ZOO
Ústí nad Labem

Annual report 2011

Contents

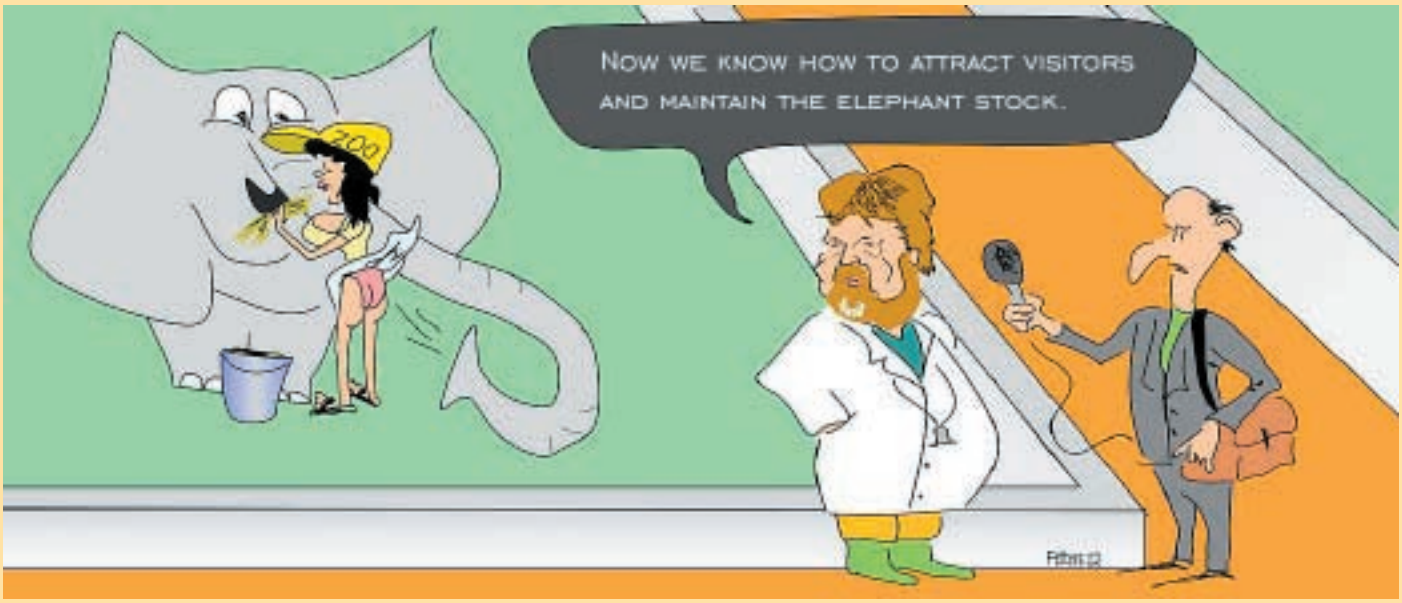
From the director‘s desk

Zoos of the 21st century should be something more than a menagerie, a circus or a road-side animal park containing creatures you can have a photograph with, you can cuddle, or otherwise shape in your own likeness, or even worse, for your own profit or benefit, the boundary of that being always hard to set. To this end, it depends on the degree of taste, morals and beliefs, often on funding possibilities, with none of the designs of one’s choice being the best. Having ranged in this kind of world for several years, hoping that one day I would find questions to the most of my answers, I still find myself surprised by responses, opinions and positions, whether it is a visitor, a member of professional or would-be professional public, a founder, an owner or an officer making decisions on how the zoo operations should look like. The zoo is something produced by everyone of us and should be a symbol of our feeling and our pride, an example of how we can take care of not only animals we hold but also suitable habitats we maintain and survival of all animal species kept in captivity. It is an example of strength or weakness, wisdom of the common sense or demonstration of half-witted ideas, natural development or extinction of humans as a species.

Zoos of these days are not about displaying as large collection of animals as possible, these often kept in substandard conditions, or about having photographs with animals, neither they are about displaying creatures on a leash as in circuses. It is about creating as most natural environments as possible in addition to settings resulting in the potential independence of the individual; about survival of the species not only in zoos, but also in the wild; and about an active effort to be a scientific and educational institution as well as an active member of global conservation as a whole. Our zoos are small pieces of another world on this big planet, something which makes up our own universe. We cannot compete with shopping centres and their attractions of the modern days - the cult of shopping, often associated with interactive media presentations and demonstrations of 3D or even more advanced technologies, or induced reality of exotic locations and adventure expeditions into outer space, under water or into the heart of man. In zoos, our intention is to show the reality of life, not only the reality of birth that we boast, but also that of illness, death and extinction, which we rather do not discuss openly or not at all.

Zoos in the world today are becoming habitats that combine under the joint idea of protecting biodiversity as a whole, not just individuals in zoological parks. Often, this effort is hindered by multitude of senseless regulations and directives, these often lacking common sense, and such fighting with windmills is often very slaughtering. The financial crisis is a common magic formula, which in my opinion is merely a consequence of moral crisis and the consumer lifestyles of this society. The concept of democracy is confused with a lack of responsibility and collective guilty, when criticising the causer in the “unknown location” far away or anonymously on the social network is easier than worrying about the ills of the neighbourhood. Populism and the loss of respect, moral pride and Czechness lead us to a complete loss of identity. Oppression, both financial and moral, is forcing us to fighting to survive, with any effort to perform better being seen as negative. I believe that there are enough people thinking reasonably, personalities and patriots who have the power to rule and who can eventually make a good decision, be it for the benefit of our zoo, or the entire human population. I wish that both moral and economic stability comes to stay in the near future so that we can properly devote to the zoo’s mission in order to not just keep that bit of life torn from its original environment, but also to compensate for the damage we had caused to the same. That we humans can find a place on Earth that is suitable and dignified for living and for life, as opposed to some endangered animal species.

MVDr Václav Poživil



Animal management

Animal management

Ing Petra Padalíková

A new house for Hartmann`s zebras was the major development for 2011. Fundamental to the animal management, it replaced the old stable built in the 1970s. The change was driven by the considerable degree of wear and tear and the massive leakage through the roof, along with the fact that the dimensions of the boxes did not meet the standards for keeping this species. The new building was developed not very far from the former facility and its layout allows up to 14 zebras to be housed separately from each other. A part of the zebra house is much more flexible, enabling to contain even other species of hoofed mammals, such as antelopes, which may enliven the zebra paddock in future. The works commenced as early as 2010, with the new house officially opened and put into use on 28 October 2011 ***(photo 1)***, along with the outdoor pens adjoining the house and the main section of the visitor zone.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The male American alligator obtained its new desirable wintering facility as well. Since the existing reptile's are was unsatisfactory due to space issues, we decided to use funds raised as part of the Alies to Allies project to produce a new facility with an area of 30 m^2, two thirds of it comprising a heated pool, a depth of 1.1 m, the remainder being a dry area. This created a potential of getting a female and trying to breed this interesting species.

Compared with 2010, there was a slight decrease in total numbers of the taxa held, with the fish stock reduced in particular. On 31 December 2011, the zoo managed a total of 207 animal species, whilst the number of individuals declined, with a total of 952 animals on stock at the end of the year, the reduction affecting numbers of fish as well as birds. The zoo's international cooperation involved participating in 32 European Endangered Species Breeding Programmes (EEP), with another 15 species registered as part of European Studbooks (ESB).


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As regards breeding, a total of 57 species reproduced in 2011, the most important breeding success experienced at the carnivore house, which could see another **Malayan sun bear** *(Helarctos malayanus)* being born after a 14-year break. The parents, female Barma and male Myanmar, a young adult pair originating from a Burmese zoo, are animals of extraordinary genetic value because they are unrelated to the remainder of the population in Europe. Although for Barma it was her first birth, she was looking after the cub very carefully from the beginning, the outcome of this being a female reared and named Babu on a naming party.

Two births were also seen in **clouded leopards** *(Neofelis nebulosa)*, the first of them taking place in early June with three animals born. Unfortunately, the apparent inexperience of the young

pair resulted in this case in failure to rear. The second time the birth took place at the end of September, Lenya giving birth to three cubs, displaying a keen interest in them. Due to the male affecting the process in a negative manner, however, the animals had to be split on a permanent basis despite husbandry recommendations, this eventually resulting in two males and one female bred with success.

