about to reach its service life. It is unsatisfactory in terms of space; in addition, the energy demand of the facility is enormous. The shortage of places in the visitor car park is another critical issue. There are no facilities for holding presentations and lectures. To not only resolve the routine operation difficulties, but also to gain a new attractively looking area in the zoo grounds, which will be achieved by clearing the existing technical background at the entrance, it was decided that both planned facilities would be constructed in place of the existing main entrance and linked to each other in terms of operation. The project will also cover a car park in front of the entrance, with 136 places for parking of zoo visitor cars to be set up in the territory around the entrance; some of them have already been used for parking. The zoo service facility will be a two-storey building containing offices, service entrance, cash offices, social facilities for dendrology department (i.e. gardeners), as well as offices for other zoo's departments. The project also covers a staff meeting room, presentation room incl. the technical background, a spacious zoo store and visitor toilets (including disabled); and even a facility for mothers and babies.

Future appearance of Visitors´ Centre

Education and promotion
By Šárka Bartáková and Monika Ondrušová

Education

In 2008, the Ostrava Zoo's education centre hosted 143 education programmes attended by 3,890 students from diverse schools around the Moravian-Silesian Region; in case of pre-school children programmes, there were 954 participants. As from the new school year, the range of programmes expanded with three new education programmes for schools as follows:

Learn the Forest by All Senses – Focused on learning through children's senses, this open area interactive programme using natural aids and items could take place in the forest parts of the zoo if the weather permitted; it was designed for grade 3 to 5.

Reptiles – Using the zoo's education centre teaching room, this programme available for grade 6 to 9 included outlining each single reptile group and presenting its specific members, while also arguing against some myths and false facts about reptiles.

Ethology – A program for secondary school and grammar students concentrating on animal behaviour and life in the zoo situation as well as enrichment.

For the activities designed for public, the **News from the Zoology World** series of periodical specialist lectures continued under the management of Jan Pluháček, a zoo's scientific officer. This scheme also included lectures of other specialists like Pavel Hulva (Life Science Faculty, Charles University), Petr Veselý (Life Science Faculty, University of South Bohemia, České Budějovice), Radim Kotrba (Animal Production Research Institute, Prague), and Pavel Drozd (Life Science Faculty, University of Ostrava). Total 16 lectures attracted 382 persons.

In 2008, we continued to lecture several subjects in the universities. Researcher Jan Pluháček lectured *Behavioral Ecology* at University of Ostrava. That year the lectures took place in the Educational centre in our zoo. Moreover, we prepared the practice to this subject that carried out in our zoo on May 15th. Next we have been invited to make the lectures at Charles University and at the Czech University of Agriculture in Prague. Further, the zoo staff supervised four bachelor theses of students attending University of Ostrava and South Bohemian University. During 2008 we reviewed several other theses dealing with zoology. Thus, our zoo belongs among five Czech zoos which are active in their scientific work on the Czech universities.

Outside the zoo grounds, lectures and talks were held in the public libraries of the City of Ostrava as well as in culture centres, senior homes, and children departments of hospitals in Ostrava, Opava, Havířov, and Nový Jičín towns. The zoo participated on the Ostrava 2008 international film festival dedicated to sustainable development with a lecture on animal husbandry and breeding at Ostrava Zoo. Total 79 lectures were attended by 2,325 persons.

Throughout the summer holidays, four courses of a summer school at the zoo took place, with one of them attended by the members of the Central European Association of Zoo Friends (CEAF).

In December, a 2nd **Involvement of Zoological Parks in Conservation Education** conference funded by the Ministry of Environment and designed for directors of schools and education institutions, conservation education co-ordinators, natural science teachers, leaders of natural science hobby clubs, and other persons

interested was held at the zoo. In addition to those of Ostrava Zoo' s personnel, papers were presented by representatives of the Ministry of Environment, the Regional Authority of the Moravian-Silesian Region, the City of Ostrava Authority, Nature and Landscape Conservation Agency, PLA Beskydy Administration, etc. 80 educational professionals attended the event.

Competitions.
In April and November, two established learning competitions for primary and grammar schools were organised. The spring round attended by 2,385 children was dedicated to birds of prey and owls. In the autumn, 2,580 children took part in the Reptiles. Over 120 schools around the Moravian-Silesian Region got involved in each of the event.

Friends of the Zoo.
The Friends of the Zoo group included 36 members, with a number of them getting involved in development and arranging the events for the public organised by the zoo.

Marketing Support of Ostrava Zoo's New Activities for Visitors Project.
In the beginning of 2008, the Marketing Support of Ostrava Zoo's New Activities for Visitors Project was completed. Funded by the European Union and the Moravian-Silesian Region under the Joint Regional Operating Programme's (JROP) in the field of tourism within the 4th call of the 2006 Corporate Design Grant Scheme, this project was supported by CZK 1,712,742.45. The project objective was promoting Ostrava Zoo.
The project outputs included

- A new Ostrava Zoo Guide printed in Czech, English, and Polish versions;
- An Ostrava Zoo's map printed in English, German, and Polish versions;
- Posters titled Winter at the Zoo and the Spring at the Zoo produced and made available partly in the means of transport of Dopravní podnik Ostrava a.s. (a city transport company), and also distributed throughout the networks of public libraries and information centres, and in other organizations and institutions around the Moravian-Silesian Region;
- 12 billboards dislocated in cities and municipalities of the Region;
- 3 advertising sheets placed on gable walls around the City of Ostrava;
- 14 interpretation boards dedicated to Czech fauna species located throughout the zoo grounds;
- Promotional adhesives produced and applied to one of zoo's service cars;
- Promotional materials produced as project outputs and distributed throughout the network of city information and tourist centres around the Moravian-Silesian Region as well as to city information centres and public libraries along the Polish side of border;
- Linen handbags bearing Ostrava Zoo's promotional printing produced.

Other promotional activities

- Zoo news and updates distributed to media at least weekly, over 50 titles addressed, including Právo, Deník, MF DNES, Ostravská radnice, Moravskoslezské noviny, Blesk, Koktejl, Program, Týdeník Ostrava, and Metro for newspapers, Orion, Čas, Helax, Frekvence 1, Rádio Kiss Morava, and Český rozhlas Ostrava for radio stations, and Czech TV and Polar (Prima, Nova) for TV channels. Co-operation established with Czech TV – periodical reports within the Good Morning programme, and Český rozhlas Ostrava (Czech national radio) – periodical

reports within We Love Animals.
- A special briefing on the Returning the Golden Eagle into the Mountains of Moravskoslezské Beskydy Project, year 3; on 10 December.
- Media campaign in the regional media along the Polish side of border like advertising spots in the Polish radios and TVs; June to August.
- 7 billboards installed on the main arrival routes in Ostrava direction around the Moravian-Silesian Region; April to July.
- Advertising boards installed on Náměstí republiky and Svinov most tramway stations.
- 21 April – Ostrava Zoo presented at the 5th TUR Ostrava 2008 conservation and environmental film festival.

Activities for the public.

Total 36 events for the general public were organised by the members of the Public Relations Department in 2008; each of them took place on the occasion of a particular important day. In most of them, the group of zoo volunteers was involved, helping with organisation matters. Notable events included

- 5 April: The Day of Birdlife – Competitions for children, display of eggs and bird taxidermy specimens, a walk around the zoo guided by ornithologists, installing bird nest-boxes.
- 28 July: Start Your Holidays at the Zoo – Take Your Veteran to the Zoo As Well! – Everybody bringing an old used electric appliance could get a special discount on the entrance fee.
- 31 August: Concert for the Zoo.
- 5 September: European Bat Night.
- 13 September: Senior Day – Showing old movies for contemporaries, and guided tours.
- 5 October: The Animal Day – An event dedicated to the animal conservation issues, with volunteers in threatened animal masks strolling around the zoo, informing the visitors on the threats of the given species.
- 23 October: It's the Carnivores' Turn or Some Other Ways of Flying a Kite – An event dedicated to the launched EAZA European Carnivore Campaign.
- 1 November: Halloween and Jack-o'-Lantern Parade – All day long jack-o'-lantern carving; in the evening, the lanterns could be lighted, and a lantern parade moved into the zoo in the darkness; narrated elephant feeding with stuffed pumpkins.
- 6 December: Santa at the Zoo.
- 18 December: A Christmas tree decorating and performing a live Bethlehem scene at the zoo – A traditional event including hanging goodies for the free ranging wildlife around the zoo and carol singing.

From March to October, narrated feeding of specific animal species was performed for visitors. Throughout the summer holidays, evening guided tours were available for visitors after closing hours on Saturdays. During the summer holidays, falconry shows could be observed, and touch-tables presenting natural items and specimens were available for visitors throughout the zoo. In the winter period, visitors could provide supplemental feeding to the birds ranging freely at the zoo.

Ostrava Zoo was presented at the celebration of the Earth's Day organised by the Statutory City of Ostrava that were held on the Hlavní třída (a main street) in Ostrava-Poruba and Ostrava-Jih (city districts).

2008: The Year of the Frog – the EAZA amphibian conservation campaign.
Ostrava Zoo got actively involved in the campaign by highlighting amphibians in many of its events for the public as follows:

- 20 April: The Earth's Day – A Day for Amphibians;
- 1 May: May-Day: Frogs Ring the Alarm Bell;
- 30 May: Children's Day – Frog Olympics;
- 1 October: A lecture by Ms A. Pončová on fire salamanders.

The visitors could make a financial support by purchasing merchandise designed for fundraising within the campaign, such as Save the Frog badges, frog and salamander pencils, skipping ropes, etc. Total return from the sales of merchandise made CZK 2,921.50; the amount was forwarded into the account of the European Association of Zoos and Aquaria. Thank you everybody for supporting the amphibians!

How to Help the Animals Project.
The objective of this project funded by the Czech Ministry of Environment was to raise public awareness concerning the ways of helping free ranging animals in the wild, with a focus on the issue of young animals in some species like deer, hare, hedgehog, owls and also other bird species being frequently considered abandoned, sick or otherwise handicapped; these individuals will mostly and unnecessarily end up in wildlife rescue centres, zoos or also in private breeders. Information flyers, colouring books, self-adhesive labels, and rulers reflecting the given issue were produced within the project. At the zoo, an education area was constructed.

Dreamnight at the Zoo.
On 25 June, the 2nd Dreamnight at the Zoo, a special evening programme for disabled children was organised in Ostrava Zoo's grounds. While walking around the festively illuminated zoo, children could stop by touch-tables with natural specimens and items available and meet live animals. 60 kids attended the programme; everybody received a small gift and zoo's promotional items.

Donors.
Since 5 May 2006, any person interested in support of the Ostrava Zoo's animal collection has been able to send a donor SMS. In 2008, the zoo received 1,424 messages. On 8 and 9 October, a meeting with donors took place attended by 150 people.

Displays.
Displays in the zoo grounds – inside the elephant house:

- Education boards on the golden eagle;
- Carnivores – Children paintings arranged in co-operation with Kulturní dům K-TRIO Ostrava Hrabůvka (a culture centre in Ostrava).

Outside the zoo:

- Animal photograph display dedicated to Ostrava Zoo installed at the Regional Authority of the Moravian-Silesian Region, Knihovna města Ostravy (EN: Library of the City of Ostrava): the central unit and the district departments in Fifejdy, Výškovice, and Michálkovice districts, Dům kultury Města Ostravy (EN: Culture Centre

of the City of Ostrava), and Krevní centrum Fakultní nemocnice v Ostravě (EN: Haematology Centre of the Faculty Hospital Ostrava).
- Variegated and Beautiful Parrots: a display at Slezské zemské muzeum Opava (EN: Silesian Land Centre Opava);
- Rare Feline Carnivores: a display arranged in co-operation with Městské kulturní středisko (EN: City Culture Centre) in Javorník and Muzeum Těšínska (EN: Těšín Regional Museum) in Orlová;
- Wild Africa: a display in cooperation with National Geographic installed in Slezskoostravský hrad (EN: Silesian Ostrava Castle).

Pony riding club for children.
Meetings of the zoo-operated Pony Riding Club took place bi-weekly all the year round, with 13 kid members.

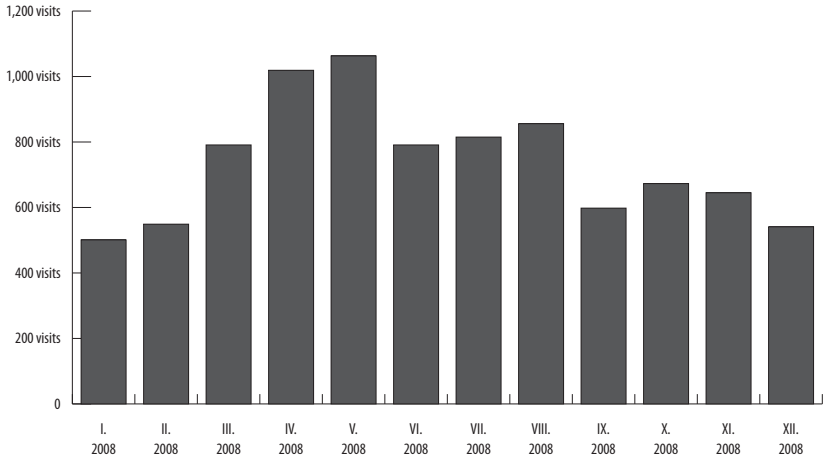
Other selected events.
- Rose Hip Autumn – A competition for the public in collecting hips, rowanberries, and acorns to be used for diversification of deer diet.
- A competition involving collecting the largest number of 50-heller coins for groups, especially schools. The return was used for purchasing a video surveillance system for the elephant house installed indoors and outdoors.
- 8 November: A visit of 35 people – members of the Association of Vienna Zoo Friends.

Company volunteers.
In 2008, Ostrava Zoo got involved in the company volunteer project in co-operation with Fórum dárců (a Czech philanthropic organisation). Total 118 employees of various companies were helping the zoo namely with cleaning and gardening work throughout the year.

Ostrava Zoo's web site.
The Ostrava Zoo's web site has been developed in five different languages: in addition to Czech visitors, also English, German, Polish, and Russian speaking persons can enjoy the site. According to the web statistics, the site attendance have increased (see the diagram below), with more and more visitors from Poland, Slovakia, and Germany.
The Czech version of the site is updated periodically. The news are updated at least twice a week, with additional links added throughout the year. In 2008, this for instance included a gallery of competing photographs in the framework of a competition, where users could vote online, a gallery of T-shirts under the Chimp Summer project, or also a link to the 50-hellers for Elephants competition involving collecting of 50-heller coins. Among others, the 2009 wall calendar was also for sale online.

The diagram below is showing a daily average of visits from unique IP addresses, meaning that if someone logged in several times during the day using an identical address, only a single visit was added.

www.zoo-ostrava.cz server statistics Mean daily number of visitors from unique IP adress



Last, the authors wish to thank all of their colleagues, who significantly contributed to the organising and performing all zoo's events and projects. Also, they need to thank the group of volunteers as the most of the events could not be arranged and made without their gratuitous help.