Snow leopards *(Uncia uncia)* were also a successful species, with female Nima giving birth to her second offspring in the row. This time it was a male; named Panja, it was reared without any problem. Another case of rearing success arrived in the **Amur leopard** *(Panthera pardus orientalis)*. After weaning her previous kittens, team's efforts to put female Kiara and male Rusher together were failing over a long period, with the female steadily refusing the male. Successful mating only arrived in late May and yielded two females in September that Kiara managed to breed up, this making her an experienced mother with a total of three snow leopards produced so far. Incidentally, this year's females ***(photo 2)*** are something from which the European stock is to benefit to more than a great extent because its gender ratio is strongly biased in favour of males, so the demand for females to complete pairs is very high. To conclude, this breeding success helped the carnivore house collection reach historic highs in the number of offspring within a single year.

Updates also occurred in the group of **Katanga lions** *(Panthera leo bleyenberghi)*, the young female Aisha leaving for the zoo in Athens, Greece. As the lioness was only an on-display animal due to being offspring of the local pair, moving to Athens where it became part of a newly formed breeding group gave this carnivore a chance to reproduce.

A positive development took place in relation to the **cheetah** *(Acinonyx j. jubatus)* after the zoo became winners in the competition "Ústí enhanced by one degree" launched by Heineken, submitting their proposal of building a background quarter for a cheetah male. Even though a cheetah exhibit had been available since 2006, getting breeding animals without having a separate facility to keep the male outside of oestrus would be impossible, since avoiding any visual, olfactory and acoustic contact is essential for the animals to reproduce with success on a periodical basis. Planned to be developed in the grass area near the upper zoo entrance, the new facility will consist of a simple out-of-scene building containing three boxes and two outdoor enclosures, of which one will be covered with a netting in the future, thus can be used as a provisional enclosure even for different animal species. The complex is supposed to be finished in March 2012 and put into operation on launching the summer season. In connection with this good news, a young male named Hobit was imported from Olomouc in November and a breeding female identified as part of subsequent communication with the EEP coordinator, this to arrive from Ebeltoft, Denmark, to provide for creating a prospective cheetah pair over the upcoming year.

No major changes occurred in the small feline stock. The **fishing cat** *(Prionailurus viverrinus)* breeding pair continues to be held separately from each other without the possibility to reproduce. Due to the state of disrepair of their facility, the animals must be held in temporary conditions. Failure has also been accompanying the attempts to locate the cubs born in 2010, with just the young male sent to a private collection, whilst the two females still wait for any party interested.

Updates are reported from the Old World primate house and concern several species, amongst them being the **Diana monkey** *(Cercopithecus d. diana)*. After enjoying a considerable longevity of 28/29 years, the old Diana monkey pair died. Unfortunately, without the much-needed action of rebuilding the worn house the zoo will be not able to recover breeding this attractive and highly endangered species any longer. **Brazza monkeys** *(Cercopithecus neglectus)* produced another offspring, whilst a decision was adopted to send away their first offspring, male Rico, who had become a disrupting element for the group. This four-year old animal thus left for Lisbon. Positive developments also occurred in the group of **Mt. Kilimanjaro guerezas** *(Colobus guereza)*. Shortly after integrating a twelve-year old male Kasal that arrived from Bojnice ***(photo 3)*** into the group of three females, the male born in Krefeld and fathering several offspring in Bojnice was observed to mate. As regards the **mandrill** *(Mandrillus sphinx)*, the team was forced to euthanise one of the breeding females due to a complicated fracture of the pelvic limb, with the

remainder of three females producing three young animals (1.2). This is another species for which a new facility is more than desired due to space issues as a result of the ongoing growth of the group, lacking funds being however the case of failure to do so. A breeding male imported a year ago from Dvůr Králové was sadly lost in the **Javan langur** group *(Trachypithecus a. auratus)*. Although it had settled and was getting along with the group very well, digestive problems were noticed shortly after arrival. Despite every effort and long-term treatment, the male eventually died. Shortly after the death, one of the females gave birth but rearing failed as a result of lacking experience.

A special Season gift was arranged by **Bornean orangutans** *(Pongo pygmaeus)*, with the female delivering her fourth baby just a week before Christmas Eve. In the very first moments after this taking place it was evident that the offspring was a healthy female. This birth was "well-timed" by the female for the early morning, giving the chance to the keeper watching the process of delivery shortly after his arrival to work, who managed to record the event by a camcorder. The female was separated from the group along with the young one in the early days, which mainly the breeding male suffered with great disfavour. Any desire to join the rest of the group was showed by the female only after six days so the group reunited and the animals have been staying together since that time.

The Exotarium exhibit could see offspring from all the three females of the **ring-tailed lemur** *(Lemur catta)*, this including the one that the previous year underwent caesarean section, which was heart warming for everyone. The breeding pair of the **black and white ruffed lemur** *(Varecia variegata)* did not reproduce for the first time ever, the grounds being presumably their old age. The most recent young animal was sent to a private zoo, whilst the older offspring are is now kept as a bachelor male group along with a **red ruffed lemur** *(Varecia rubra)* after the breeding pair of the latter species was split earlier in the previous year for their offspring showing an increased percentage of occurrence of metabolic disorders. A breeding male with his most recent son was still kept out of scenes, but these animals were successfully located in 2011, with the old male leaving to Jihlava to join the local old female and the young one shipped to Bratislava.

With two successful litters during a single year, the group of **golden lion tamarins** *(Leontopithecus rosalia)* has grown to five individuals. A groundbreaking number of three litters occurred in **pygmy marmosets** *(Callithrix pygmaea niveiventris)*. Since the breeding male died and the most recent offspring was born only after the male's death, their older siblings were assisting the female in her rearing efforts. Once the young animals have reached their weaning age, the group will have to be dissolved and a new pair formed. For this reason, an unrelated male was brought from Bojnice, this now awaiting the opportunity behind the scenes. A single **cotton-top tamarin** *(Saguinus oedipus)* was born and two litters were also seen in **white-lipped tamarins** *(Saguinus labiatus)*, the first case involving the premiere, with the young one sadly dying of head trauma in week 3, whilst the second litter (twins) was reared with success ***(photo 4)***. As regards the bachelor group of three male **golden-handed tamarins** *(Saguinus midas)*, one male was extended to a private collection.

A new species became the **white-faced saki** *(Pithecia pithecia)*, this intended to enliven the sloth exhibit. Two males were received from Jihlava, who settled very well and quickly, but had to be moved to a separate enclosure due to the younger of the males disturbing the sloth neighbours, in which on the other hand an unmatched achievement was recorded, with both of the breeding females of the **two-toed sloth** *(Choloepus didactylus)* giving birth. In the case of the female called Sid, it was the first occasion, which was not possible without keeper's intervention. The sloth's lack of experience was evident from the first moments, necessitating assistance with cleansing as well as cutting the umbilical cord by the female keeper. Sadly, the young one from the first-comer female died from unknown causes, with the team subsequently eyewitnessing an interesting behaviour of the two females lending the remaining young sloth to each other.

In the course of the year, **banded mongoose** stock *(Mungos mungo)* had to be discontinued, with the necessity of euthanising the two last remaining overaged animals for health reasons. A necropsy later revealed advanced cancer proliferation. Due to space issues the **fossa** stock *(Cryptoprocta ferox)* had to be stopped as well, the last remaining male sent to Pilsen.

Reproducing animals included **Asian small-clawed otters** *(Amblonyx cinerea)*, this for the first time happening in their outdoor enclosure during the main season. With youngsters of the previous year still kept here with their parents, the rearing process was taking place within the entire family. Two females produced headed to a new zoo in Cyprus, whilst the remainder was sold to a private breeder.


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Birth took place twice in the **Patagonian cavy** *(Dolichotis patagonum)*, this resulting in four young reared. As the animals are however placed in a temporary enclosure at the old elephant house, there is a plan to modify the South American enclosure and hold the species along with greater rheas and guanacos in a mixed-species exhibit.

As regards hoofed mammals, several updates touched the **Somali ass** stock *(Equus africanus somalicus)*. A yearling female was sent to Liberec and a four-year female travelled into Avintes, Portugal, whilst our breeding group was expanded by adding a young female Jilib who had arrived from Beauval, France, meaning that three prospective females are kept here at present along with Axa, a female that has reached the end of its reproductive age. In addition, Maya gave birth to her second foal, a male named Mudug ***(photo 5)***.

In **Hartmann's zebras** *(Equus zebra hartmannae)*, a sad event was recorded through a death of a young male Damir. Born in Ústí, the animal died from trauma. Attempts to involve our stud in breeding in a satisfactory manner have continued to fail, this partly due to the noise generated by construction work in building the new stables, when handling individual animals on the pens was impossible. The main problem is however the fact that Eddie does not show any interest in the females.

As for the **Bactrian camel** *(Camelus bactrianus)*, all the three animals produced the previous year were successfully sent away. On the other hand, however, we had to euthanise our breeding male Chorchoj (Matěj) in the summer after the prolonged treatment failed. This is particularly sad in that the male was possessing excellent character traits, never showing even a hint of aggression towards the keeper. This sire, who has produced an impressive total of 11 young, with additionally three females being now probably pregnant, suffered a degenerative kidney disease as revealed by necropsy. The camel herd increased in numbers by a male born to one of the females. Birth occurred in **llamas** *(Lama glama)* as well, with another young produced in **alpacas** *(Vicugna pacos)*, this counting four animals.

Breeding in the deer species flourished in the **Vietnamese sika deer** *(Cervus nippon pseudaxis)*, with three fawns successfully reared, as well as in the **Reeves's muntjac** *(Muntiacus r. reevesi)*, since both of the does gave birth ***(photo 6)***, whilst the opposite was true with the rare **white-lipped deer** *(Cervus albirostris)*. Four females gave birth in this species, but none of the fawns was reared successfully. In the first two cases, the young did not survive because of abnormal birth weight, whilst the next case involved the newborn fawn of a young female being attacked by multiple females from the herd, the attack randomly recorded by a visitor camera. Any such phenomenon was never encountered in the past and the cause could not be explained. The fourth birth occurred in a young female, who however failed to care. In addition, another young female died of chronic diarrhoea. A two-year male left for Bojnice at the end of the year, where they formed a spare herd of this uncommon deer species. A renewal was also carried out in the autumn within the herd as regards breeding males, the old male named Timur being replaced by a young male Kailás, whom we brought the year before from Tierpark Berlin.

Species doing well within the antelope stock included the **Kafue lechwe** *(Kobus leche kafuensis)*, where two calves were produced. Four calves (1.3) of the same species born the previous year and the year before were relocated to Zoo - Farma, a private zoo in Poland. The group of **defassa waterbucks** *(Kobus ellipsiprymnus defassa)* reduced due to the older of the females lost. Three calves were bred in the **blackbuck** *(Antilope cervicapra)*


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and four young successfully produced within the new breeding group of **nilgais** *(Boselaphus tragocamelus)*.

Earlier in the year, the staff were eagerly anticipating the results of insemination in Delhi, the female **Asian elephant** *(Elephas maximus)*, which was however eliminated through the ultrasonography examination in January. Another AI attempt was scheduled to take place in the autumn, which was not successful upon failure to detect the pre-ovulation LH surge. We can only hope for more success over the next year.

In April, the visitor season was launched by opening two outdoor enclosures with new bird species at a time, the first of them designed for the **southern ground hornbill** *(Bucorvus leadbeateri)* and developed from the previous babirusa exhibit. The other exhibit was produced by redesigning the facility that formerly was used for flamingos, these replaced by other aquatic birds since the flamingo breeding record was not very successful. Targeting rather lesser anseriformes species, we acquired a trio of **white-faced whistling ducks** *(Dendrocygna viduata)* and **Mandarin ducks** *(Aix galericulata)* - ***photo 7*** from Ostrava Zoo in 2010, adding two pairs of the **ferruginous duck** *(Aythya nyroca)* into this exhibit in 2011. By the way, this species is the smallest form of this type and occurs even in the Czech Republic. Sadly, the numbers have declined to such extent that it is now a critically endangered species. Another new species became the **silver teal** *(Anas versicolor)* that arrived from Dvůr Králové nad Labem, whilst the multi-species community of aquatic birds was enlarged with **smews** *(Mergus albellus)* coming from Ostrava in the second half of the year.

The 2011 nesting season was successful as regards the parrot breeding centre in that two and three chicks were bred by the **military macaw** *(Ara militaris)* and the blue and **yellow macaw** *(Ara ararauna)*, respectively, whilst repeated breeding success was experienced in the **mealy amazon** *(Amazona farinosa)*, the **Jardin parrot** *(Poicephalus gulielmi)* and the **African grey parrot** *(Psittacus erithacus)*. The parrot breeding centre strategy was also revised. As the team tends to prefer rather rare species of large parrots, the stocks of the **orange-winged parrot** *(Amazona amazonica)*, the **red-lored parrot** *(Amazona autumnalis)* as well as the **Jardin parrot** *(Poicephalus gulielmi)* were phased out. In addition, each of the not-so-rare macaw species like the blue and yellow macaw or the red and green macaw were reduced to comprise a single breeding pair, whilst in the case of military macaws, efforts will focus on the mexicana subspecies. Later in 2011, the zoo also became involved in the breeding scheme for the **red-fronted macaw** *(Ara rubrogenys* - ***photo 8***. Ranging over a small montane area in Bolivia considerably degraded by a human influence, the species is red-listed as Endangered. A recommendation was issued within the EEP for Ústí to receive a young pair, the female coming from Dvůr Králové, while the male has been reserved in Budapest, its transport being planned for early 2012.

Rearing took place in the **yellow-bibbed lory** *(Lorius chlorocercus)*, with a chick hatched at the elephant house, but sadly died of the parasitic infection later in the year. Loss was recorded as regards the breeding pair as well - since the breeding male died, the aviary had to be stocked with a spare breeding pair. A sad record of the stock being terminated was also entered at the elephant house as regards the **emerald dove** *(Chalcophaps i. indica)*, the new pair set up recently dying in the spring as a result of predation upon the house being invaded by brown rats.

A record-breaking success was achieved in the **wrinkled hornbill** *(Aceros corrugatus)*, with three chicks reared from a single clutch for the first time in the breeding history. Especially rewarding is the fact that two of the chicks turned out to be females once they attained adult plumage. With males currently prevailing within the European stock, new females have become more than desirable. One of the females produced is to form the basis for the new zoo's spare pair. A member of the male group also died in the course of the year, but based on the post-mortem report it turned out to be a female that had not yet moult to achieve a typical female colour. The 2010's young male was moved to Alphen, the Netherlands. Cases of offspring being successfully produced included that of the **violet turaco** *(Musophaga violacea)*.

Attempt was also made as regards much-needed natural breeding in the **greater rhea** *(Rhea americana)* since all offspring produced so far was hatched artificially. In 2011, we left

a portion of eggs on the nest to allow for the process of incubation taking place right under the male, this producing three hatched chicks, two of them retained with the male ***(photo 9)*** and a mesh fence erected around the nest to avoid the young falling prey for foxes. The male was taking an unexampled care of the chicks, keeping them warm or creating a shade with its wings during the hot summer days.

Owl nesting season was successful in the **snowy owl** *(Nyctea scandiaca)*, these breeding and rearing three chicks. Later in the year, however, the breeding female died and the male was returned to its owner, meaning that the zoo is going to rely on the spare pair. After a long break, a chick was also produced by the **Ural owls** *(Strix uralensis liturata)*.

After several years, the stock of **crested partridge** *(Rollulus rouloul)* was restored, with breeding individuals obtained from Dvůr Králové and Děčín, a pair placed into the Prevost's squirrel exhibit, whilst the other put into the aviary at the elephant house. On the other hand, the **great curassow** *(Crax rubra)* stock had to be stopped as a result of their outdoor aviary becoming worn to such extent that these majestic birds had to be sent to colleagues in Děčín.