The Chimp Summer
By Monika Ondrušová

The 2008 summer at Ostrava Zoo was under the control of our chimps. To explain why, even several reasons need to be mentioned, the exchange of the male Siri planned already a long time ago being the most important. The relationships within our male group had been long unstable; additionally, Siri's daughters, Zira and Bambari, were about to enter adulthood, thus, unrelated partners were needed. Siri was replaced by a 23-year-old male Sebastián from Polish Krakow in early July, while our male departed for Krakow. As introducing a new individual into an animal group has always been a venture in apes and the way the family would accept the new member was unsure, it was decided that a new video surveillance system monitoring the situation in the group even in the absence of keepers would be purchased. As any action like this is nothing cheap, the return from the Chimp Summer operation was designed to cover the costs.

In early March, a competition for the most original T-shirt with a chimp theme was launched with the intention that all the T-shirts would be sold and the revenue allocated to procuring the video system. Attractive prizes were on hand: a tour to Croatia for two persons granted by the Vítkovice Tours travel operator, and a chance to spend a day with a zoo keeper. 97 original T-shirts were made by the visitors until the end of July, when the competition was finished; some of the handicrafts would be sure to attract in many fashion shops. Therefore, selecting the winner was a pretty hard job, but finally, Rychlý's family obtained the voucher for the trip to Croatia, and Nicole Škuláňová won the Day with the Zoo Keeper to be enjoyed the next spring.

A fashion parade accompanied by the sale of the T-shirts took place in the second half of September. As the weather was not in favour with us, the event had to be moved into the zoo's education centre. Five beautiful female mannequins walking on a red carpet featured 30 most original T-shirts. All models were sold out immediately after the show. Although the return was not enough to cover total costs of acquiring the video system, the event harvested a very positive acceptance, making our chimps real celebrities for a while. The rest of the costs were covered by donors, who have our big thanks.

The Chimp Summer was not only the T-shirt show: other visitor activities must also be mentioned like a farewell party with the male Siri, a birthday party with Maja and Zira – the females, a special learning competition online, and a display dedicated to chimpanzees to take our visitors closer to the unique world of man's closest relatives.

I would like to conclude by thanks to everyone supporting the Chimp Summer at Ostrava Zoo, be it Rotigel Company that installed the video surveillance system, our donors, the narrator, the musicians and mannequins participating on the show without any compensation, as well as all colleagues involved in the development of this project. Last but not least, special thanks go to Alexandra and Václav Mička.

Research in the Ostrava Zoo in 2008

Jan Pluháček

During 2008 we published as co-authors two papers in scientific journals (see list of papers below). We continued in our projects started in past and we begin the work on the new project "Suckling behaviour in Equids" in cooperation with Institute of Animal Science in Prague and Dvůr Králové Zoo.

In June 2008, our zoo published the second edition of the European studbook for common hippopotamus *(Hippopotamus amphibius)*. This edition includes the data on 1298 individuals kept in European zoos in the past as well as the review of 188 individuals living in 66 European zoos at 1st January 2008. Next, the studbook involves genetic and demographic analyses. The studbook revealed that more hippos died than were reared in 2007. Thus the population slightly decreased. Last, we added to this edition of the studbook the list of 255 references on common hippopotamus published from 1858 to 2007.

During 2008 we attended 2 international and 1 national congresses where we presented several talks and/or posters (see Table 1).

Table 1. List of abstracts and presence of the Zoo employees at the scientific congresses in 2007.

Congress	Place and date of the congress	Title of abstract (if any)
12th Congress of International Society for Behavioral Ecology	Ithaca, USA, August 9th-15th	Herdmates do not affect suckling behaviour in captive plains zebra, *Equus burchellii*.
25th EAZA Annual Conference	Antwerpen, Belgium, September 16th-21st	Common hippopotamus *Hippopotamus amphibius* European studbook 2008
38th Czech and Slovak Ethological Conference	České Budějovice November 12th-15th	Dominantní jedinci nenarušují kojení u zebry stepní *(Equus burchellii)* chované v zajetí.

Table 2 summarises the species kept in our zoo and involved in research in 2007 by researchers from Ostrava Zoo as well as from other institutions. When comparing this summary with that of 2006 and 2007, in 2008 we recorded the highest amount of projects carried out in our zoo. Some of projects listed in table 2 are the long-term projects collecting data from our zoo in several consecutive years. Some of these projects involving our zoo in past years resulted in completing Master thesis (e.g. Irena Vacková, defended her thesis at the University of Veterinary and Pharmaceutical Sciences Brno) and Ph.D. thesis (e.g. Karolína Koláčková defended her thesis at the Czech University of Life Sciences, Prague). We hope that project carried out in our zoo would result in papers in scientific journals, too.

Table 2. All projects (involving those of other institutions as well as our own) dealing with animals kept at the Ostrava Zoo in 2007.

Person(s)	Institution	Name of the project	Species involved
Martin Šandera a Pavel Stopka	Charles University, Prague	Genomic and proteomic comunnication in mammals	*Pan troglodytes, Lemniscomys straitus*
Tamara Haberová	Czech University of Life Sciences, Prague	Social behaviour in camels *(Camelus bactrianus)* – relationships among herd members	*Camelus bactrianus*
Alena Králíková	University of Ostrava	Parasites in Felids kept in Ostrava Zoo	Several species of Felids
Martina Mráčková	Catholic University Ružomberok (Slovakia)	Chov evropských druhů suchozemských želv s důrazem na rozmnožování	*Testudo marginata, T. hermanni, T. graeca*
Klára Petrželková a David Modrý	Institute of Vertebrate Biology Academy of Sciences of the Czech Republic, and University of Veterinary and Pharmaceutical Sciences Brno	Infusoria of the genus Troglodytella: pathogens or symbioths	*Pan troglodytes*
Barbora Kuběnová	University of West Bohemia	Preferences of arms in manipulation with objects in Apes	*Nomascus leucogenys*
Jan Pluháček	Zoo Ostrava, and Institute of Animal Science, Prague	Suckling in common hippopotamus	*Hippopotamus amphibius*
Radim Kotrba	Institute of Animal Science, Prague, and Czech University of Life Sciences, Prague	Morfometrical analysis of new born antelopes as a predictor of an adult body size.	*Taurotragus oryx*

During 2008, we had been asked by an international journal of *Journal of Zoology* for a review of manuscript. As in previous years, we published several papers in Czech popular journals like *Živa* or *Fauna* (see the list of selected papers below). Besides of all activities mentioned above, the employees of Ostrava Zoo coordinate four specialist group within the Union of Czech and Slovak Zoos (old world monkeys, small cats, fish, and deer). Next, Jana Kálnová from our zoo organised special meeting for ape keepers in Czech Republic. Main topic of this meeting was an introduction of environmental enrichment for apes in zoos.

As a conclusion I would like to thank to all who helped to improve the important goal of modern Zoological garden, the research. My thanks go to Jana Kálnová for valuable comments and improving English of this text. Publishing of the European studbook for common hippopotamus was financially supported by the Ministry of the Environment of the Czech Republic.

List of the research papers in journals with impact factor which have been published by Zoo employees in 2008

Drábková, J. - Bartošová J. - Bartoš - Kotrba, R. - Pluháček, J. - Švecová, L. - Dušek, A. - Kott, T.: 2008 Sucking and allosucking duration in farmed red deer *(Cervus elaphus)*. Applied Animal Behaviour Science 113, s. 215-223.

Konečná, M. - Lhota, S. - Weiss, P. - Urbánek, T. - Adamová, T. - Pluháček, J.: 2008 Personality in free-ranging Hanuman Langur *(Semnopithecus entellus)* males: Subjective ratings and recorded behavior. Journal of Comparative Psychology 122, č. 4, s. 379–389.

List of the other papers which have been published by Zoo employees in 2008

Čolas, P. 2008: Sborník z pátého jednání odborné skupiny pro starosvětské opice při UCSZ, duben 2007. Zoo Ostrava, Ostrava.

Čolas, P. 2008: Systematika červených gueréz podle různých zdrojů. In: Čolas, P. Sborník z pátého jednání odborné skupiny pro starosvětské opice při UCSZ, duben 2007. Zoo Ostrava, Ostrava.

Gorčáková, P. 2008: Manuli v ostravské zoo. In: Novák, J. Sborník z jednání odborné skupiny "Kočkovité šelmy podčeledi Felinae" při UCSZ, duben 2007. Zoo Ostrava, Ostrava.

Gorčáková, P. 2008: Karakali - byli, nejsou, ale budou! In: Novák, J. Sborník z jednání odborné skupiny "Kočkovité šelmy podčeledi Felinae" při UCSZ, duben 2007. Zoo Ostrava, Ostrava

Kanichová, J. 2008: Chov makaků lvích *(Macaca silenus)* v Zoo Ostrava a poznatky z oblasti Valparai, Western Ghats, Indie. In: Čolas, P. Sborník z pátého jednání odborné skupiny pro starosvětské opice při UCSZ, duben 2007. Zoo Ostrava, Ostrava.

Marková, D. 2008: Chov hulmanů (posvátných) *(Semnopithecus entellus hector)* v Zoo Ostrava v roce 2007. In: Čolas, P. Sborník z pátého jednání odborné skupiny pro starosvětské opice při UCSZ, duben 2007. Zoo Ostrava, Ostrava.

Novák, J. 2008: Sborník z jednání odborné skupiny "Kočkovité šelmy podčeledi Felinae" při UCSZ, duben 2007. Zoo Ostrava, Ostrava.

Novák, J. 2008: Výstava "vzácné kočkovité šelmy ve sbírkách Slezského zemského muzea Opava". In: In: Novák, J. Sborník z jednání odborné skupiny "Kočkovité šelmy podčeledi Felinae" při UCSZ, duben 2007. Zoo Ostrava, Ostrava.

Pluháček, J. 2008: European studbook for common hippopotamus *(Hippopotamus amphibius)*. 2nd Edition. Zoo Ostrava, Ostrava.

Pluháček, J. 2008: Systém jelenovitých. In: Pluháček, J. Sborník z 1. jednání Komise pro jelenovité při UCSZ, leden 2007. Zoo Ostrava, Ostrava.

Pluháček, J. 2008: Sborník z 1. jednání Komise pro jelenovité při UCSZ, leden 2007. Zoo Ostrava, Ostrava.

Pluháček, J. – Sinha, S. P. - Bartoš, L. – Šípek, P. 2008: Nosorožec indický – možná oběť vědeckého omylu? Živa 5/2008, s. 232-233.

Svobodová, Y. 2008: Amazoňan vínorudý *(Amazona vinacea)*. Fauna 21/2008, s. 10 - 12

Svobodová, Y. 2008: Aratinga sluneční *(Aratinga solstitialis)*. Fauna 6/2008, s. 16 - 17

Svobodová, Y. 2008: Holub zelenokřídlý *(Chalcophaps indica)*. Fauna 17/2008, s. 8 – 9.

Svobodová, Y. 2008: Amazoňan velký *(Amazona oratrix)*. Fauna 1/2008, s. 12 - 13

Svobodová, Y. 2008: Ara arakanga - umělý odchov v ZOO Ostrava. Papoušci 11/2008, s. 352 - 355

Activities of the Dendrology Department in 2008
By Tomáš Hanzelka

The biggest 2008 task for the Dendrology Department members was to design and implement the horticulture part of the new exhibit package consisting of the crane enclosure as a close follow-up of the Chinese Garden, and the Tibetan and Chinese Birds aviaries followed by the red panda exhibit. The Japanese art of gardening was introduced to visitors, with key components including Far East-styled small garden architecture in addition to the vegetation.
A stone viewpoint was constructed right by the open African ungulate enclosure to view the scenery resembling the African savannahs.

2008 was a year 1 of overall maintaining the Botanical Park opened in June 2007, which added vast forest stands and grass areas to the range of activities of the department.
In addition, extensive planting of wood species and perennials mainly along the visitor paths and animal exhibits was underway in the past year.

New view point to the African animals enclosure

The first nocturnal exhibit at Ostrava Zoo
By Jana Kanichová

In the mid-year, a new exhibit for nocturnal animals was opened in the hippo house. By rearranging of former tapir and capybara boxes, a double exhibit for night-dwelling African mammals was created, which needed setting a reverse lighting cycle. From 9 o'clock in the evening until 9 am, the premises are fully lighted so that the animals could sleep as in the wild. From 9 am to 9 pm, the exhibit is a dark place, but animals can still be seen through several eye-sights thanks to the moonlight-imitating blue light emitted by special fluorescent tubes.

The first exhibit is inhabited by a family of the northern greater gallago *(Otolemur garnettii)*, a semi-primate found in the wild in Somalia, Kenya, Tanzania, and the Zanzibar Island. Although they are solitary animals, the family held at the zoo consists of a female with a young (1.5 years) and an unrelated male, which has been working very well. All of the animals came from Pilsen Zoo. As gallagos will rather prefer horizontal tree branches in the wild, efforts were made to furnish their habitat to satisfy their needs as much as possible. Their space of 50 m^3 comprises a multi-level structure formed from branches and lianas. 3 nest-boxes (42 x 43 x 60 cm) with a 20cm opening were installed on the walls, serving as animal shelters similarly as hollow trees in the wild. On the ground, there is a sand layer, stones, and roots available for another dweller of the exhibit – the Emin's pouched rat *(Cricetomys emini)*. The animal that may reach weight up to 2 kg will first attract everybody by its colours with its distinctively white lower part of the body and greyish brown back as well as a larger part of the tail, with a white tail-end. This rat is an excellent climber, so they take advantage of not only the bottom of the box with its large roots, grasses, and bamboos – which has an additional aesthetic impact – but even of all branches around the exhibit. Unlike the gallagos, the rat likes to rest on the ground, where it has constructed a nest from leaves and wooden wool. As both species eat fruits – with gallagos being partly insectivorous animals – food competition is possible, but with feeding plates installed in different levels, the animals have co-existed very well so far.

The other exhibit with space of 62 m^3 has been furnished in a completely different style, as it is inhabited by flying mammals – straw-coloured fruit bats *(Eidolon helvum)*. Ranging in the forests and savannahs of Sub-Saharan Africa, south-west Arabic Peninsula, and Madagascar, these animals are placed among the most distributed African fruit bats, using a large part of South Africa, Zambia, Malawi, and Mozambique for migration. The role of these bats in ecosystems is significant as they are an important flower-pollinating and seed-propagating species. The zoo currently holds 9 individuals. To provide them with flying possibilities, the exhibit includes only a single trunk used by the bats for perching where they stay hanging upside down. They also mostly use it for feeding, which means their feeding trays are different compared to that in the other nocturnal exhibit. The Senegal bushbaby *(Galago senegalensis)* is another species dwelling inside the exhibit. So far, only two males of this intriguing species known for its ability of making jumps several metres long as well as the large ears have been living at the zoo. The animals are highly susceptible to noise, therefore, they can be largely seen only looking out of their shelter, which is a box of the same size as the one for the northern greater gallago, but with a lesser opening (average only 10 cm). The reason was the curiosity of their room-mates, the fruit bats: as long as the opening was larger, they kept on trying to look in the box, disturbing the gallagos. The gallago's diet consists of fruits and insects, such as locusts, crickets, zophobas worms, cockroaches, and mealworms. Plans exist to add also a ground nocturnal African mammal into the exhibit – the African brush-tailed porcupine.

As all animals in the exhibits above belong to warm-requiring species, a temperature range 22-25 °C is maintained indoors.

The sea-life exhibit extended
By Ivo Firla

By the end of 2006, a first marine aquarium in the zoo's history was opened in the rhino house. Before opening this exhibit, the sea animals used to be held out of scenes, where breeding experience had been gained by the personnel. The first aquarium exhibit has a volume of 2.4 m^3, and has been occupied by largely soft corrals *(Sarcophyton, Lobophytum* and *Sinularia genuses*), *Xenia* and *Anthelia* – genuses of pulsing corals, or also a tube-like *Clavularia* coral genus. In general, these corals do not create hard skeletons. The aquarium also features sea fans *(Gorgonaria sp.)* – fan-like cnidarians forming a simple skeleton of spicules. The corals are accompanied by fish species. Forms that are capable of co-existence with other animals could be selected in course of time. Currently, species like the powder blue tang *(Acanthurus leucosternon)*, regal tang *(Paracanthurus hepatus)*, sailfin tang *(Zebrasoma veliferum)*, elegant unicornfish *(Naso elegans)*, yellow tang *(Zebrasoma flavescens)*, pennant coralfish *(Heniochus acuminatus)*, cinnamon clownfish *(Amphiprion melanopus)*, *Ctenochaetus tominisensis*, twospined angelfish *(Centropyge bispinosus)*, etc., can be seen in the exhibit

Once the exhibit was opened for the public, the zoo's intention was to extend it by other tanks that would be lesser, but still very attractive. This was successfully finished towards the end of 2008 by putting two tanks placed on both sides of the first large tank, 500 l each, into operation. The objective was to add more animals that cannot be held in the large mixed exhibit and to present other different creatures from the sea underwater world. The previous tank did not provide any chance to explore sea flora representatives, which involves diverse sea algae. There were more reasons for this: some algae present favourite food for certain fish species and if any algae would appear in the tank, it would be immediately consumed. Conversely, other algae species are able of very rapid propagation, so the corals could be soon oppressed, overgrown, and eliminated. Therefore, if any algae appear, they must be extirpated. Calciferous algae are another example – they do grow in the tank, but mostly look like rosy or violet spots on stones, thus, are not supposed to be any algae. As the zoo personnel still wanted to present the diversity of algae, various algae sea species were placed in one of the new tanks. There are algae of varied shapes and colours, with different tones of green and red that may also alternate depending on quantity of light available to the species. This tank was accordingly complemented with fish species that would not only be friendly to the algae (i.e. not destruction them by eating), but also attractive for visitors. These namely included the ribbon eel *(Rhinomuraena quaesita)*, the comet *(Calloplesiops altivelis)* and the harlequin bass *(Serranus tigrinus)*. In the upper part, there is the bubble-tip anemone *(Entacmea quadricolor)* and a pair of the ocellaris clownfish *(Amphiprion ocellaris)*.

The other new tank is dedicated to hard corals, which means the corals forming hard calciferous skeletons. Talking about the sea corals, most people will imagine the skeletons of these creatures. Hard corals are much more difficult to hold and breed compared to those the zoo already had held; in addition, they are more diverse in shapes and colours. For instance, the coral genuses like *Turbinaria, Goniopora, Acropora* (multiple species held), *Hydnopora, Favia, Euphyllia,* and other can be seen in the tank. In addition to the corals, the exhibit also features a very well-known bivalve – the clam *(Tridacna sp.)* as well as other invertebrates – shellfish like the northern cleaner shrimp *(Lysmata amboinensis)*, sally lightfoot crab *(Percnon gibbesi)*, or also the electric blue hermit crab *(Calcinus elegans)*. Of course fish species could not be omitted. For the time being, the jewelled blenny *(Salarias fasciatus)* is held in the tank; soon, it is to be accompanied by several individuals of the sea goldie *(Pseudanthias squamipinnis)*.

Transporting a chimpanzee male Siri to Krakow Zoo
By Dagmar Marková

In 2008, it was decided that the zoo's chimp breeding male Siri (20 years) be exchanged to refresh blood within the group. At that time, the chimpanzee group consisted of four females and one male.

Zira (11 years)	**Dam: Maja (21)**	**Sire: Siri**
Bambari (7)	**Dam: Hope (17)**	**Sire: Siri**

This involved a need for finding a suitable successor for the male Siri who had spent 14 years at Ostrava Zoo. An offer eventually arrived from Polish Krakow Zoo, where they also needed to exchange their breeding male Sebastián (23) for a different sire. The representatives of the Polish zoo came to inspect Siri and so did we in case of Sebastián. It was agreed that the transaction would take place on the same date, which was 30 June 2008.

Ostrava Zoo, Monday, 30 June.
In the morning, the male was separated from the females, anaesthetised, and loaded into a small box on 10 am. Once transferred to a garage, Siri was drawn from the small box into the transport crate using ropes. Soon after Siri woke up and was confused. Once he was calmed down, he got something to drink. At 12.45 pm, colleagues from Krakow arrived with Sebastián. The zoo granted me the opportunity of leaving with Siri to Krakow, accompanying him during his first days in the new habitat. As I had been working with Siri for 12 years, I do know how the apes may be susceptible to changes. For Siri, this meant separation from his family, change of place, and presence of new people and animals. Once the necessary formalities were cleared, the crate was loaded into the car and left for Poland. We made a few breaks in the course of the three-hour trip, which was used to provide food and water to Siri. Once we arrived at the zoo, the zoo personnel were already on site. They unloaded the crate and released Siri into the indoor cage. The male was confused and shouting. I was trying to calm him down by calling. Observing his new home, he started exploring everything around. Then he took some food from me. A female Jacquelin (28) was present in the next cage, however, Siri stayed alone at night.

Krakow Zoo, Tuesday, 1 July.
Siri released into the outdoor enclosure for the first time, starting exploring the place, enjoying the top seat, allowing him to have a good viewing point around the zoo. In the enclosure next door, there are about 25 noisy and inquiring baboons. Siri does not seem to care for the female Jacquelin dwelling in the cage next door. Another female called Kája (2), who has been hand-raised by the keepers due to the death of her mother a half-year ago, is watching Siri from the corridor. I spend all day with Siri, providing feeding and drinking both indoors and outside. The outdoor enclosure stays open for Siri at night as well. The zoo management has decided that both females would be introduced to each other the next day.

Krakow Zoo, Wednesday, 2 July.
Siri separated in the outdoor enclosure. Indoors, the females are being introduced to each other. They have two cages available. The older Jacquelin accepted little Kája with no problems, thus, becoming her spare mother. Siri is O.K., dwelling outdoors. In the evening, Siri builds a nest outside in the corner of the enclosure, and goes to sleep. The females are staying together.

Krakow Zoo, Thursday, 3 July.

Having spent the first night together, both females look O.K. A decision arrives: today the group will come together. Siri & Jacquelin & Kája! Hoses are in hand if any separation was required. There comes the zoo director, veterinarian, keepers, etc. After opening, the chimps are keeping a distance, they are only watching each other. Jacquelin is coming closer to Siri, accompanied by little Kája. Kája is walking around Siri, trying to thumping the ground with her little feet. Food distributed at several places around the enclosure. Apes starting feeding once released out. In about one hour, Jacquelin is grooming Siri! In the evening, Siri has made his nest, while Jacquelin has done the same some 1.5 m far away. Kája still has not fallen asleep.

Krakow Zoo, Friday, 4 July.

In the morning, all animals are O.K. During the morning, Siri and Kája are starting a paper chasing game. Jacquelin does not like it very much – she is jealous. All animals obtained bananas; I have stopped feeding today. Siri is making friends a little bit more with little Kája; they are kissing each other. When the girl keeper had supplied a new batch of food through the feeding window, Kája fails to handle the situation, striving to get to Ms Anna, who had been her carer a half of year. The window is shut, with little Kája rushing to the Siri's belly; the male is soothing the young. No response from Jacquelin. In the afternoon, everyone is quiet and O.K., so I can go back home.

Siri´s new family in Krakow Zoo

Arrival of a new chimpanzee male in Ostrava Zoo

By Jana Kálnová, Dagmar Marková, and Karin Tančiboková

As the young chimpanzee females at our zoo were growing old and in order to avoid any undesired inbreeding in the chimps, it was decided that the adult male should be exchanged. For several reasons, Krakow Zoo was selected as the transaction partner. The departure of Ostrava Zoo's breeding male has already been covered by the previous paper of this Annual Report. The objective of this text is to describe arrival and the process of integration of the new male.

The new breeding male called Sebastián was born at Kristiansand Zoo, Norway, on 6 January 1985. It arrived from Krakow Zoo, Poland, on 30 June 2008. First complications were already associated with the unloading alone due to the unsatisfactory and outdated equipment and installations in the primate facility, where our primates are housed, as each of the doors and entrances turned out to be too small to accommodate the crate, in which the male arrived. Therefore, the front of the bar fencing in one of the outdoor cages had to be dismounted to make the crate with the new male enter the house, with only a few centimetres left on both sides. The particular act of releasing the male using a rope tied to the crate door and controlled from the cage next door was not that difficult. Sebastián left the crate immediately, climbing up to one of the logs near the top of the cage, sitting there and watching the people below. Then he was moved to another cage, and the crate was put out. This could start the process of accommodation and getting used to the new habitat and the new group.

The Sebastián's access to the females was limited until 6 July. The male was placed in the neighbouring cage, where he could see, smell, and hear the females, but any physical contact was avoided. The sliding door between the indoor boxes turned out to be a problem for Sebastián as it was too small, and it took several days for him to learn how to get through. As from 7 July, the male could familiarize with the females even in outdoor cages, where a special metal screen was installed to prevent the apes stretching their hands and injure each other. The response was very friendly on each side.

On 10 July, the fixed doors in the inside boxes were replaced by bar doors allowing for contacts between the males and the females inside the house as well. Both adult females, Mája and Hope, started to perform before the male, pushing their hands through the connecting door trying to either touch or scratch the male. The younger females were much more cautious, with Zira beating the connecting door from time to time and escaping, while the youngest female Bambari was only looking in the Sebastián's cage.

Five days later, a real problem arose: Sebastián learned how to move the outdoor cage to shake the whole structure. This had a great impression on the females as well as all of us, making us afraid of the possibility of male's breaking the old rusty bars and getting out of the cage. To avoid this, pipes were installed and welded between the two neighbouring cages to fix the structure. Unfortunately, this resulted in something what was not really desired: the framework did not move very much, however, Sebastián managed to swing the cage next door as well.

The introduction as such was started on 23 July. For Sebastián's reputation of a rather aggressive male it was decided that the male would be introduced to all four females at once with all connecting doors would be open to provide run around and with everyone around keeping on waiting. Eventually, everything went a different way. After the first hour of the introduction process, the male kept on running around the cages in panic, escaping from the females that were following him with persistence. It should be mentioned at this point

that when the male arrived, he was not a full-bodied animal used to big chasing – so it was no wonder he got tired very quickly. Therefore, we decided to separate him from the females, giving him some time to rest. Two hours later, the action was repeated. This time everything went more quietly, but Sebastián was still afraid of the females and escaping. Accordingly, two females were separated on 12 o'clock – Hope and her daughter Bambari. The male was left only with Mája and her daughter Zira, which were the females with whom he had been getting along the best. An attempt of Sebastián to mate Zira was recorded by keepers the same afternoon. As the situation calmed down, the group was left separated until the next morning.

The day after, on 24 July at 10.40 am, the whole group was re-united. The females welcomed each other, but Sebastián was shouting with fear, retreating away especially from Hope. Thus, the male was spending time outdoors, with the females enjoying resting inside the house.

As a nest left by Sebastián was found by the keepers the next morning on 25 July, the male had probably entered at least to spend the night. First changes in the male's behaviour could be recorded – Sebastián was not afraid of the females so much; he was even dancing in face of Hope. Nevertheless, he was still not eating very much, failing to come for food despite being comforted by Bambari. Thus, he had to be fed by keepers outdoors. As from 28 July, the male started spending much more time with the females.

A month upon male's arrival, on 1 August, Sebastián was firstly moved into the ring enclosure connected with the outdoor cages via a tunnel under the pavement. Hope and Bambari entered first, with Sebastián following them. He was exploring everything around, unhandy in climbing the tree, and eating grass. The presence of the new male evoked oestrus in each of the females.

Two days later, on 3 August, first mating with Hope was recorded, when the female was receptive, keeping on chasing the male. Accordingly, Mája started showing a jealous behaviour towards Hope on 7 August. The female was disgusted, any grooming with males did not work very much so far. Sebastián kept on his selective behaviour concerning the food, losing a few kilos of weight. In addition, problems with Zira occurred on 17 August. This female was receptive to the male, taking his food and attacking him. As from 24 August, conflicts already expanded throughout the group. The situation got worse to such extent that Zira was chasing the male away from the feeding places, and later even out of the cage during the feeding.

From the very beginning, Sebastián paid the most of his attention to Hope; Mája's courting was rather kept unnoticed by Sebastián until mid-November. On the other side, Zira, takes a pill of Minulet (contraception) every day, which prevents her oestrus to develop fully. Therefore, reasons for constant female conflicts may include jealous behaviour and a lack of interest of the male.

We would like to conclude by stating that the transport as well as the subsequent introduction process proceeded very well. But what's more important, the highest ambition of Sebastian's coming to Ostrava was fulfilled as the pregnancy tests in Hope turned out to be positive.

Lion-tailed macaque husbandry at Ostrava Zoo

By Jana Kanichová

This beautiful macaque species found only in the south-west part of the Western Ghats mountain range in India and managed within the European Endangered Breeding Species Programme (EEP) has been held by Ostrava Zoo since 1978. First, a male from Liberec and two females from Dresden were obtained, where one of the females came from the wild. Until 1997, there was a single lion-tailed's group, subsequently, some of the daughters were separated from their family group and a new male from Wuppertal was added. Since that time until 2007, two breeding groups were held inside the primate house, with the possibility of sound and visual communication, thus provoking each other to reproduce. This kind of strategy was welcomed even by the EEP co-ordinator, as the ability of the females coming to oestrus and any subsequent rate of birth used to be low or zero in many institutions holding a single group.

In 2007, a decision had to be taken to attempt to unite all breeding animals into a large single breeding group, as trying to form another group of four adolescent males was necessary. The males could not stay in their family group any further as they were reaching or had reached sexual maturity, with too big tension within the family. The process of uniting eventually failed, with three members of the family that did not survive.