As regards the terrarium section, traditional breeding success was repeated in species like the turtle *Cyclemys pulchristriata*, the **water dragon** *(Physignathus cocincinus)*, the **bearded lizard** *(Pogona vitticeps)*, the **California king snake** *(Lampropeltis getula californiae)* and the **Sinaloan milk snake** *(Lampropeltis triangulum sinaloe)*, the breeding success also attained with the **red-foot tortoise** *(Chelonoidis carbonaria)* - ***photo 10***, the **Madagascar day gecko** *(Phelsuma madagascariensis)* and the **royal python** *(Python regius)*, these producing a single animal from the clutch. Several new species were added to the reptile collection, the stock of the rare **Annam leaf turtle** *(Mauremys annamensis)* introduced this way. These are to become a flagship species as part of the EAZA campaign to support the endangered fauna of Southeast Asia. Launched in September 2011, the activity is to be joined by Ústí nad Labem in January 2012 once the zoo

gets ready as appropriate. The **blue-tail monitor** *(Varanus doreanus)* - ***photo 11***, became another new species, a breeding trio obtained from a private breeder. A generational replacement was completed in the **panther chameleon** *(Furcifer pardalis)*, the current male on display already reaching old age and its health getting worse over the year. The young pair obtained from a private collection is believed to enable the team to dedicate efforts to this attractive lizard in terms of breeding in the future.

The frog section managed to reproduce a total of five poison frog species: the dart **poison frog** *(Dendrobates auratus)*, the **blue poison frog** *(Dendrobates azureus)*, the **yellow-banded dart frog** *(Dendrobates leucomelas)*, the **golden poison frog** *(Phyllobates terribilis)* and the **Golfodulcean poison frog** *(Phyllobates vittatus)*. Unfortunately, a disaster affected the frog collection in the second half of the year, since there occurred a mass decline. The dead animals were partly sent to the State Veterinary Institute Prague, whilst samples obtained were forwarded to a private microbiology laboratory. In addition, samples of faeces were sent to the Veterinary University Brno. Despite all these specialised examinations, efforts to clarify the cause of the perishing failed. Since the frog collection was greatly reduced, we can only hope that no further deaths occur.

As part of professional activities, department staff members participated throughout 2011 in meetings of UCSZOO's specialist committees, this involving primate and felid meeting in Ostrava, parrot and macaw meeting in Prague, pinniped meeting in Hodonín, amphibian and reptile meeting in Prague, deer meeting in Bratislava, sheep and goat meeting in Liberec and a meeting of the committees for record keeping, equids and animal transports in Kostelec nad Černými lesy. Other meetings included the annual EAZA conference held this year in Montpellier, France, with the zoo's Pesisir Balikpapan project presented by means of a poster - ***photo 12***.

Veterinary care

MVDr Renata Poživilová

The vendor of veterinary services in 2011 continued to be *Sdružení veterinárních lékařů a služeb* (association of veterinarian doctors and services), it operating not only in the zoo grounds but also in Animal Rescue Centre that is managed by the zoo and providing both regular care and availability over the weekends and public holidays in addition to normal weekdays.

An integral part of the activity is the co-operation with the Veterinary Authority for the administrative region of Ústecký kraj, the VA inspectors overseeing not only the zoo alone, but also transport services if an animal is being sold, purchased or exchanged ***(photo 1)***. In doing so, the regular inspections did not observe any violations of applicable laws or animal welfare.

Later in the year, the nation-wide emergency veterinary measures issued due to the bluetongue infection back in 2008 were cancelled, so the Czech Republic became a country free of the disease. Although not threatening the zoo animals in terms of health, blue tongue was complicating animal transfers due to the measures imposed and some of the animals at the zoo had to be vaccinated against the disease.

The most recent year was in many ways similar to the previous periods, particular emphasis being placed on good health prevention. Animal health was monitored on a daily basis by zoo keepers, any change in animal behaviour recorded and reported.

As regards parasites, standard blanket deworming takes place twice per year, with parasitological checks performed in most species, the majority of these conducted in the contractor's own lab. Any further deworming is conducted based on the test results.

Vaccination are important part of the prevention, this taking place chiefly in carnivores, equines (Somali ass, zebras, ponies) and even-toed hoofed mammals and employing standard commercial vaccines.

The regular health checks on the respective groups of animals include blood tests, with biochemical and haematological testing performed in most cases at the veterinary laboratory mentioned above, follow-up examinations of diseases per type being carried out by dedicated specialists.

Health checks are conducted in new arrivals as well, to avoid any disease or infection being introduced.

In addition to the collection, testing on feedstuffs is mandatory, this mainly involving those of animal origin. Examining sources of water and checking the result of rodent control actions is also necessary.

As regards infections, the situation was relatively settled, with just a single case of salmonella handled. This involved waterbucks, the disease limited to a single animal without any further spreading.

Recurring diarrhoea was treated in nilgais. After deworming the entire group based on the findings of parasitology check and parasites found the status settled, which however did not last very long. Since even treating the affected animal was not successful as

desired, bacteriological examination of faeces was carried out, the output confirming suspicion that this was a clostridium infection. Therefore, it was decided to vaccinate all the group members as well as animals held in the petting yard using a clostridium vaccine (Covexin 10).

The team was also quite worried from Isar, the female tapir, the animal starting to suffer from the acute rhabdomyolysis syndrome. Fortunately, a good contact can be established with this animal, so the drug administering by injection worked quite well, although the last period of the treatment resembled from time to time playing hare and hounds around the quarters. In addition to the medicine, the female's diet was revised, with nutritional supplements added to water due to decreased food intake. The tapir's health has now been good and it is hoped that the disease will not recur.

There has been an issue concerning an overgrowing claw on the front limb of the elderly Malayan sun bear over the recent three years. Trimming is required from time to time to prevent the claw growing inwards, this necessitating narcotisation, which sometimes takes place even twice per year. Naturally, this provides the opportunity of checking overall health of the animal, including blood sampling for further examination.

A quite extraordinary case had to be solved in Budi, young Bornean orangutan male. The ape was observed by the keeper to wear a piece of wire or a small spring around one of its upper teeth. Because orangutans feature very good skills, everyone was hoping that the male would put the spring off by itself. Since that did not happen, putting the animal to sleep was needed eventually. The item did turn out to be a small spring that had become firmly stuck between the orangutan's teeth, but it was easy to remove, without teeth or gums being damaged ***(photo 2)***.

Limping began in the maned wolf female in September. Since the situation was getting worse until the next day, the animal was put to sleep and further exams carried out, with radiographic testing revealing a complex fracture of the femur on the wolf's left limb. Given the finding, the female was transferred to a dedicated orthopaedic department of Veterinary Clinic Live, Litoměřice, where they conducted osteosynthesis, this involving revision of the fracture, cerclaging it by four wires and internal fixation using a plate with 10 screws ***(photo 3)***, the surgery being carried out by MVDr Jiří Vomáčka and MVDr Eva Štolcová. Convalescence was underway in a satisfactory manner, with the animal kept indoors to avoid any overloading. However, limping was back a few weeks after. The female was put to sleep once again, the subsequent radiography exam surprising everyone in that the original fracture had almost healed up, but the top of the plate was broken and also the femur was showing a new fracture. Seeing that the plate did not shift nor the screws became loosened, the female wolf was still kept indoors, with antibiotics and non-steroidal antiphlogistics administering restored. Now that the animal has almost ceased to limp and enjoys good health, it is hoped that the next exam within a year will be fine and the plate with the screws can eventually be removed.

With the Caesarean section executed in the female ring-tailed lemur back in 2010, this year's pregnancy in this animal was overseen with mild concerns, even an ultrasonography follow-up check had to be performed. Fortunately, everything was going well and the female eventually gave birth to a healthy baby.

Nutrition and feeding

Bc Anna Hrudková

In 2011, the zoo's feeding and nutrition budget amounted to almost 3.35 million CZK. Despite every saving effort whilst maintaining the quality and quantity of each commodity, this budget was exceeded by about 40 thousand CZK.

The periodical supplies of vegetables and fruit ***(photo 1)*** from Hoka, Teplice (twice a week) were successfully reduced by 170,588 CZK compared with the preceding year. This was chiefly possible due to the food removed at Hypermarket Albert and more recently also at Hypermarket Globus Trmice, which the zoo was being donated three times per week, with only transport expenditure covered. This not only involved their range of fruits and vegetables, but also dairy products and pastry.