Currently, one male group and a large group of females with young are held in the primate house, with a new breeding male to be added into the female group very soon. The previous male had begun showing very aggressive behaviour not just towards the newly arrived females, but even females with their young from the original home group were attacked; this resulted in necessary separation of the male from his group.

Overall review of husbandry history at Ostrava Zoo:

- Total 47 lion-tailed macaques have been held at Ostrava Zoo to date (23.20.4).
- 39 young were born (18.17.4).
- From the number above, 12 births were stillborn (6.3.3), including 2 abortions and 1 caesarotomy.
- Total 14 young were raised to their adulthood (7.7) in addition to 5 still living juveniles (2.3).
- Five males have arrived in the history of the stock (Bubík from Liberec, Vandy from Vienna, Wuppi from Wuppertal, Ico from Dresden, and Norton from St. Catherine Island/WSC).
- The highest age was reached by Vicki (31), Ghana (30) – euthanized, Vandy (28) – euthanized, Ico (26) – euthanized, Bětka (24) – still alive, and Cacile (23).

Lion-tailed macaque breeding facilities at Ostrava Zoo.

- Throughout the period, macaques have been held in the old ring-shaped house with boxes of different size. In the past, the primates were held in lesser boxes (40 m^3); currently, the box of the breeding group is larger (51.3 m^3), with a cage-like outdoor enclosure of 93 m^3. The male group has a box with space of 40 m^3, the outdoor enclosure has 91 m^3.
- In both the indoor boxes and enclosures, trunks and logs, or also ropes and fire-hoses are available. The enclosure ground is covered by wood chips, while the indoor box floor is bedded with wooden wool that is additionally used by the primates for playing. Grass has not proved very well in the concrete enclosures for the Old World primates; any grass carpet is now used in lemurs only.
- At Ostrava Zoo, the macaques can access the outdoor exhibit all the year round 24 hours a day, with entrance openings overlapped by plastic covers that the primates can push aside and move out or in without

difficulties. This helps us trying to avoid a loss of heat. The macaques are only closed inside if temperature declines under some - 5°C.

Plans exist to develop a natural enclosure for the lion-tailed macaques in the forest parts of the zoo grounds, where two groups of this threatened and attractive species could live also next to each other.

So far, the lion-tailed macaque breeding history has produced several important findings as follows:

1. Young females should never be separated from their family group – the male should be always exchanged, as the females are subject to philopatry (also in the wild); any extraction from the group may affect their mentality.
2. If there is a critical shortage of space, efforts should be made to avoid any separated female leaving the group alone. Ideally, a mother with her daughter or rather with her grandmother or a closely related auntie should be put aside.
3. A young female should rather become pregnant with her father; applying contraception or even separating her from the group over some time should never be an option. The latter is not normal: this will only prevent the female from something she had been made for, which is giving birth and raising the young. In addition, we can never estimate if applying the contraception may cause any physiological disorder in animal's body, not excluding its mental status. Of course leaving daughters with their father is not any viable alternative; but it may resolve the issue of time, when the group includes yet even younger females that could be lost in case of introducing any new male.
4. Planning exchange of males is essential; advantage of a period when an infant male is available in the group should be always taken. A risk of infanticide should be not something to be afraid of; any other sound alternative of management technique is not available anyway in the zoo situation considering the necessity of integration of new males into the group.
5. If at all possible, any human intervention should be avoided, even in case of minor injuries. Wounds will usually recover very well even without any assistance of man; with human care exercised in good faith, things may even get worse, as animals are getting better much slower when strained, which is something sure to happen in case of human treatment.
6. Only time will show, whether the lion-tailed macaque liver degeneration in the former years could relate to a different structure of their diet, or whether this type of problem will be more frequent even today, when any semolina, jelly, rice, milk, marmalade, French loaf, or also bread had been eliminated from the diet a number of years ago.
7. Until the zoo held two breeding groups, the reproduction in both of them was frequent. Now we have to see if the male group will stimulate the breeding to the same extent. If the rate of reproduction is reduced or cut, a second breeding group would have to be set up again and the male group translocated.

Sri Lanka leopards bred at Ostrava Zoo after eighteen years

By Lenka Juříková and Roman Pastyrniak

Following an 18-year break, two Sri Lanka leopards were bred at Ostrava Zoo again. This was preceded by efforts to set up a suitable and harmonizing breeding pair that was eventually made from a nine-year-old male Dandelion coming from French Cerza Zoo, and 2.5-year-old female Minka born at Dutch Arnhem Zoo. Prior the process of introduction, the pair was kept in optical and olfactory contacts via introducing slide door between the boxes. Once the female entered oestrus, it was decided that animals should be introduced to each other under our control. To be on the safe side, we had hoses available and in place to make for possible separation by a water stream if necessary, as introducing felids can be a risky procedure, where the female can be killed. Two boxes were made available for the leopards to for potential escaping. Minka became rolling in face of Dandelion and showing her subsidiarity; both animals respected each other. This took four hours. A single case of fighting occurred during this period, when Dandelion pounced on Minka. Although the female must have been in oestrus, no mating occurred. Following a long time of contemplation, a joint decision was taken with the curator to leave the cats together and uncontrolled overnight. The next morning, when we arrived to work, we saw the leopards mating. The animals were passing each other without problems. Mating occurred in periods lasting about 15 minutes. To keep the leopards undisturbed, the house was closed for the public. On the first day, the leopards fasted; in the following days, they were separated for feeding. They were given meat without bones to make the potential introduction easier. The leopard mating period lasted six days. The day five, the house was made available to visitors. Once the oestrus was over, leopards were kept together. However, the day after we better separated them as the male was bad-tempered.

15 days after, new oestrus was shown in Minka, so the animals were paired again on day 19. This time mating started immediately, with mating period lasting five days. As soon as it was finished, the leopards were separated again. Minka did not become pregnant even this time. 14 days after, a new oestrus period occurred, with pairing and mating without problems as well as before. As long as no other oestrus was shown, it was hoped that the female had become pregnant. A month before the expected date of birth, a nest box was made ready for the female; five days before, she would not go outdoors overnight.

96 days after the beginning of the last mating, Minka gave birth to 3 live cubs at night. A camera to track the birth was placed in the nest box. Unfortunately, as Minka gave birth in the box next door, the birth as such could not be recorded. The female replaced the cubs to the nest box the day after. In the beginning, she was suspected not to be able to take care of the cubs as it was her first birth, but the camera recordings clearly showed that she was an excellent mother. Sadly, one of the cubs was weak and unable to drink; it died on day 3 and was eaten by the female. The remaining two cubs seemed to be all right. 18 days after, Minka began moving the cubs also to the box in the visitor part.

On day 36, Minka was separated from the cubs; the young were dewormed, weighed, and sex was determined. Each cub was a female and weighed 2.5 kg. When Minka was released back, she started sniffing and licking the cubs, giving them milk. On day 63, the cubs were microchipped and vaccinated. The cubs did already defend, but could be still caught by hand. They weighed 4 kg. When they were re-vaccinated on month 4, they already had to be caught using a hand net.

After the birth, the female's diet was restructured: she was given 2 kg of beef without bone, which was alternated by a skinned and drawn rabbit to avoid any disturbance caused by frequent removing the remnants of food. Once the cubs were found tasting the meat, which was on day 40, the amount was raised progressively

and portioned. As the time went by, with Minka getting used to normal operations in the boxes, the diet could be enriched with frozen chicken, chicks, unskinned rabbits, and meat with bone.
The cubs were thriving and growing. After four months, another box was made available to the group to provide more space. Due to the large mesh of the leopard outdoor enclosure fence, the young could be released only after six months. However, as it was a winter time, they stayed out only one hour if there were no frosts.

Minka gave birth in the part of the house available to the public. As the female was a very shy animal and this was her first birth, it was decided that the house should be closed for the visitors. It was re-opened to some extent about one month after the birth; on moth 4 after the birth, the house was made fully .accessible We believe this measure met understanding of the visitors and the necessary break has now been fully compensated by the sound and playful cubs.

Young female of Sri Lankan leopard *(Panthera pardus kotyia)*

The European wild cat repatriated from Ostrava Zoo into the wild in the Veľká Fatra Mountains

By Jiří Novák

Before visiting Ostrava Zoo, everyone is looking forward to see namely attractive and usually large and hairy animals. But a zoo is not only a place to meet such charismatic creatures. The zoos of today tend concentrating on including very rare and largely highly endangered species that are however often neglected and, through the eyes of a zoo visitor, less attractive; this is also the case of local fauna.

The wild cat is sure not to be listed among the most attractive animals, yet it may captivate through its charm and elegance, and surely also through the fact that this species dwells the forests in our country as well, or at least used to - the European wild cat has been listed in the attachment to the Regulation of the Czech Ministry of Environment as a critically endangered species. Of course, the status in the wild is very bad; what's worse, we know only little about this species for its secret way of life. There is not only a single reason for this; the loss of natural habitat, poaching, increased traffic, and extreme population density even in protected areas, such as the Beskydy Mountains, to mention a few, should be also noted. Cross-breeding with stray or feral cats poses another serious problem. In the neighbouring Slovakia, the wild cat is doing a little bit better, even though a clear decline has been recorded by the colleagues in this country as well. This produced thoughts of supporting the population in the wild by releases of animals raised in captivity. At the same time, experience of Ostrava Zoo in the field of repatriating species like little owls, barn owls, and golden eagles were already in place.

On 28 August 2008, another animal breeder's dream came true. And not only that of ours. Two young wild cats born at Ostrava Zoo, a male and a female, could leave the premises. However, the destination chosen was not another European partner zoo as it normally occurs with other wild cats. After handling all necessary paperwork, re-vaccinations and veterinary tests as well as upon necessary on-site preparation here at the zoo, the cats could hit the road in the direction of the mountains of Veľká Fatra.

I must add they were not alone. Other Czech zoos got involved as well: Jihlava, Děčín, and Chomutov. Altogether, 14 European wild cats were ready to go boosting the population in the wild. On behalf of all four zoos, Aleš Toman, chief animal curator of Jihlava Zoo took over the transport organisation matters.

Sure, preparation of the animals for living in the wild had to include hunting as one of the key skills to learn, which cannot be taught by any excellent mother at the zoo. The mice that the cats get in their diet are white and killed before serving - this is something that the young will encounter in the wild. Thus, animal nutrition and husbandry departments were assigned another unusual task of getting enough mice of natural grey colour. The cats soon learned what the point was and how to outwit and kill their prey.

The chosen date of release was sure not random, because the early August forest is still full of animals, namely those making potential prey for the cats in the wild. Inexperienced and unskilled juveniles are still a very useful opportunity for a young cat to perfect its hunting strategy before the winter time. Any earlier dates were impossible, as the cats were still too young.

In felids, a method of uncontrolled release seems to be the most appropriate repatriation option. It was just this type of releasing which determined the selection of suitable locations in the mountain range. The first site featured bush and forest stands near Kaľovany on the banks of the River Váh, the second option was Sklabinský Podzámok near the City of Martin, while Čremošná, a sub-mountain range about 3 km east of Turčianske Teplice Town was selected as the third locality. With its high level of conservation work, the National Park Veľká Fatra provides advantages not only in terms of diversity of potential prey for the wild cat, but also from a pure practical aspect. First, our Slovak colleagues – Miloš Majda, a field zoologist, and Tomáš Hulík, a field photographer – are top professionals, which is sure to raise the chances for the success. Moreover, the vicinity of the mountains of Moravian Beskydy provides a hope that genes of our 'Czech' cats may return to the Czech Republic in their wild form one day.

Wild cat looking towards its new future in the wild

Transport of Johti and Vishesh females from Belfast to Ostrava Zoo
By Dan Zvolánek

Dear colleagues and zoo friends, let me use this opportunity to share my experiences soaked up by transporting two female Indian elephants: Johti (41) and Vishesh (11), Johti's daughter.

The transport project was carried out through Ekipa, a Dutch transport company. This was rather a complicated matter, namely regarding the length of the route (about 2,300 km), but also due to the task of transporting two females at once. The date of departure from Belfast Zoo was set to 7 April, with 10 April 2008 as the expected date of arrival at Ostrava Zoo.

We had already left for Belfast on 31 March to get enough time to learn working with both elephant females the best we could and also to provide time to the animals to get used to us. This was extremely important namely in Johti as this elephant had been held under a free-contact system, which was something quite different compared to the practice we had used, i.e. a protected contact. Upon Johti's arrival at the zoo, we were able to continue to work with her under a free-contact system. Vishesh is now kept in the same manner as at Belfast Zoo, i.e. under a protected contact system. Vishesh had been getting used to chains, an essential part of female elephant loading, already several weeks before the transport. Johti had already been used to wear chains, as one front leg and one hind leg of the female was always tied during routine training. Following a week of intense learning how to work with the females, a day of transport arrived. Prior the transport as such, both animals were sprayed by a special animal insect repellent due to the necessary crossing an area where blue tongue disease had occurred, as this disease is transmitted by insects.

The morning of 7 April came, and an Ekipa truck containing two elephant transport crates parked in front of Belfast Zoo. Each of the containers was sized as follows: height 3.75 m, width 2.45 m, length 6.20 m, and weight about 10 tonnes. Systems of video surveillance, ventilation, and heating were installed in each unit. The containers were designed to allow for checking, feeding, and watering the animal whenever on the way. In addition, an area to store any feedstuffs needed during the transport was available. One of the containers was equipped with two electric engines to drive the rope drum necessary to draw the elephant in. As expected, there was not enough space for the truck with the containers right in front of the elephant house, thus, it had to stay in the zoo car park, and both units needed to be transferred to the house. To handle this, a crane and a tractor with a trailer were deployed. The containers were arranged in the row to follow each other, with the one containing the rope drum going as the second in the row so that the first elephant could be drawn into the first container that was at the same time safely fixed to the house. Vishesh was the first animal to be loaded, while Johti was to be taken out to the lesser area of the outdoor enclosure, where it was expected to stay throughout the loading of Vishesh. The third female, Tina, was to stay separated inside the special box throughout the loading period. A veterinarian was present in order to sedate the females, however, this was refused by the transporting company as their experiences with transporting sedated animals were no good, so this method was considered a last option. At 12.00 o'clock, Johti was taken from the house. At 1 pm, efforts started to put the chains on Vishesh's front and rear leg, which was a very difficult task considering the fact Vishesh was not any full-contact elephant. The action of putting on the chains lasted about an hour and required 12 people. At 2.30, the process of slow drawing the Vishesh inside the container began. At 2.50, the container with Vishesh inside was ready for replacement to the car park and transloading into the truck. Subsequently, the container for Johti was attached to the animal house. The process of loading Johti started at 4.10 pm. In Johti, putting the chains on was a matter of routine, which allowed for slow drawing the elephant inside the container already

at 4.20. At 4.30, the Johti's container was ready for transfer. At 6.00 pm, the second container was transloaded as well and the whole transport unit was ready to leave for Ostrava Zoo. No sedation of any elephant was necessary throughout the loading process. Legs of both female elephants were kept tied. The elephants were fed and watered about every 8 hours during the journey, feedstuffs included fruits, vegetables, haylage, and pellets.

7 April, 7 pm, we started our way home together with the unit. The first section involved crossing from Belfast to Larne. This took about two hours. In Larne, we embarked for the first of two ferry boats at 10 pm. The truck was fixed with chains under the deck. We were still permitted to check and feed the elephants, of course this always took place under the control of the shipping company. Both females fully handled the shipping without any trouble; according to video records, they even fell asleep. On 8 April, 6 am, we disembarked in Fleetwood, and continued on the land, facing another section: Fleetwood and Kingston upon Hull. This was covered without problems. Then we went to embark for the second ferry. At 9 pm, we put out, direction Rotterdam. Again, this part of navigation was handled by both elephants without any major complications; only one of Vishesh's chains was broken, but the other chain still remained undamaged. On 9 April, 8 am, we disembarked in Rotterdam and went on via land. The last section was stretching between Rotterdam and Ostrava towns. Around 11 pm, the transport reached the Czech border. As both drivers and elephant females were apparently tired following the all-day-long travelling, the truck with the females was left in Prague, while we continued to Ostrava in the accompanying car. The truck continued from Prague on 10 April, 6 am, arriving in Ostrava Zoo at high noon. Everything was already in place for unloading the females and taking them inside the elephant house, including the presence of two Belfast keepers. Both elephant females covered the long trip without troubles, always accepting the provided feeds; no check revealed any need for medical treatment.

A crane was necessary for the process of unloading as well as for that of loading. First, both containers were moved by the crane from the truck to the flat and solid ground, then the containers were placed into the outdoor enclosure. Throughout the unloading, the Indian elephant females Suseela and Jumbo that have been kept at the zoo since 2004 were staying inside the house in one of the two parts of female keeping section, while Johti and Vishesh were expected to enter a male keeping section of the house, which was to provide an empty space formed by the other part of the female section. During unloading, Suseela and Jumbo were staying calm, without showing any nervous behaviour. When the container with Johti was placed to the house and fixed, the action of unloading as such could start. Johti left her container in peace without any hesitation. She was fully controllable immediately upon the unloading. This female was unloaded first as she could be fully controlled thanks to the keeping under the free-contact system. Mother Johti was expected to be a motivating element for her daughter to leave the container as quickly and safely as possible. Next, Vishesh's unloading followed. Again, there was the same procedure of placing the container to the house and opening the container gate, with the only difference of Johti already waiting for Vishesh inside the house, of course under the supervision of the keeper. However, Vishesh did not want to leave the container at all. This could be made successfully only after some two hours of constant Johti's leading to the crate containing Vishesh and back. Once both Johti and Vishesh left their containers, they were provided with food and a drinker with water. After a while, the females started to feed, which successfully completed the transport process. Now, Ostrava Zoo currently holds four Indian elephants, with a prospective male to arrive soon.

Lastly, the only thing to add is to wish everyone at the zoo that the objective of this transport, which is of course an elephant baby at Ostrava Zoo, be fulfilled.

Uniting the group of four female Indian elephants at Ostrava Zoo
By Pavel Zvolánek

On 10 April 2008, the Ostrava Zoo's doublet of the Indian elephant females Suseela and Jumbo that had been living at the zoo since October 2004 was complemented by two female elephants Johti and its daughter Vishesh coming from Belfast. Johti was captured in the wild, and is estimated to be 41 years old. Unfortunately, she had already turned out to be not very tolerant to other elephants as it was a highly dominant animal. Vishesh was born at Belfast Zoo in 1997. Behaviour of this female is very different from that of her mother. It is a very friendly animal, seeking close contacts with others.
Our original intention was to group the females following the phase of visual contacts over the barriers outdoors as well as indoors. However, the grouping process had to be accelerated for the increasing level of nervous behaviour inside the group. Nevertheless, we had to wait until the Vishesh's trunk injury that happened on 21 April fully healed. (See the report on page ...)

The first contact between the females occurred on 2 May, with the doublets separated by an unplugged rope and the gates dividing both enclosures. It was namely Jumbo and Johti seeking contacts, attacking by their heads and beating each other with their trunks. Jumbo was trying sniffing Johti's outer genitals, which was prevented by the female's vigorous kicking. The other two females did not get involved the struggling, keeping a distance. The situation calmed down after three days, when the struggles stopped.

The next planned step was grouping the animals in both outdoor enclosures, which was decided to take place on 12 May. As Suseela was the elephant considered an alpha female, we decided that she should be grouped first with Johti and Vishesh, and only then Jumbo should be added. Even though Suseela tried to face Johti, she started submissive behaviour very soon by urinating, calling by very high tones, and allowing Johti sniffing to her outer genitals. Johti was subordinating the other female for about 20 minutes, then she stopped attending to her; in addition, a contact between Vishesh and Suseela also occurred. In the course of Johti's aggressive behaviour, Vishesh always kept in a different part of the enclosure, avoiding involvement in any struggle. Vishesh started showing interest in Suseela after the situation became peaceful, reaching her several times and trying to establish contacts very friendly. The grouping process lasted about 3 hours, with only a single sharper attack of Suseela by Johti; for the rest of the time, the group was peaceful. In the course of the process, the females were given fruits to disperse their attention. Throughout this time, Jumbo was separated inside the house, showing normal behaviour and taking a standard quantity of food.

The day after, only Jumbo entered the enclosure; Suseela refused to go out of the house. Therefore, no grouping occurred. On 15 May, we proceeded to grouping of all animals. The first contact between Jumbo and Johti was peaceful beyond any expectations, with only several head strokes; 20 minutes later, the situation calmed down. During this kind of struggling, Vishesh strived to regulate the situation by its presence, which was quite successful. Johti, Vishesh, and Jumbo mostly kept themselves together; Suseela kept a distance from others. The females spent three hours together in the enclosure with no major troubles.

On 16 May, we managed to group only Jumbo with Johti and Vishesh, with Suseela refusing to leave the house. Jumbo's attacks by Johti became much sharper compared to the day ago, which was accounted both to absent

Suseela and Vishesh failing to try regulating the struggles.
Until 27 May, any efforts to group the animals outdoors failed, which was either due to the animals as such refusing to leave the house, or due to the necessary repair of the electric gate. Therefore, we decided that the females should get the opportunity of contacts over the barrier at night as well.

On 27 May, unproblematic grouping occurred in the outdoor enclosures; at night, the entire group could enter and walk through even one part of the house. This mode was maintained until 3 June. During this period, any training was only performed with Johti; procedures with Jumbo and Suseela were omitted intentionally to keep the contacts within the group as long as possible. As Jumbo and Suseela were dwelling inside the house only at night and sporadically, we were providing feeding and watering outdoors. The 24/7 video recording running inside the house revealed that Johti was permitting any staying inside to Suseela only; Jumbo was always chased outdoors by Johti, even though prevented by Vishesh several times.

From 3 to 13 June, the females had to be separated again; this time it was due to finishing work on the shading structure in the outdoor enclosure. During this period of separation, Jumbo started attacking Johti via the rope fence inside the house. Another grouping occurred on 14 June; everything went without problems. As from 20 June, the house would be accessible even during the morning. This opportunity was used only by Johti and Vishesh, with Suseela and Jumbo staying outside near the shading structure and mud wallow. During this time, we still continued training only with Johti. The almost smooth grouping process was underway up to 28 June, when Jumbo was struck into the moat by Johti in the afternoon. Jumbo did not get up before the other females were put inside the house. The female was moving without difficulties and taking food; also, the re-grouping performed ten minutes after proceeded as if nothing had happened. As from 7 July, we began training Vishesh as well inside the house every afternoon. On 11 July, Jumbo was showing lassitude in the outdoor enclosure. Once separated inside the house, the female was often drinking, taking no food. Therefore, we divided the house inside as well as the outer enclosures, and the females could only keep contacts over the barriers. During the following day, Jumbo's behaviour and food intake reached a standard level again. From 13 July, the females were kept re-grouped, however, separated every afternoon. At night, we divided the enclosures and the house so that Jumbo could dwell inside as well. This again resulted in frequent attacks between Johti and Jumbo over the ropes inside the house.

Until 25 July, the females were kept outside during the day, respecting each other, with only several cases of Johti attacking Jumbo, which however always involved only short attacks in the morning once the females were regrouped. On 25 July, the female elephants could not be re-grouped, which was again caused by the work on the post within the feeding palisade. On 26 July during the morning, an incident happened, which prevented us from any further re-grouping. Johti attacked Jumbo very wildly, with Jumbo falling into the moat containing mud and sand washed with the rains that had lasted several days. After separating the other females into the house, we went to Jumbo, trying to help her stand up. The outside temperature was mere 10°C and it was raining. We had to enter the moat to get closer to the female, although this animal had not been used to enter in direct contacts with humans. We were throwing sand under her feet by shovels, trying to support the female using long poles, however, any efforts seemed to be helpless. Other alternative, maybe the ultimate one, was to sedate the female chemically, drawing her out of the moat using heavy equipment, as Jumbo had already been lying down in the moat over two hours. In order to achieve this, ropes were arranged

to be passed under the female's body and connected to a tractor. While this was underway, we still kept on pushing the long poles under the female, trying to make her moving by levering. This might be the reason, in addition to the considerable number of people moving around the female that made the animal stand up. We immediately left the enclosure. However, the female was so exhausted by such extreme suffering of nearly three hours that she even did not attempt to make any attack.

From this day on, we stopped any grouping efforts involving Johti and Jumbo. During the morning grouping of the females, Jumbo is always kept inside the house, entering the outdoor enclosure only if accompanied by Suseela, with whom the female spends the rest of the day. The situation could be resolved by two alternatives: either maintaining the existing handling method, which means preventing any direct contacts between Jumbo and Johti, or placing Jumbo into another zoological park. Any re-grouping all four females has not been considered, as we need to avoid the risk of a more serious injury of any animal.

Vishesh and Johti

Training Johti and Vishesh, the Indian elephant females
By Jaromír Fiala

Johti

This female is the first animal and also the only elephant in the Ostrava Zoo's elephant keeping history, with which we currently work using a free-contact system. Johti is trained in two sessions a day; from 11 to 12 o'clock am and from 2.30 pm. The morning training concentrates on control, obedience, and general cleanup including showering. During the main season, narration for visitors was added to the training session. In the afternoon, the focus is rather a condition of nails; as of May 2008, we have a special foot stool available, with which Johti became familiar very soon, using it for putting her feet on when being treated. Any handling is well-accepted by this female. Using a nail rasp made her a little bit nervous, but no difficulties occurred.

Vishesh

Working with Vishesh began a little bit later due to the injury of her trunk. In early July 2008, the female was already able to grasp the food by her trunk and take it directly from her keeper, so we could proceed to bathing using a high-pressure cleaner before 11 am on a daily basis. At the same time, daily training with her front legs was launched, which occurs every afternoon following Johti's training session. Training with hind legs was started in the mid-October 2008. At the beginning, the female would grasp the food directly by her trunk; but later on, we needed her to pick the goodies offered to the elephant females during their training from the ground as it she had been used in Belfast, which could at the same time provide her with more space for giving the hind legs. In the mid-December, a cross-bar was installed to the gate of the box modified for protected contact, on which Vishesh could give her legs in a much more comfortable way. She handled everything very promptly including picking the goodies from the ground. However, this kind of solution of Vishesh's training is not a final one, as in future, the female is planned to train in a restraint chute, development of which is to begin in January 2009.

Lastly, I need to mention the health status of Johti's and Vishesh's feet. In Johti, the nail condition has greatly improved namely for the daily bathing. As the nails were very soft, especially near the cracks, we started using tar combined with 3% solution of formalin. In other cases, Persil is used for washing the feet, with following application of Eliot salve. For bathing, various combinations of Persil and magnesium sulphate, tea-tree oil and magnesium sulphate, and horsetail are alternated. In case of Vishesh, Persil was used for washing with subsequent application of Eliot at the beginning, however, minor complications in form of abraded and cracked outer nails on each foot appeared. Then it was found very soon that the female was abrading the nails during afternoon playing in the pool, so we had to return to the tar and formalin combination, and the bathing had to be limited.

Hormonal level analysis in elephant urine at Ostrava Zoo
By Jana Kálnová and the Elephant Team

Currently, Ostrava Zoo holds 4 females of the Indian elephant *(Elephas maximus)*, which is the largest elephant herd in the Czech Republic. To the existing females, Suseela and Jumbo, two more females from Belfast Zoo were added in April 2008: Johti and Vishesh. Another animal expected to arrive is a male Calvin from Hannover Zoo to be added to the group in spring 2009. As there has not been any live born calf in the history of Czech and Slovak zoos so far, it is hoped that the group will successfully breed.

In elephant females, there is a recurring oestrus cycle, which however differs from that in humans especially by its length: elephant females ovulate only four times a year. Therefore, Deutsches Primatenzentrum Gottingen was contacted immediately upon arrival of the females from Belfast, a centre with many lines of work including hormonal analysis in elephant female urine. Such analysis will allow us for recording the cycle and introducing the male to the female at the right time to achieve pregnancy.

Lasting about 16 weeks, the cycle consists of a luteal phase (8-11 weeks) and a follicular phase (4-6 weeks). During the follicular phase, two peaks of LH (luteinising hormone) level can be recorded. The first LH peak will occur about 16-23 days upon termination of the luteal phase, and is non-ovulating, meaning that no egg be will released. The second LH peak is ovulating – the egg is released, thus, it is the best time for the female getting pregnant. This peak will appear about 18-23 days following the first peak, and will last some 28 hours (Brown *et al.,* 1999).

For the analysis to be carried out properly, urine must be collected routinely on the same day of a week, most preferably at the same time of the day, as the hormonal level may vary during the day. Further, the collection alone will require a certain level of skills (see the photograph), even though only 2 ml of urine is always enough to make the analysis. There is the following procedure of collecting urine. While the elephant takes shower from one of the keepers, the other keeper will step up from behind with a pot inserted on a telescopic bar. The elephants often urinate while showered, however, this is not a rule of thumb. Therefore, the zoo keepers currently try to teach the elephants a new command, "piss". If the command is performed, the animal is remunerated and stimulated to co-operate better in future.

Once urine is collected, samples are frozen and sent to Gottingen on a monthly basis. Costs of analysing a single sample are € 8.50, with two hormones analysed: pregnantriol and creatinine. Knowing the hormonal level, we will be able to predict a female's heat with an accuracy of days.

The urine hormonal level analysis was firstly carried out only in Jumbo, Johti, and Vishesh; later on, we proceeded to collect samples from the oldest female Suseela as well. Unlike with other females, the reason was not to indicate when this female was entering oestrus, but rather to determine whether the female was still cycling or not, as any pregnancy in such an old animal – in addition delivering its first birth – could pose a high risk to the female. With over total 100 samples examined and a half-year monitoring period, cycling in Suseela could be definitely excluded. On the other side, all of the three remaining females – Johti, Vishesh, and Jumbo – were cycling regularly, with two oestrus periods recorded in all of them over the controlled period.