As regards the former, the quantities fed throughout the year were as follows: leafy vegetables: 16,707 kg; root vegetables: 69,395 kg; other vegetables: 14,505 kilograms ; southern fruits: 4,490 kg; the fruit of the temperate zone: 4,816 kg; citrus fruits: 5,252 kg. A separate group comprises bananas of which a total of 8,699 kg was consumed; apples, the quantity amounting to 28,694 kg; and fodder beet that is stored for winter in two pits in the zoo grounds, with 25,000 kg consumed.

Meat was sourced from the Mimoň-based Váša company as with the previous years, with a total of 6,030 kg of beef ***(photo 2)*** consumed by the carnivorous creatures we nurse, including beef hearts. The meat supplied from the company above is one of food grade. The same applies to poultry, that is chicken, pullets and chicken skeletons, with 7,373 kg of this commodity being fed. The group of meat-based feeds includes essential components like rabbits, 4,759 kg fed, and herrings, this used solely to feed the seals and the seal lion, consumption being 5,090 kg. Biological food presents an integral part of feedstuffs. This includes newly hatched chicks and feed rodents, in addition to rabbits, with the rate of volume being consumed per annum rising year on year, along with the requirements as regards natural feeding, this in 2011 involving 2,890 kg of chickens and 1,797 kg of feed rodents, both of which had to be outsourced to the considerable extent.

Important components of the diet include pellets, with Sehnoutek a synové, v.o.s., a company based in Voleč, being the standing suppliers and delivering the quantity required upon a telephone arrangement every six weeks. Consumed types of compound food included in particular pellets for ruminants (13 tonnes fed), giraffes (7.6 tonnes), fallow deer (4.4 tonnes), equines (7.3 tonnes) and ostriches (1.6 tonnes). By the way, the giraffe pellets are designed and fed only to this hoofed mammal, in addition to alfalfa pellets the consumption of which

amounted to 0.73 t. Other species that also receive specific feed supplements comprise the Asian elephant, this not involving classical pellets, but special extruded banana-flavoured elephant balls designed for dietary enrichment. Other feeds consumed mainly by the elephants include rice, with 4,872 kg consumed.

Essential components of the diet to keep the excellent condition of the stock include vitamin preparations, much of which is taken from the Agrobio company, Prague. As regards quantities, 599 kg was consumed by hoofed mammals, 266 kg by ornamental birds, 11 kg by large felines and 2 kg by reptiles.

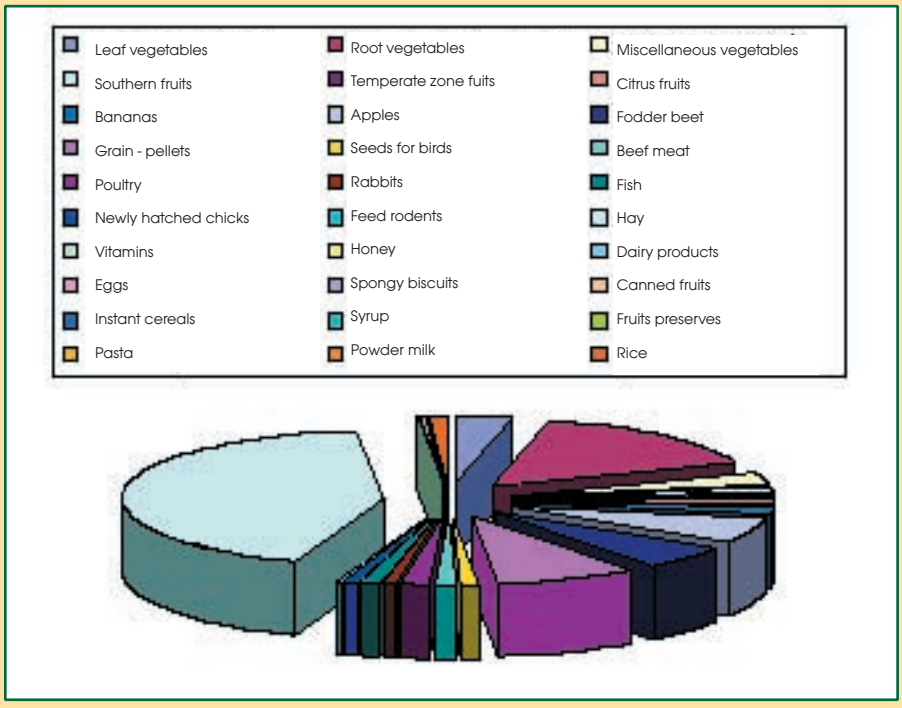
As regards very attractive and rare bird species held mainly at the breeding centre behind the scenes, feedstuffs chiefly comprise seeds, of which they consumed a total of 4.4 tonnes. The diet in these birds indeed consists of other components as mentioned below, the respective totals however including rations of other types of animals than just birds: hard cottage cheese (270 kg consumed), eggs (23,001 pieces) and nuts (489 kg fed), ***photo 3***. As regards cottage cheese, not just the hard type is used in rations, but also the soft type, as well as white yoghurt, which is purchased for orangutans, with 139 kg of soft cottage cheese and 33 kg of white yoghurt consumed in 2011.

The respective animal departments receive supplemental feeds four times per month, which comprises small items purchased in the Makro store. These mainly include spongy biscuits (101 kg consumed), canned fruit (183 kg), instant cereals - mainly for lemurs and callitrichids (36 kg), milk powder - a component for preparing instant cereals (47 kg), pasta (24 kg), syrup (42 kg) and fruit preserves (23 kg).

There is hardly any visitor that will miss the weekend show called "Honey Tree", this involving coating trunks placed in the Malayan sun bear outdoor enclosure with honey and letting the animals to search for such places ***(photo 4)***. To this end, 52 kg of this sweet material was taken from a private apiculturist and consumed in 2011.

The annual consumption per group of food in kilograms is shown in the attached table and figure.

Leaf vegetables	16,707
Root vegetables	69,359
Miscellaneous vegetables	14,505
Southern fruits	4,490
Temperate zone fruits	4,816
Citrus fruits	5,252
Bananas	8,699
Apples	28,694
Fodder beet	25,000
Grains - pellets	38,745
Seeds for birds	4,436
Beef meat	6,030
Poultry	7,373
Rabbits	4,759
Fish	5 090
Newly hatched chicks	2,890
Feed rodents	1,797
Hay	190,438
Vitamins	911
Honey	52
Dairy products	442
Eggs	1,150
Spongy biscuits	101
Canned fruits	183
Instant cereals	36
Syrup	42
Fruit preserves	23
Pasta	24
Powder milk	47
Rice	4,872



Animal Rescue Centre update

Jaroslava Ježková

The centre`s activity did not much differ from that in the previous years. Since operational subsidies were cut in 2011, the centre`s staff was focusing on ensuring smooth running and conducting the same tasks that it performed earlier. Out of a total of 591 dogs accepted, 284 were returned back to the owner.

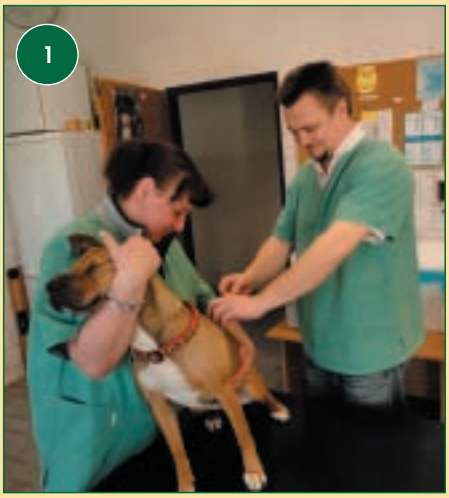
The process of microchipping the animals we nurse ***(photo 1)*** and creating the centre's own register of microchips continued, the staff constantly coming across the fact of new owners of animals they adopt here failing to follow up and register the animal at the appropriate local authority or with one of the databases of microchipped animals operated in the country, this resulting in microchipped dogs that must be retained at the centre and cannot be returned to the owner. With our own database, every animal that at least arrived and left once is on file and can be returned to the owner.

The most common veterinary services included in particular vaccinating dogs, microchipping and treating various viral and diarrhoea diseases. Injuries occurring most often related to a variety of fractures, these mainly caused by car collision.

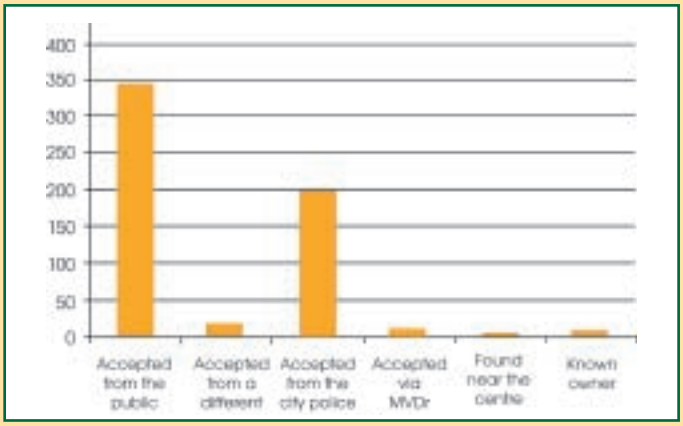
Similarly as with the previous years, the staff was dedicating their time to promoting the centre at events designed for animal shelters, this for instance involving Útulek Fest (an animal shelter festival), the centre being amongst those invited every year, or the dog and cat show called Dog's Dream held in Vinoř near Prague and dedicated to offering the abandoned dogs and cats for adoption ***(photo 2)***. Last but not least, awards were won at several shows for mixed-blood dogs, which we traditionally attend. This publicity aims at seeking suitable locations and people wishing to adopt the animals at these events, which always meets a considerable success. This many times involves charitable events, with the subsequent yield allocated to the participating shelters.

Major annual support is received from citizens who donate food and treats for abandoned animals in addition to financial gifts.

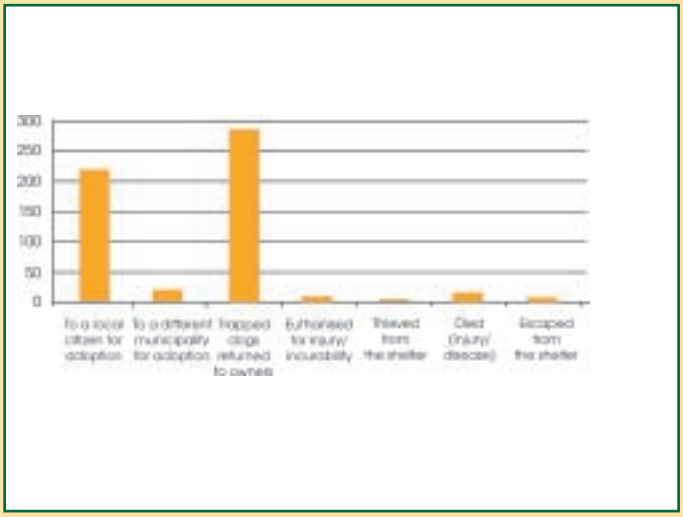
Due to the long-term struggle with space issues, the centre launched discussions with the municipalities placed in the neighbourhood of Ústí nad Labem resulting in agreements on cooperation based on which we were able to build seven new kennels, thus to expand the capacity of the premises ***(photo 3)***. The dog house heat-insulation project continued thanks to the new donors contacted who bought the remainder of heating plates that were installed throughout the facility, this also co-funded by the City of Ústí nad Labem.



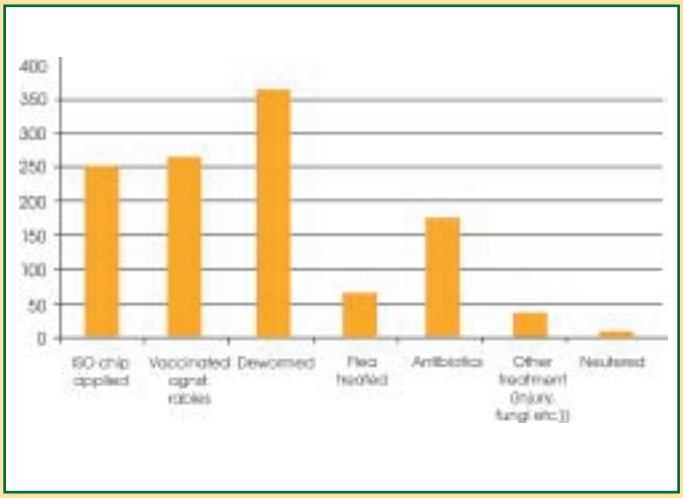
Dogs accepted (01-01 - 31-12, 2011)	
Accepted from the public	346
Accepted from a different municipality	18
Accepted from the city police	198
Accepted via MVDr Linzmayer	15
Found tied near the centre	6
Known owner	8
Total	591



Dogs out (01-01 to 31-12, 2011)	
To a local citizen for adoption	217
To a different municipality for adoption	13
Trapped dogs returned to owners	284
Euthanised for injury/incurability	7
Thieved from the shelter	3
Died (injury/disease)	10
Escaped from the shelter	5
Total	539

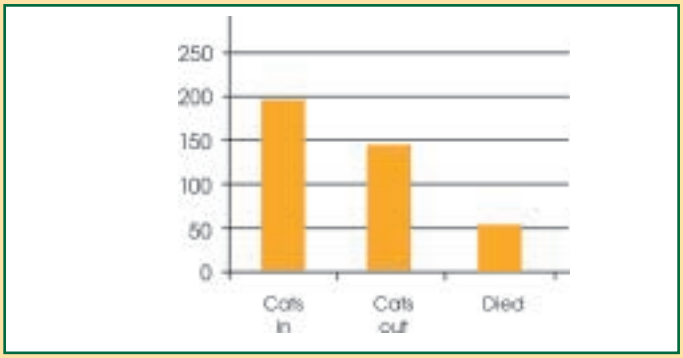


Treatment and vaccination (01-01 - 31-12, 2011)	
ISO chip applied	252
Vaccinated agnst. rabies	272
Dewormed	372
Flea treated	66
Antibiotics	174
Other treatment (injury, fungi etc.)	35
Neutered	15
Total treatments	**1186**

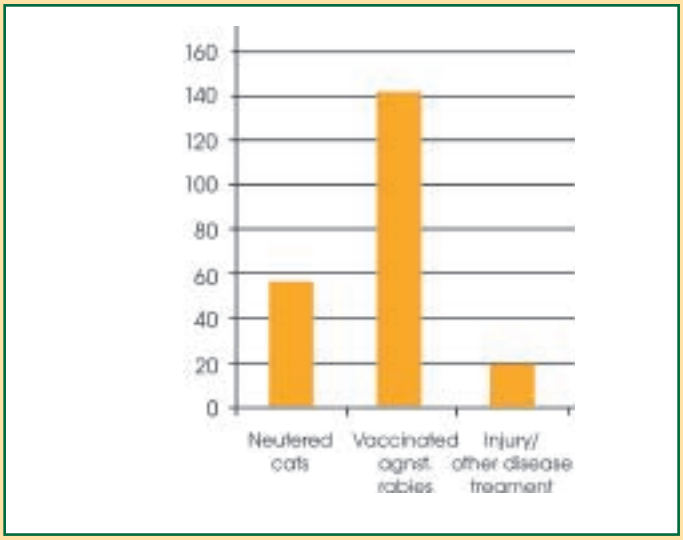


Fees received for outgoing dogs (vaccine, microchip)	300	Ústí nad Labem citizen
Fees received for outgoing dogs (vaccine, microchip)	400	other citizens
Housing fee per day	60	
Transport fee, incoming dogs	100	
Lump sum per dog stay (dogs 30- cm)	1000	
Lump sum per dog stay (dogs 30+ cm)	1500	
Cadaver fee	22 CZK/kg	

Cats accepted and treated cats (01-01 - 31-12, 2011)	
Cats in	196
Cats out	143
Died	53



Cats treated (01-01 - 31-12, 2011)	
Neutered cats	55
Vaccinated agnst. rabies	143
Injury/other disease treatment	40



Birth in the Bornean orangutan *(Pongo p. pygmaeus)*

Patrik Matějů

Although featuring solitary habits in the wild, orangutans are often kept in a group situation. This applies to the stock held in Ústí as well, the dominant male Ňuňák kept together with female Ňuninka and male Budi, the third descendant of the two in the row. The fact that the adult male is rather dependent on the presence of the female can perhaps be a result of the breeding pair growing up together since their young age. Ňuňák is tolerating infants and is very happy in playing with them as a model father on a frequent basis. The presence of males at birth is however not desirable, this justified by their considerable passion to mate often leading to the female being raped, which might occur in the case of birth as well. Ústí's best practice is separating the animals overnight, this taking place on a daily basis to make sure this habit is normal for the animals and causes no stress within any pre-delivery period.