Therefore, monitoring in these three females is to continue.

I would like to conclude with thanks, which go to all of our elephant keepers, namely Jarda Fiala, Igor Švihálek, Dan Zvolánek, and Pavel Zvolánek for their notes and comments to this text as well as for their helpfulness and self-dependent approach in collecting the samples.

Brown, J.L., Schmitt, D.L., Bellem, A, Graham, L.H., Lehnhardt, J. 1999. Hormone Secretion in the Asian Elephant *(Elephas maximus)*: Characterization of Ovulatory and Anovulatory Luteinizing Hormone Surges. Biology of Reproduction 61: 1294-1299.

Withdrawal of urine from elephant cow for hormone analysis

Trunk amputation in Vishesh, the Indian elephant female, at Ostrava Zoo
By Igor Švihálek

On 21 April 2008 in the morning, on day 11 following the arrival of the Indian elephant females Johti and her daughter Vishesh at our zoo, a shock like in some horror movie was waiting for us all. The young Vishesh's trunk tip was fully red from blood. A more detailed examination found that the female had lost a piece of trunk. It was unbelievable for all of us as there was almost no blood in the boxes except for some splatters and drops. However, we did believe when the missing part, which was about 25 cm, was found in the feeding cart. Looking for the place where Vishesh could be injured, we could not find any, even when checking the video record from the camera system. The only explanation seemed to be biting of the trunk by female's mother, however, this was still unbelievable, and to find any reason at all, we could do nothing but speculating. Maybe some stress after the transport or due to the new environment, maybe a misfortune was involved – no one will ever know. The place of amputation was not bruised at all – it rather looked like it had been cut, so the end of the trunk was sure to have been torn off very fast and using a great power. Curator Ing Firla and veterinary doctor MVDr Gajdošík were immediately informed, and therapy discussed.

The follow-up care of Vishesh and treatment of the injury proceeded as follows:
21 April: The day of injury. The trunk washed with cold water from a hose to wash out any dirt and provide cooling at the same time. During the day, the wound treated once using tea-tree oil and once applying 10% Betadine solution. 20l of chamomile brew made available in female's drinker instead of water at night. Throughout the day, feeding applied directly into the elephant's mouth (total 30 kg of fruits and vegetables), and water provided directly from the hose.
22 April: 6 g of Augmentin applied by injection. Trunk washed with water and treated with 10% Betadine solution four times a day. 3 Equipalazon packs administered. Vishesh still fed and watered directly into her mouth.
23 April: Low quantity of diet fed directly into the mouth accepted. Vishesh started using her trunk, e.g. for picking cotoneaster growing along the moat in the enclosure or throwing sand on her back; she was also putting haylage on the trunk using her front leg or even kneeling and picking up the haylage directly by mouth. 6 g of Augmentin applied by injection. 3 Equipalazon packs administered two times. Trunk washed with water using a hose four times a day and a treated with 10% Betadine solution (two treatments) and lavender solution (two treatments). Watered from the hose several times a day.
24 April: The trunk got distinctively better. The female drinking alone from her drinker. Using her front leg, she could put haylage and also fruits and vegetables to her mouth. The same kinds of treatment and medicaments until 28 April.
28 April: Augmentin and Equipalazon stopped. Washing with water from the hose and treatment with Betadine and lavender continued.
07 May: Vishesh able to eat 4 kg of pellets.
Treatment with solutions continued, the frequency reduced to 50%.
16 August: Therapy finished.

To conclude:
We were much surprised, even shocked, by the 'cleanness' of the cut. There was only a minimum of blood on the site. Vishesh showed a high level of readiness and co-operated very well. She already started using her trunk for feeding as soon as day 3 after she was injured; she could already drink on day 4. The healing process proceeded without any complications and very fast. Currently, the female can use the trunk for feeding and drinking, powdering with sand, and sprinkling with water. However, she still often cannot do without her front leg.

During first days Vishesh was given food and water directly into her mouth

The history of deer keeping at Ostrava Zoo
By Ivo Firla

As the deer were among the first animals held at Ostrava Zoo, the history of deer keeping is very long, with the sika deer and the roe deer as first species ever kept. Animal records from former times are not complete or missing.

Throughout the history of the zoo, 14 deer species have been held, with the highest number in 1975, when there were 11 species of this group; from this period on, the deer species numbers have been on decline. Several species have never reproduced, including the elk held only 9 years, and the Reeves muntjac that has been held since 2003. There has not been any breeding success with this species, as at the time one of the female was pregnant, both breeding groups were killed by predators. Currently, there is a new pair.

The Siberian red deer that has been held since 1964 is the species with the longest history as can be sustained by the records. The first ever animals were imported from the former Soviet Union, but the existing stock comes from the zoo's own offspring, Olomouc Zoo, and Riga Zoo. At the same time, this is a species with the highest number of animals born (76) and raised 62).

The species held for the long time wapiti However, this species was already terminated in 2005, together with the white-tailed deer, mainly in order to gain space, which means that more space was made available for other deer species. This affected not only the wapiti, but the white-tailed deer as well, where the zoo was unable to find any unrelated breeding male. In selecting the species to remain at the zoo, the Eurasian species were preferred.

Throughout the history of the deer stock (57 years), 362 young were born, from which 257 were raised until one half of year old, which makes 71%; this only involves animals included in the records except for the red deer and the fallow deer.

The current deer collection comprises four deer species: the Siberian red deer, Pere David's deer, Vietnamese sika deer, and the Reeves's muntjac. In future, the number of species is to be enlarged by 1 or 2 species subject to implementation of the planned new Asian Safari exhibit. More details on the collection and animals bred can be found in the chart and diagram below.

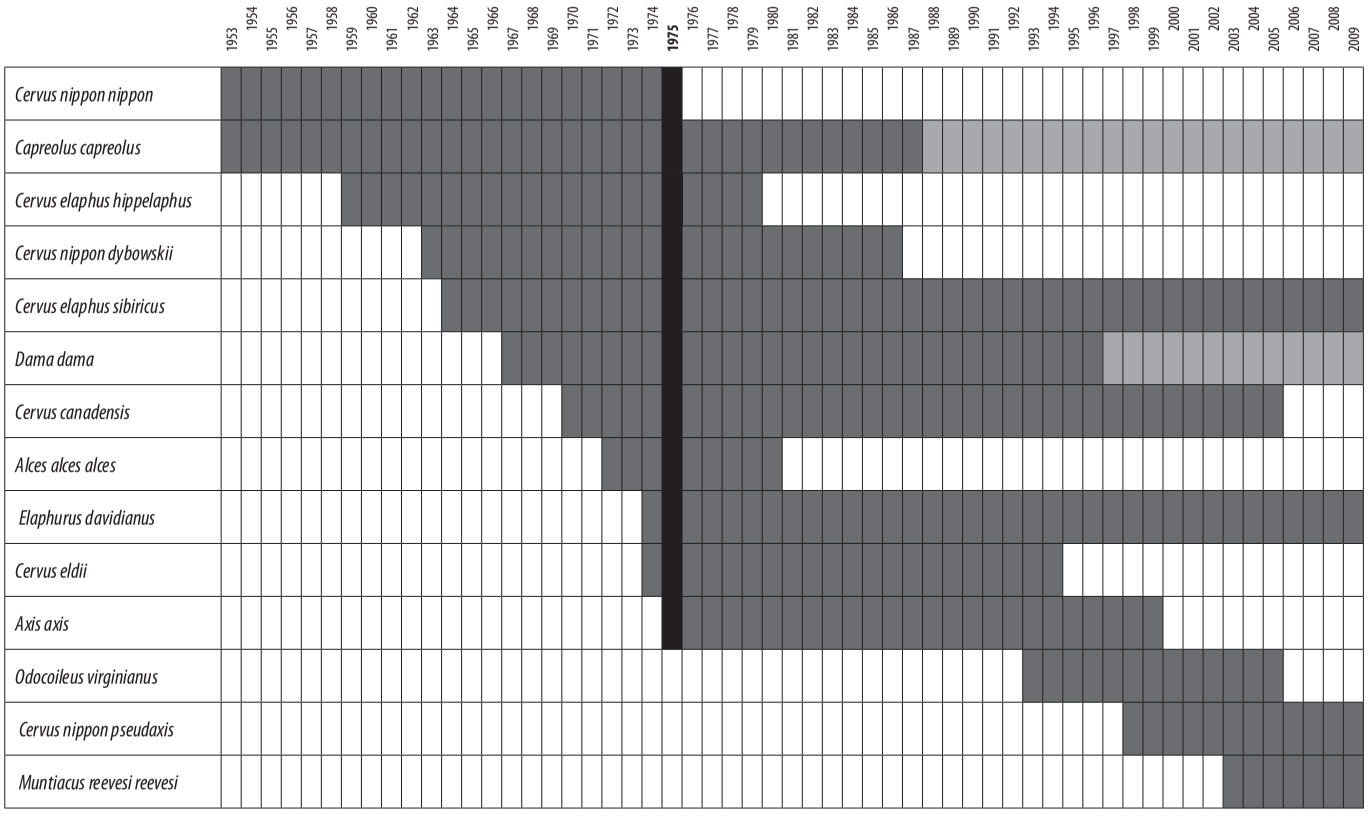
LIST OF BRED SPECIES

	species	total number of animals kept	start of breeding	origin of animals	end of breeding
1	*Cervus nippon nippon*	19	*1953	1,2 (Zoo Děčín)	1975
2	*Capreolus capreolus*		*1953	donations 2,1	no records since 1988
3	*Cervus elaphus hippelaphus*	39	1959	???- 5	1979
4	*Cervus nippon dybowskii*	31	1963 1968	Zoo Praha 1,0 later import from.SSSR 1,2	1986
5	*Cervus elaphus sibiricus*	91	1964	Zoo Praha 0,2 import SSSR+1,0 import SSSR	
6	*Dama dama*		1967	Zoo Brno	no records since 1997
7	*Cervus canadensis*	61	1970	Zoo Helsinki 1,3 Zoo Berlin 1,1	2005
8	*Alces alces alces*	4	1972	imp.SSSR 1,2	1980
9	*Elaphurus davidianus*	78	1974	Zoo Leipzig 1,1	
10	*Cervus eldii*	25	1974 1979	1,0 (1,1) Zoo Leipzig	1994
11	*Axis axis*	53	1975	2,1 then 0,3 - Triglavski NP	1999
12	*Odocoileus virginianus*	17	1993	MS Fryčovice	2005
13	*Cervus nippon pseudaxis*	38	1998	1,3 Tierpark Berlin and Zoo Kronberg	
14	*Muntiacus reevesi reevesi*	9	2003	Zoo Plzeň 2,0	

REPRODUCTION IN INDIVIDUAL SPECIES

p. č.	druh	reproduction			
		no. of offspring born	reared	death	
				till 3 days (including stillbirths)	till 6 months
1	*Cervus nippon nippon*	13	8	1	4
2	*Capreolus capreolus*	-	-	-	-
3	*Cervus elaphus hippelaphus*	21	20	0	1
4	*Cervus nippon dybowskii*	22	20	1	1
5	*Cervus elaphus sibiricus*	76	62	8	6
6	*Dama dama*	-	-	-	-
7	*Cervus canadensis*	53	39	7	7
8	*Alces alces alces*	0	0	0	0
9	*Elaphurus davidianus*	68	50	10	8
10	*Cervus eldii*	20	9	8	3
11	*Axis axis*	43	24	13	6
12	*Odocoileus virginianus*	13	2	*9	2
13	*Cervus nippon pseudaxis*	33	23	9	1
14	*Muntiacus reevesi reevesi*	0	-	-	-

THE BREEDING YEARS



Vinaceous parrots bred at Ostrava Zoo *(Amazona vinacea)*
By Yveta Svobodová

In 2003, Ostrava Zoo obtained two vinaceous amazon males from France, with the first male hatched on 22 May 1990, and the second on 5 May 2000. Both birds were placed into an indoor exhibit, dimensions: 170 x 240 x 220 cm (W x L x H). There was the possibility of flying into an outdoor aviary, dimensions: 34 x 340 x 300 cm (W x L x H). Both indoor and outdoor aviaries were furnished with perches, as well as branches for biting. The males tolerated each other very well. In 2006, females were acquired, with the first one coming from Loro Parque, Tenerife, hatched on 8 May 2003, while the other female came from Stuttgart Zoo, and was hatched on 25 May 2003.

Following a three-month quarantine period, which was finished in September 2006, all four individuals were grouped in a new aviary, with dimensions similar to that of the males, to allow for natural selection. A pair was formed about three weeks after: the birds followed each other, showing sympathy, grooming feathers on their heads and necks, and fed each other. This involved the younger male and the female from Stuttgart. Other two birds were showing no interest in each other, which still remains.

Following four weeks, the newly formed pair was isolated into a separate aviary with the same dimensions as that of the first aviary for two males. Throughout the year 2007, no courtship behaviour appeared in any of the pairs despite the box offered with dimensions: 40 x 35 x 80 cm (W x D x H). In early 2008, a very unusual behaviour appeared in the male: boasting, tilting wings, tail stretching, eye pupil dilating; the bird was much noisier, showing some level of aggressive behaviour towards the female as well as the girl keeper. After some 2 or three weeks, the female started showing the same. Both birds became highly aggressive; the male was attacking against the mesh if someone came near to the aviary, immediately attacking anyone entering inside the cage. In February 2008, they were offered the same box as in 2007 once again, and diverse diet started to be fed including fruits, vegetables, nuts, pre-soaked legume seeds, sprouted grains, and increased doses of Vitamin E and Promotor.

During such period, serving mineral grit facilitating digestion is essential, as grit contains hard non-soluble minerals in form of small pebblestones, limestones, shells, and char-coal, which supports crushing the hard particles in the food. Grit is a solid source of sodium, phosphorus, chlorine, and calcium. Calcium is essential for females – it is the key element of the egg shell. In case of a lack of calcium in diet, calcium is withdrawn from bones by the organism. The lack of calcium may result in thinning egg shell, malformed chicks, or also bad health status of the female. Therefore, it is essential that calcium is supplied before egg-laying period, during incubation and hatching, and also throughout the raising period.

As from the beginning of April, both birds were visiting and arranging the nest-box. They were provided with wood shavings mixed with coconut fibre as well as larger chocks of soft wood, which the birds cut into pieces inside the box. Several mating attempts using the perch were observed as from 13 April, with each of them completed. As from 23 April, the female was already staying in the nest-box all day long. On 1 May, three warm eggs were found in the box. The eggs were lighted through after about 15 days, when the female had already started to leave the box to cool down the eggs. Two eggs were impregnated, while one was not. On 24

May, both chicks were already hatched. Following hatching, the natal down of the juveniles was very sparse; the female kept on sitting on the young up to the age of about three weeks. About the week three, the chicks started opening their eyes, featuring growth of short second down feathers of grey colour. Within six weeks, feathers on chick heads emerged; their wings were already fully fledged, with flight and tail feathers not still fully developed.
On about day 14, the chicks were ringed using 11 mm rings. They were still raised by the parents without any complications. On day 20, both young amazons were weighed. The weight of the birds was 284 g and 310 g, respectively. The parents were delivering excellent care and the crops of the young birds were kept full. In addition to the standard pre-nesting and incubation diet, the birds were given sponge-biscuits, multi-cereal bread, low-fat curb, boiled egg, scraped carrot, and Vitamix for exotic birds. Due to the amount of food consumed by the birds, the daily ration had to be increased progressively.
On day 52, one of the young birds was looking out of the box; two days later, it already flew out, followed by the second bird that flew out two days later. Observation revealed that the parents had failed to provide additional feeding to the young. Even though both male and female were still showing aggressive behaviour, they stopped fulfilling paternity functions.