Compared with other great apes, orangutans feature the longest birth interval, which may range from 4 to 6 years despite frequent mating, unless the infant is lost. Since detecting pregnancy is not easy due to the large belly of the Ústí' female, the team seeks some guidance in certain traits accompanying the condition, such as changes in the genitals and breasts, consistency of faeces and altered behaviour. Faeces and urine hormone level checks are another option, but as faecal analysis is a costly method, human pregnancy tests are preferred but unfortunately not always accurate and any estimations are mostly confirmed once the pregnancy period has considerably advanced.

In mid-May 2011, intense genital swelling was observed in the female ***(photo 1)***, with pregnancy test results then being still negative despite the persistence of the swelling. Ňuninka was taking more rest, her breast slightly enlarged and the form of her faeces subsequently changed. In October, one of the two types of pregnancy tests came out positive, so finally confirming the team's assumptions.

Just like every morning, orangutans were prepared their breakfast food in one of their inner facilities. Called the playroom, the area is used by animals daily in winter and over cold periods and this is where the visitor can watch the orangutans through safety glass standing inside the hall of the Bornean House. Preparing breakfast involves pouring a mixture of flakes and pellets on the floor and hiding nuts in the feeding box, which as a result serves the animals to spend time, in addition to its main purpose, i.e. feeding.

Letting the male in first, I noticed that the female`s mood was not as usual. Lying on her back on a wooden bench, the ape was staring at the ceiling, as if oblivious to the surroundings. The nearly five-year male Budi was somewhat nervous, sniffing female's genitals. I immediately transferred the young one to join the male because I already guessed that the birth was approaching. The female was putting her fingers to her vaginal opening and turning on the belly and back on the bench, her upper limbs gripping the bars, whilst lower limbs grasping the netting or ropes. The animal obviously suffered labour pains. I informed the chief curator Petra Padalíková, asking her to make sure a camcorder is available to try to take a footage. In fact,

all the previous births (except for the initial one) were underway at night or in early morning and none of the local orangutan keepers was ever successful in witnessing such a unique event.
After receiving the camcorder, I went to check the female. Her upper lip was trembling and the animal was producing occasional sighs. After a while, a lump began to form near the vaginal opening. With intense agitation and shaking hands, I grabbed the recorder and started awkward filming. Then came the head and within a few seconds the young one was out! The female picked the newborn and put it on her chest, starting immediately to clean the baby with her tongue and lips. Then she pulled the placenta with her left hand and started to suck it. Everything happened so quickly and automatically, with the female disregarding my presence and being absolutely calm, which was hard to say about myself since it was my first opportunity to be present at the birth of my favourite animal. The female cleansing the newborn's mouth and eyes, I observed it to be a female as it was handled by the mother. I was so excited by then that my glasses became misted and my hands were shaking even more. I was shooting about 45 minutes, with however results being very poor as regards the quality. Opening its eyes and squeaking from time to time, the young orangutan was still connected with the placenta through its umbilical cord. The female was exhausted after the birth, trying to get some intermittent sleep. Later on the young one became restless, probably seeking the nipple, with however not very much assistance given by the female in any way.
Putting up the young Budi with the mother ***(photo 2)***, I could see the male was very surprised by the new arrival, but although being very curious, he was first eyeing his sister from a safe distance.
The day after, Budi was left during the day with the adult male as before to let the female enjoy quiet recovery after the birth, it only moved to the next sleeping room for cleaning. The newborn orangutan was independent in holding to the mother, the female only keeping the animal to her body by her hand. Since the umbilical cord was still connected with the remnant of the placenta, which had been producing bad odour, I attempted to cut it to avoid any infection or the umbilical cord being crushed down. This was possible with the female spending most of the time close to the sleeping room bars. The cord was successfully cut to measure about 20 centimetres, with the remnant drying up and falling off over the following day.
Any action of putting the male to the female was left pending upon the decision of the female. The team waited until the female would start showing interest to join the male. Contrary to the male, for which isolation was bad experience, the female was apparently enjoying some rest and peace. Once it seemed to prefer staying in the group's company, which occurred after six days, i.e. by Thursday, 22 December, the orangutan family returned to its normal daily schedule.
Over the next days, Budi cuddled against his mother, spending more time with her than before, the reason being definitely his sister, whom he was touching and sucking with curious interest. As regards the adult male, the newborn was noted, but ignored. We have already learned that he has never started to play with offspring until invited so.
Everyone feels an incredible pleasure from this new arrival and hopes in the healthy development of the young female ***(photo 3)***.

Managing the Malayan sun bear *(Helarctos malayanus)*

Bc Tomáš Anděl

The Malayan sun bear *(Helarctos malayanus)* is along with other eight species included in the family of bears, with two subspecies currently described, of which the nominate *H. m. malayanus* (Raffles, 1822) is found in the territory of Bangladesh, northeast India, south China, the Malay Peninsula and Sumatra and *H. m. euryspilus* (Horsfield, 1825) ranges in the island of Borneo. As regards size, the latter subspecies is distinctively lesser, reaching a maximum weight of 65 kg, whilst individuals of the mainland subspecies can weigh up to 80 kg. Malayan sun bears excel amongst the family members mainly due to their skill with which they climb in the trees, this being where they employ their tongue of extraordinary length (up to 25 cm) to extract their most favourite food, honey and insects, from cavities. In addition to such activities, the tree top is sometimes used for sleeping or as protection against possible predation by tigers. Other traits of the species that should not be ignored are sure to include the absence of hibernation and reproductive cycle completely independent of the season, meaning that births occur throughout the year unlike other bear species.

Red-listed by the IUCN as a vulnerable species, with a population trend declining, the Malayan sun bear is alike with many other animals threatened mainly by the loss of habitat caused by uncontrolled deforestation and persistent poaching. According to conservative estimates, the total population has shrunk by more than 30% over the most recent thirty years, with some local populations experiencing a loss of up to 50%.

Ústí Zoo has been dedicated to breeding these visitor attractions since 1987 on a continuous basis, that being the time when male Toro was imported from Vietnam with females Mišutka and Lotynka, the group expanding two years later with a male Imro and females Ajči, Bibi and Kubula, the long journey of whose had begun in Hanoi as well. A historical breeding success is related to 1993, when the zoo managed to rear its first bear cub, a female Bora. Having spent three years in the north of Bohemia, this animal was moved to Frankfurt a/M, Germany, the breeding success of Toro and Mišutka being repeated in 1997 when they pro-

duced a male Cecil. This young bear was growing up under the protection of its mother in Ústí up to November 2001 when it left for the zoo in Zagreb. A year after Cecil's departure, the female unfortunately died and the male Toro loaned to Olomouc Zoo. Subsequent transfers of several animals have resulted in the number being stabilised in 2006, when a young male Myanmar and a female Barma were successfully obtained ***(photo 1)***. Since both animals are very distinct in terms of origin, which makes them attractive for any breeder, the main task following their arrival was to build on previous breeding success and make the species reproduce once again, this happening only on 20 June 2011 despite several previous mating attempts that hardly someone could ignore. When Barma delivered her first cub, we immediately closed the visitor hall of the Carnivore House as usual, allowing the inexperienced female to become acquainted with her fresh-born offspring in semi-darkness of the indoor enclosure. The week 1, the female was left undisturbed in the 100% quiet house to carefully look after for the cub, it letting everybody know about its presence by very loud calls. The day 8 after the birth the female was separated for a while without any major problem and the cub underwent its first-ever brief veterinary inspection ***(photo 2)***, this showing that the little bear was a female with a standard weight of 640 grams. It was however found that caring by mother during the first hours was more than thorough, with the young female losing most of the claws on her rear extremities. Fortunately, this is not any handicap which might be preventing the animal to live its life to the fullest, as indeed has been evidenced by the female on a daily basis. Given that Barma is a very interactive and relatively "submissive" animal, separating it into the next box and thus having the development of the young one under control has not been a serious problem. Eye opening arrived for the first time on 7 July and the cub's weight increased to 2.26 kg within a month. As Barma was showing an unexampled raising attitude for its first-ever offspring, the young Babu, as named officially, was thriving in every aspect, reaching as much as 5.4 kg on 30 August. After some time, the access to the visitor area was possible with minor restrictions, this allowing everybody an unusual view of the female carrying the cub in arms.