The young birds had to be separated from the parents about four days after leaving the box. Their nutritional condition was very poor; they lost weight and stopped flying, showing poor motor coordination. They were weak and exhausted, and their crops were empty. They weighed 300 g and 305 g, respectively. They were placed into a cage containing a big and partly covered plastic box to provide more safety and make them feel they were still staying in the box. The young birds were given two supplemental feedings a day using Nutribird A 19, dosage 1:2. In addition, both birds obtained calcium by a single injection application to facilitate proper development of bones.
Six days after, the young already gained weight – they weighed 324 g and 308 g, respectively. They were becoming more self-dependent, starting climbing the cage as well as perches, and receiving soft food like apple, pear, boiled carrot, bananas, boiled maize, sponge-biscuits, and pre-soaked grains. Within a few days after, they were offered dry grains, such as sunflower, maize, wheat, safflower, millet, shelled oat, sorghum, mung beans, linseed, and buckwheat. The young birds were showing an interest in such diet as well. Following 10 days, the birds were moved into a much larger cage, dimensions: 5 x 2 x 3 m (L x W x H). They were placed in the cage together with young yellow-headed parrots so that all young birds could be learning to fly, training their wings, as well as extending and enforcing their muscles. The size of the cage suited them all. The birds soon learned to fly to the feeding plate, self-dependently receiving all of the food. DNA analysis of collected blood samples revealed the vinaceous parrots were a male and a female The final weight of the birds was 338 g and 320 g, respectively.

Although the home range of this beautiful parrot was once a vast area, it is now at the edge of extinction. The species is listed as Vulnerable in the Red List, with numbers still decreasing. It is protected by CITES, and listed in the Appendix I.

Returning the Golden Eagle *(Aquila chrysaetos)* to the Mountains of Moravskoslezské Beskydy Project: First three years already passed

By Petr Orel and Petr Čolas

So far, the golden eagle project has been running very smoothly; any such success could not even be hoped for by the project team in the very beginnings. The fatality rate has been zero so far, compared to that of the young golden eagles leaving the nest in the wild populations that had been ever monitored, which is very high. The released birds are able of self-dependent hunting and feeding, and what's more, some first pre-stage of future reproduction efforts has even occurred: some of the young eagles released have already started their own territories.

Project development in 2008.

All four young golden eagles brought from Slovakia in 2008 have not only been fully raised, but even successfully released into the wild, where they have been able to feed themselves. The release as such took place on 8 August 2008. This involved two males and two females, thus, birds with a balanced sex ratio was released last year for the first time within the project. In the previous years, females clearly prevailed. Supplemental feeding is provided by the project members to the birds even after the release, namely to the young ones.

In 2008, no major health complications accompanied the process of raising and releasing the young birds, unlike the year before. Translocation of only three juveniles from Slovakia to Bartošovice was the only change in the methodology. One of the young birds was fully raised directly in the rescue centre in Zázrivá, Slovakia, under their handicapped golden eagle female, until the period of translocating all young to the release aviary in the mountains of Beskydy.

In 2008, satellite tracking could be employed within the project for the first time thanks to the Czech Ministry of Environment's grant, which made systematic tracking of the eagles possible. Via constant monitoring, a lot of information of great value has been obtained, further processing and evaluation of which is still underway.

Project temporary review.

- 2006: Releasing process launched. 4 young birds (1 male, 3 females) released; status updates available, all birds still living in the wild.
- 2007: Year 2. 3 young birds released (3 females); status updates available on all birds; all birds still living in the wild.
- 2008: Year 3. 4 young birds released (2 males, 2 females); status updates available on all birds; all birds still living in the wild.

Loss: in 2008, the male Evžen released in the same year, when it was one year old. This individual was surplus to the programme, included additionally. Treated for multiple fractures of both wings after falling from the nest in Slovakia in 2007. Probable reason for death: biting by a common viper.

Summary.

Thanks to this project, there were total 11 golden eagles living in the wild as of today, out of which holding an

own territory was recorded and proved in first three birds, which is the key step to future successful reproduction within the wild population, in addition to the fact they the birds have proved to be able to survive in the wild situation. Of course, natural reproduction of the golden eagle in the conditions of the Czech Republic is the ultimate goal of this project. The female Isabela released in 2008 have even established a probably very strong pair bond with a wild male golden eagle, which had arrived from either Poland or Slovakia.

Thanks to the support and grant from the Ministry of Environment, transmitters and a receiver, and even a satellite transmitter could be purchased the last year. This was the satellite transmitter, which allowed for permanent monitoring of one released male (Jakub). In addition, information posters titled Golden Eagle Project – 3 Years could be published; these publications have been distributed to all relevant institutions, information centres, and schools free of any charge.

Golden eagles in the wild

Project outlook.

The zoo's participation in the Returning the Golden Eagle *(Aquila chrysaetos)* to the Mountains of Moravskoslezské Beskydy Project, which thanks to the migration of the birds could be also called more exactly returning the eagle to the Czech Republic, is to continue. Plans exist to provide more young birds with transmitters also this year, and expand and improve satellite tracking of released birds, if only to record any possible first attempts of nest building that may appear namely in the birds released in 2006. In addition, we would like to make use of aerial monitoring to enhance coverage and verifying the reports on the occurrence of golden eagles, which will most probably be the birds released within the project.

Neither a carp nor shark: The first cartilaginous fish at Ostrava Zoo.
By Jiří Novák

In recent years, the Ostrava Zoo's collection structure, which was rather uniform in the history, has been subject to great changes. Finally, a first member of the cartilaginous fishes that was never held before was added into the list of species: the ocellate river stingray *(Potamotrygon motoro)*. To many people, any finned creature will simply mean 'a fish'; however, going into details, we can find sharks and carps so different animals that even Tyrannosaurus rex and pigeon would have to be very close relatives. Why not taking a closer look at the creatures from *Chondrichthyes* class surrounded by myths.

The cartilaginous fishes have been dwelling the Earth a pretty long time. Their physical proportions and adaptability skills have been tested throughout the hundreds of million years, which should make everyone feel respect to these beautiful living things. Torpedo-like elongated sharks and flattened stingrays are the animals that feature the most famous body shapes. This would be nothing special: there are many catfish species resembling the sharks with their body form, such as pangasius or sea catfish. On the other side, lefteye flounders or flatfishes are flattened as well. What is then the big difference? What discriminates a shark from a carp? First, there are no bones: the cartilaginous skeleton of the members of this class, *Chondrichthyes*, is a very unusual in vertebrates; something, which would be appreciated by any fish cuisine lover. They still possess the notochord. The large content of urea in their blood helps to regulate osmotic pressure of the inner liquids with regard to the sea water, which is very heavy. For example, the sea fishes, to replenish the water, which is constantly being lost from their thin bodies by penetrating from a less concentrated to a more concentrated environment – in this case, from the fish body into the sea – simply need drinking all the time, which necessarily results in eliminating the salt. In addition to its main function, the big liver of the cartilaginous fishes, making up to 10% of their organism, helps to uplift the fish body, thus working as a hydrostatical organ, fulfilling a similar role as the gas bladder in most of the fish species, although in a different manner. The teeth are present not only in the mouth of the fish. Placoid scales covering the entire body are of the same nature and origin as the teeth; by the way, this dentine along the fish body is identical with that of the mammals. Unlike true fishes, gills in the cartilaginous fishes have no gill-cover; on the other side, they feature more openings (5-7), which are not mostly uncovered. In addition, the gill cavity in these fishes communicates with outer environment by means of openings behind the eyes called spiracles. Fertilization is practiced internally, just like in mammals, but unlike in most fishes. The males feature a couple of copulation organs called *myxopterigia*. There are plenty of traits and features that the body of the cartilaginous fish can boast; but maybe now it is a time to meet the stingray.

Stingrays show some special traits that differ from what we know as cartilaginous fishes. They have a bald body as they secondarily lost placoid scales. At the end of their tail, there is a spine connected with a venom-secreting gland, which may become a dangerous weapon. The venom is a complex protein containing enzymes and serotonin. Stingrays are viviparous animals, which means that the female will give birth to five fully developed young that had been nourished in mother's body by means of placenta similarly as with mammals – this is something quite unique in fishes. Although stingrays can be mostly found in saltwater, there are several species that inhabit rivers as well. The ocellate stingrays range in South America, where they dwell basins of the major rivers like Paraná, Paraguay, Orinoco, and Amazon. Despite its vast home range, the species tends

to be not very common. Almost nothing is known about their numbers in the wild, thus, they better listed the ocellate stingray in the Red List as Data Deficient.

The two female stingrays were received from Lešná Zoo, where they had been born. Their ring-shaped body now extends to the average of about 15 cm. They still was not on show in 2008, as they were placed in one of the aquariums behind the scenes. They will find their new home in the Amazon Minor exhibit, which is to be opened in spring 2009. This exhibit will include a river-imitating tank with volume of some 4,000 litres, waterfalls and streaming water; the stingrays will be dwelling in this pool in the company of other Amazon animals, namely with fishes. There are even more stingrays expected to come in 2009: import of animals was agreed with Beauval, France. In their aquarium at Ostrava Zoo, they really love hiding in the fine sand. In addition to their most favoured frozen larvae of non-biting midges, they also receive other food, such as seafood. When feeding, the stingray will stop above the sand bottom at the point, where it had found her favourite bit; then it whirls the sand containing the food by a powerful stream of water ejected from its mouth, picking the food from the sand by the mouth. Even though stingray's spine can be dangerous, the animals as such are very peaceful creatures and will not attack first. They would probably use the spine when threatened against someone intending to catch them or even eat them. Surprising is that the spine is quite fragile – when the stingrays were being transported, their spines were breaking or otherwise injured. Fortunately, the spines always grew up without any troubles.

To conclude: let the fish-eaters relish their fried carp. Sharks should be left alone to enjoy their open seas. The same goes for the stingrays dwelling the Amazon Basin – or those swimming in the aquarium in the Amazon Minor at Ostrava Zoo. Once you've finished your Sunday carp, feel free to come and see something different. Although the stingray is not any fish, your eyes may have a feast, too.

Pony riding club at Ostrava Zoo
By Hana Tomková

The pony riding club of Ostrava Zoo has been active since 1985, following the previous enthusiastic work of girl keepers that had been training ponies for children's riding already since 1978. Since 1985, emphasize has been put to rider's training and background of horse breeding. From 1985, the club members have been trained in basic horse riding skills, animal care and horse breeding background under the guidance of Hana Dedková – Tomková. Zoo's herds of the Shetland pony and domestic ass are available for the club activities. The pony as well as ass riding take place bi-weekly all the year round in the natural area of the zoo. We use both forests and meadows, and visitors can meet us very often riding through the public area of the zoo grounds. Beyond this, the ponies can be encountered even outside the zoo at various events. Every year, we attend the celebration of the Earth's Day in Ostrava-Poruba. In addition, our asses also often come to the live ‚Bethlehem' show in Rychvald around Christmas. The club activities are much-sought all the time, with dozens of children that came and went throughout the existence of the club. Past members often come back to meet the animals, many times with their own kids.


Riding team in Ostrava Zoo

Pony and ass keeping at Ostrava Zoo.

Ostrava Zoo has been keeping the Shetland pony since 1972 with 70 foals bred. The longest time was spent at the zoo by the mare Minka purchased from Liberec Zoo in 1972 when she was two years old. The female was euthanized in 2002 for its high age, which means when she was 32. This mare bred 12 foals at the zoo, with the last young born in 1993, i.e. when 23 years old. Until 25 years, the mare was still in service as a riding horse, then she was removed for its high pulse rate. Currently, the oldest ponies include Göro and Samba. Both animals were born in 1988 and both of them are still used for riding as well as breeding purposes.

The domestic ass is kept at Ostrava Zoo since 1959, with 18 ass foals bred so far. The oldest animal, the mare Darisa, was born in 1985, and have bred 8 foals so far.

Big ape keeper meeting
By Jana Kálnová

Big apes are an animal group that features not only a great attraction for the public as well as zoo personnel, but namely animals possessing a high level of intelligence that are often kept in captivity under unsatisfactory conditions. In addition, working with them requires a highly individual approach. In this very animal group, emphasize is always put on increasing the quality of their life in zoos and supporting conservation projects aimed at their wild relatives. However, any enrichment activities are impossible without a specific approach of particular members of ape husbandry personnel. Thus, when working with these animals, direct personal communication between keepers from different zoos is of the greatest value. This was the reason why Ostrava Zoo proposed the initiative consisting in informal meetings of big ape keepers, where people can make friends and share their personal experiences with ultimate aim of to increase the quality of living conditions for apes held in the Czech and Slovak Republic.

Until 2008, 3 such meetings were already held in Prague, Ústí nad Labem, and Ostrava. Even guests from Poland, Germany, and Dutch zoos attended these meetings, holding their reports that were simultaneously interpreted to Czech. In addition, the agenda always includes informing the keepers on the existing status of apes in the wild (*in situ* projects). Every year, a key theme of the agenda is specified. In the preceding years, programmes included feeding rations, enrichment, ape taxonomy, and functioning of the European conservation breeding programmes (EEP and ESB) of these species.

In 2008, the meeting was held from 11 to 12 November at Lešná Zoo. The 2008 agenda's key subject involved transports and subsequent integrating the new animals into the groups. Total 25 representatives from 10 UCSZ member zoos and other institutions attended the meeting. 11 papers were presented as follows:

- Exchanging male chimpanzees at Ostrava Zoo. (Dagmar Marková)
- Moving the orang-utan male Amos from Ústí nad Labem to Apenheul. (Patrik Matějů)
- Integrating the female gorilla Kamba into the group at Prague. (Marek Žďánský)
- Transporting gorillas to Lešná Zoo in 1997. (Marcela Čechová)
- Arrival of an orang-utan male from Nyiregyhaza to Bojnice. (Zuzana Mihálovová)
- Chimp Summer at Ostrava Zoo: How to raise funds for a video surveillance system for our chimpanzees. (Dagmar Marková and Jana Kálnová)
- Chimpanzees at Hodonín Zoo. (Petra Bílková and Michala Nejezchlebová)
- Integrating hand-raised chimpanzees into the group at Liberec Zoo. (Jiřina Kyzlíková)
- New web site www. lidoopi.cz (Ilona Profousová)
- Planned reconstruction of the Chimpanzee House at Brno Zoo. (Marcela Sládková)
- Sepilok 2008 – Orang-utan recovery centre, Malaysia. (Jana Kálnová)

Reports held by representatives of each zoo will be available at www.lidoopi.cz and published in proceedings (under development). As the meetings have met a favourable response as well as for the practical benefit they have for one of the rarest taxons in Czech and Slovak zoos, it is hoped they will continue in the years to come as well. The next meeting is to take place at Hodonín Zoo.

The world of taxonomy faces interesting changes
By Jiří Novák

The world around keeps on changing, as do the specialist opinions about the systematics and taxonomy of animals. Some may even say the opinions are always specified or added, subject to change, and the like. However, the objective of this paper was not raising any polemics or controversy, using arguments of other specialists, or even explaining why the animal X is no more an animal X but rather an animal Y. Likewise, my aim was not to present any reference to scientific papers that formed the basis for changing the names. The only objective is to present changes in names of animal taxons with emphasis put on the species held at Ostrava Zoo.

The series of updates in the area of felid names, which is the well-established animal taxon at Ostrava Zoo, seems to be the most interesting matter. The lineage of ocelots, i.e. representatives of the small South American felids, used to comprise multiple genus names, such as *Leopardus, Oncifelis, Oreailurus*, and many others. This resulted in different common Czech names of these species. This lineage comprises small spotted cats that often resemble each other. However, the taxonomy also includes 'hybrids' between two genuses, i.e. forms ranging along the borders of the home range of specific species. Now, all of these felids have been included under the *Leopardus* genus and all remaining genus names are synonyms. Thus, the proper scientific name of the Geoffroy's cat held at Ostrava Zoo will be *Leopardus geoffroyi*. Well, nobody seems to change the already established Czech name, even though it should reflect the above change in the scientific name.
Just next to the Geoffroy's enclosure, there is a trio of jaguarundis. According to the name, this species may appear to have something common with jaguar, which does not go for Czech language only. The former scientific name is *Herpailurus yagouaroundi* – everyone will agree it is right and well-established. Looking at the jaguarundi, nobody would expect any close relationship with jaguar, this big felid species placed in the *Pantherinae* subfamily. Likewise, surely no one will suppose that jaguarundis are close relatives of cougars, called 'puma' in Czech. Well, the opposite is truth: the exact name reads *Puma yagouaroundi*.
Then there is a real representative of the big cats: the irbis. It used to be ranked under a special genus, *Uncia*, however, the genetic analysis performed in 2006 (Johnson et al.) revealed that this status was unsustainable; that is why the irbis has now been ranked under the same genus like for instance the tiger. The proper name reads *Panthera uncia*.
A number of animal species have been re-classified making a separate species from a subspecies. Just at the entrance to Ostrava Zoo, there is the South American aquatic bird enclosure, dominated by a flock of the Caribbean flamingo. This bird used to be known as a nominal subspecies of *Phoenicopterus ruber*, i.e. *Phoenicopterus ruber ruber*. Its Old World relative was *Phoenicopterus ruber roseus*. At first sight we can agree that the birds have different colours; in addition, they reside different continents and their populations cannot meet. Therefore, *Phoenicopterus ruber* now goes only for the dark red flamingo that can be seen in Ostrava Zoo as well, while the Old World flamingo is called *Phoenicopterus roseus*.
Similarly, there are other‚new' species that can be met in Ostrava and other zoos, or also in special literature like the red-ruffed lemur *(Varecia rubra)* and black-and-white ruffed lemur *(Varecia variegata)*, the clouded leopard *(Neofelis nebulosa)* and the Bornean clouded leopard *(Neofelis diardi)* or even two gorilla species.

It should be mentioned that research is still underway. We can be sure to wait and see many surprising facts

in future. Any of those new names may be disputed or changed. But this game with the names is still of great importance: it provides a more clearer idea of animal origin and relationships, and this virtual naming tug-of-war can be another good opportunity of contemplating the mysteries of wildlife for some of us that like order.

More information on www.iucnredlist.org.

The list of journals available at the Educational centre at the Ostrava Zoo

Jindřicha Zemanová

Name of the journal	since	to	Volumes
Akva fórum	2007		
Akvárium živě	2003	2005	
Akvárium-terárium	1992		
Biologizace a chemizace	1984	1990	
Cites ČS výroční zpráva			1996, 1998-2000
Der Zoologische Garten	1971		
EAZA NEWS	1998		16-27, 30, 32-34, 36-55, special
Ekologia	1983	1988	
Exota	1992	1996	supplements: 4-7,10,12
Fauna	1997		
Fauna Bohemiae Septentrionalis	1992	2003	17, 18, 19, 2x20, 21, 25, 28
Floraprint (catalogues)	1998		
Folia zoologica	1977	1994	
Gazella	1975		1,2,13,14,17,18,20,21,22,23,24,26-33
International Tiger Studbook	1976	1994	
International ZOO Yearbook	1959		missing: 23,26-29
Journal of Mammalogy	1960	1972	
Lidé a Země	1989	2000	
Lynx	1964		3,6,7,12,14,15,16,18,24,25,28,29,30,31
Milu	1998		9/5-6,10/3-4,11/2,4-6
Myslivost	1991	2002	
National Geographic	2002		
Nové Knihy SSSR 1990			archive :17-19,22-25,27,29,33-46
Ochrana Přírody	2000		1964-1999-archive
Oryx	1979	1991	
Památka a příroda	1976	1989	

Papoušci	2001		
Pomocné ornitologické tabulky	1980		
Primate report	1990	2001	
Referativnij žurnal	1983	2004	
Ročenka UCSZ	1987		missing: 2000, 2002, 2004, 2005,
Saugetierkundliche Mitteilungen	1979	1983	27/1-4, 28/1-3, 27 suppl., 31/1-3
Unie ČS ZOO-informace			1/92, 3/95
Zahradníctvo	1987	1991	
Zeitschrift des Kőlner ZOO			5-45
ZOO Anvers Plackendael	1994	1998	
Zoologické listy	1965	1976	
Zoologischer Anzeiger	1980	1990	
Živa	1958		
Eko	2008		
Naše příroda	2008		

The list of employees of the Ostrava Zoo (as of December 31, 2008)

	Name	Function	Number of years in the organisation
1	Adámek Vladimír	Worker at Public Relations Department	17
2	Bartáková Šárka, Mgr.	Head of Public Relations Department	4
3	Beníček Rostislav	Driver	22
4	Benko Vladimír	Gardener	2
5	Berger Zdeněk, Mgr.	Worker at Public Relations Department	4
6	Černohorská Jana	Zookeeper	21
7	Čolas Petr, Ing.	Director	19
8	Derlich Stanislav, JUDr.	Vice Director, Spokesman	7
9	Drapáková Jiřina	Gardener	18
10	Dubská Dagmar, DiS.	Accountant	7 months
11	Fiala Jaromír	Zookeeper	5
12	Filipová Ivana	Zookeeper	24
13	Firla Ivo, Ing.	Head of Zoological Department II	16
14	Firlová Sylva	Zookeeper	31
15	Gorčáková Pavla	Zookeeper	31
16	Guryča Pavel	Gardener	1
17	Hájková Liběna	Zookeeper	10
18	Halfarová Renáta	Zookeeper	15
19	Hanzelka Tomáš, Ing.	Head of Dendrological Department	16
20	Hruška Ondřej	Zookeeper	8
21	Hruška Roman	Gardener	13
22	Hruška Rudolf	Zookeeper	16
23	Janečka Radomír	Driver	8
24	Jankovičová Zuzana	Zookeeper	10
25	Janošťáková Věra	Zookeeper	30
26	Juříková Lenka, Bc.	Zookeeper	1

27	Justová Liana	Zookeeper	15
28	Kálnová Jana, Mgr.	Assistant of Curators, Registrar	4
29	Kalužová Petra	Zookeeper	7
30	Kanichová Jana	Zookeeper	16
31	Konečná Pavlína, Ing.	Head of Economy Department	3
32	Kopia Robert	Zookeeper	8
33	Kopřiva Richard	Warehouse Keeper	6
34	Košťál Emil	Locksmith	9
35	Kötelešová Andrea	Zookeeper	1 month
36	Kovářová Jana, Bc.	Worker at Public Relations Department	7 months
37	Kratochvílová Milada	Gardener	2
38	Kubala David	Gardener	8
39	Legierský Jiří	Gardener	10
40	Leštinská Anna	Zookeeper	8 months
41	Lindovská Lenka	Animal Feeding and Nutrition	18
42	Lindovský Josef	Worker at Technical Department	8
43	Marková Dagmar	Zookeeper	28
44	Maršálková Pavlína	Worker at Zoo-kitchen	8
45	Mikesková Irena	Gatekeeper	12
46	Mikulský Rudolf, Ing.	Head of Technical Department	29
47	Mílek Bohuslav	Bricklayer	16
48	Moravcová Martina	Gardener	15
49	Moldrzyková Andrea	Payroll Clerk	2 months
50	Novák Jiří, Mgr.	Head of Zoological Department I	11
51	Ondrušová Monika, Bc.	Assistant of Director	4
52	Orlík Ladislav	Painter/Decorator	18
53	Orságová Alena	Zookeeper	31
54	Pastyrniak Roman	Zookeeper	5
55	Pecháček Jiří	Electrician	5
56	Pluháček Jan, RNDr., Ph.D.	Researcher	2
57	Poluda Roman	Locksmith	10

58	Serbusová Lenka	Zookeeper	15
59	Skupník Rostislav	Safety and Fire Technician	7
60	Skýbová Karin	Zookeeper	16
61	Střižík Rostislav	Zookeeper	16
62	Svobodová Yveta	Zookeeper	27
63	Šafrán Michal	Zookeeper	9
64	Šarišková Nataša	Worker at Zoo-kitchen	10 months
65	Ševčíková Pavlína	Zookeeper	18
66	Šrubař Miroslav	Worker at Zoo-kitchen	3 months
67	Švacho Zdeněk	Gardener	10 months
68	Švihálek Igor	Zookeeper	10
69	Tančiboková Karin	Zookeeper	4
70	Tomčal Zdeněk	Gardener	16
71	Tomek Jaroslav	Locksmith	20
72	Tomková Hana	Zookeeper	26
73	Ulivelliová Věra	Personnel Manager	4
74	Ullmannová Anna	Gatekeeper	12
75	Velčovská Adéla	Zookeeper	5 months
76	Vlček Pavel	Gardener	5
77	Vrhelová Jiřina	Zookeeper	19
78	Výkruta Luboš	Worker	14
79	Zajíc Karel	Gardener	9 months
80	Zajoncová Eva	Zookeeper	9
81	Zemanová Jindřicha	Worker at the Public Relations Department	36
82	Zlámal Ivo	Zookeeper	10
83	Zvolánek Daniel	Zookeeper	10
84	Zvolánek Pavel	Zookeeper	12
85	Žižka Marcel	Power Engineer	18

Nejvzácnější přírůstky roku 2008 – ▲ mláďata levharta cejlonského *(Panthera pardus kotyia)* a ▼ mládě lemura korunkatého *(Eulemur coronatus)*.
The most precious offspring in year 2008 – ▲ young Sri Lankan leopards *(Panthera pardus kotyia)* and ▼ young Crowned lemur *(Eulemur coronatus)*.

▲ Panda červená *(Ailurus fulgens fulgens)* v nové expozici
Red panda *(Ailurus fulgens fulgens)* in new enclosure

Vypouštění pandy do nového výběhu - zleva zástupce společnosti ArcelorMittal Jan Rafaj, náměstek primátora Vojtěch Mynář a ředitel Zoo Ostrava Petr Čolas / Releasing of Red panda into new enclosure - from left representative of ArcelorMittal Jan Rafaj, chief magistrate deputy Vojtěch Mynář and director of Ostrava Zoo Petr Čolas ▼

▲ Nová expozice pro pandy červené / New exposition for Red panda

▲ Nový druh v ostravské zoo - krysa velká *(Cricetomys emini)*
New species in Ostrava Zoo - Giant pouched rat *(Cricetomys emini)*

▲ Komba Garnettova *(Otolemur garnettii)* obývá spolu s krysou velkou první noční expozici v historii Zoo Ostrava
Greater galago *(Otolemur garnettii)* together with Giant pouched rat inhabits the first nocturnal exposition in Ostrava Zoo history

▲ Starý skleník před demolicí / Old green-house before demolition

▼ Výstavba nového skleníku / Building of new green-house

▲ Nová expozice pro jeřáby běloší *(Grus vipio)* / New exposition for White-naped cranes *(Grus vipio)*

▲ Prostor před pavilonem šelem před úpravou...
The area in front of Big cat house before...

... a po úpravě na bezbariérový ▲
... and after adjustments for disabled people.

Zástupci Nadace ČEZ u upraveného výběhu koček slanišťních
The representatives of ČEZ foundation by the amended Geoffroy ´s cat enclosure ▼

▲ Edukativní koutek v areálu zoo / Educational place in the zoo area

Výstupy projektu podpořené MŽP: omalovánky pro děti
The results of the project supported by Ministry of Environment: colouring books for children ▶

▼ Živý Betlém a strojení stromečků v zoo / Live bethlehem and Christmas tree dressing in the zoo

▲ Hloubení tůněk pro obojživelníky v rámci kampaně EAZA na záchranu obojživelníků / Digging of amphibian ponds in terms of EAZA Amphibian Campaign

Den zvířat v zoo / Animals´ Day in the zoo ▶

▼ Letní univerzita juniorů v Zoo Ostrava / Summer junior university in Ostrava Zoo

▲ Samec šimpanze Sebastián několik dní po příjezdu ze Zoo Krakov / Chimpanzee male Sebastián several days after his arrival from Krakow Zoo

Vítězné tričko v rámci akce Šimpanzí léto / Winning t-shirt in competion called Chimpanzee summer ▼

▼ Oslava narozenin šimpanzů / Chimpanzee birthday party

Vypouštění mláďat kočky divoké do volné přírody
Releasing of young Wild cat into wild

▲ Pravidelní cvičení a ošetřování nohou slonice Johti / Regular training and foot care in Johti

▼ Slonice Johti v Zoo Belfast se svými ošetřovateli a pracovníky Zoo Ostrava
Elephant cow Johti from Belfast Zoo with her keepers and employees of Ostrava Zoo

▲ Ukousnutý chobot slonice Vishesh… / Bitten-off trunk of elephant cow Vishesh…

…zahojený chobot / …healed trunk ▶

▼ Vishesh si pomáhá ke snadnějšímu nahrnutí potravy přední nohou / Vishesh is helping herself with her front foot while feeding

▲ Šíření informací o unikátním projektu návratu orla skalního do České republiky napomáhá i zdařilý informační plakát
The spreading of information on unique project of Golden eagle reintroduction in Czech republic is supported by information poster.

▼ Trnucha skvrnitá *(Potamotrygon motoro)*
Orangespot freshwater stingray *(Potamotrygon motoro)*