Keeping Malayan sun bears is something that in Europe is a focus of 22 zoological institutions dedicated to these noteworthy members of South Asian fauna, which covers 55 individuals managed. As the records of the holders only evidence how big is the challenge of making this species reproduce in captivity, the zoo in Ústí nad Labem has proved that it can be ranked amongst those successful.

14 July

3 August

15 September

19 October

7 November

Clouded leopard *(Neofelis nebulosa)* bred and reared

Bc Tomáš Anděl

Managing the clouded leopard *(Neofelis nebulosa)* is definitely not a matter of routine, this species substantially differing from other large felines as regards the approach. To eliminate the risk of death of a female, which often occurred in the past when putting the animals together, young and sexually immature animals are recommended when setting up a new breeding pair, this considerably reducing the male's aggression against the female during the oestrus, thus increasing the chances of successful breeding in these beautiful and endangered carnivores. In the case of the local "clouds", Cayan and Lenya, joining was underway during April and May 2010, when the male was a yearling and the female was two years old. While during their first year at the zoo the animals sexually matured and became used to their new housing circumstances, the second year was far more interesting in terms of management.

The winter period early in the new year was spent indoors with animals staying in perfect harmony with each other and without any tiniest sign of mutual aggression, the joint feeding being the only problem. Even having spent a year in the local breeding facility, the female was still very shy, essentially leaving its shelter in the nesting box in the evening, which significantly limited her access to the food served. For this reason, the animals were separated overnight ***(photo 1)*** as necessary, which soon could be seen in their condition getting improved. Any subsequent action of putting the felines together was going smoothly and absolutely seamlessly each time. In the middle of the second week of March, both of the leopards stopped taking food and the male began increasingly vocalise, which could suggest the onset of oestrus. Due to the noticed female's shyness the fact the animal was active only at night, any interaction was not possible to observe in detail. Since the animals' willing to take food restored after several days, the male's vocalising ceased and things returned to the normal conditions, the team assumption that Lenya might have been pregnant was fully confirmed only when the female gave birth to three kittens on 8 June 2011. Immediately after we learned about that, the carnivore house visitor area was closed to provide the young and inexperienced pair with rest as necessary, with anything that was happening inside the nesting box monitored only by recorders ***(photo 2)***. The first positive finding was that all

the three cubs had been born alive and that the female was showing the interest as appropriate, another benefit being seen in that the male did not show any aggressive behaviour. Rather, he could be described as excessively curious and playful, which we attributed to the animal's age. The female was watching the process of the male getting familiar with the kittens without response, the initial hours after the birth taking place better than expected. Despite the positives, it was soon evident that this rearing process would be primarily about gaining important experience for both parents. It must be noted that had we removed the cubs for rearing them by hand, the young pair would lose essential experience, much needed for them to reproduce any further. In addition, any involvement of a hand-reared individual into reproduction is alone highly problematic and often leads to situations very difficult to manage. For these reasons, we had clearly decided not to intervene in the rearing process, the situation to be only monitored. Although this first attempt to breed resulted in an apparent failure four days after, yet it can be assessed in a rather positive manner, especially as being a great promise for the future.

As early as a week after the first birth, the behaviour of both leopards was apparently showing signs of the onset of another oestrus and first mating attempts were possible to observe in the nesting box using the recorder, the remainder of activities again happening in the evening, with very limited opportunities of observation. Once this period has subsided, the quite idyllic coexistence was restored. Both cats were staying together all the time, separation being necessary only from time to time because of feeding. In early September, the respective part of the female's body began considerably enlarge, with Lenya delivering three live kittens for the second time on 26 September 2011 between 1.15 and 5.30 p.m. The birth occurred when the male was staying separately from the female, every subsequent attempt at rejoining failing since the female's behaviour had radically changed compared to the first birth, the animal preventing the male to get any closer to the offspring. As the aggression of the animals against each other was escalating, the male had to be eventually isolated from the female with cubs. This time Lenya was displaying unexampled care, almost refusing to leave the box over the first couple of days after the birth. The positive shift in the female's maternal behaviour was quite striking, with kittens virtually shooting up. On a veterinary check, when two and a half months old, the two males and one female were weighed, dewormed, vaccinated ***(photo 3)*** and microchipped, all of them now still thriving under the excellent care of their mother. The male is now still kept separated from the female with the cubs, any attempt at restoring the pair envisaged only once all the kittens have been weaned.

Elephant house update

Jan Javůrek, Petr Kiebel

In September 2010, artificial insemination took place with female Delhi, the results of which arrived only after four long months. The ultrasonography of 29 January 2011 unfortunately confirmed that Delhi was not pregnant, thus facing everyone with the question of what to do next and how to continue with the elephant breeding efforts in the near future and beyond. Since assisted reproduction has been placing high demands on Delhi and the elephant keepers, as well as the zoo as such, a decision was taken along with the zoo senior staff to discontinue any further attempts at AI with Delhi. Failure to top off the seven-year effort with success, regardless of the energy and endeavour invested, resulted in a one and only conclusion: either Asian elephants are kept in a natural situation, or the activity is terminated upon the death of our elephant females or upon the death of one female, whilst the other is moved off the zoo. Naturally, continued effort would be an enormous interest of everyone, this however meaning the necessity of extending the breeding facility by a house for an elephant male and adding space to the existing building which equals another two females, exactly to the recommendation of Elephant EEP (European Endangered Species Breeding Programme) to the European Association of Zoos and Aquaria (EAZA), such steps being even consistent with the zoo's commitment in connection with the EEP coordinator approval as to AI, and should have been taken by 2015. Meeting these requirements would result in providing prospective elephants. Indeed, Ústí nad Labem has been assigned a young male elephant; called Fahim, he now lives in Bellewaerde, Belgium. Sadly, there is no way to achieve such goal but to convince the zoo's founder, i.e. the City of Ústí nad Labem, to invest some 30-35 million Czech korunas, without which the elephant stock planning has no chance for the future and of course no one can even determine when the black scenario described above comes true. It may take decades, but even several next years...

The most recent ultrasonography detected another fluid in Delhi's uterus, which may produce significant health issues in future. After consulting veterinarians from the IZW, the staff decided that the fluid should be exhausted. On 7 July 2011, Delhi has been prepared

for the treatment and the IZW team was going to carry out vacuum aspiration of the fluid after performing ultrasonography ***(photo 1)***, which however yielded very surprising and positive findings. Not only the uterus was found to lack any fluid, but also a full ovulation had taken place a day before the examination. Periodical blood sampling was agreed to continue so that we were able to record and evaluate the quality of the cycle. This new information as well as the increased enthusiasm of IZW vets in continuing the AI scheme changed the zoo's previous intention of ceasing any further attempts. As regards female Kala, who was examined as well, the found results were not such positive, the animal showing to have suffered a permanent deterioration of its reproductive organs. Kala's cysts have increased, the largest of these having a size of a fist, IZW vets even believing that this might have been causing pain, particularly if a cyst had ruptured. This appears to be related to the female's occasional lack of appetite, with which the team was struggling mainly in February, when Kala did not eat all the week long. Yet this animal was also found to have undergone a cycle, then fading away. Since this however unnecessarily burdens the body and causes in part the cysts to enlarge, the team is assuming to eventually stop the hormonal cycle in the future using medicaments, which might even lead to cysts to reduce. However, Kala suffers from other health problems as well, such as skin inflammation or cracks on the trunk, with occasionally abnormally cloudy urine indicating kidney inflammation problems. The health issues include the musculoskeletal disorders. The animal's injured limb (which happened back in Vietnam) and arthritis greatly affect Kala's ability to move and especially stand up. Orion Pharma and its joint medication APTO-FLEX, which the company had granted as a donation, enabled the team to try to prevent the female's motional skills to become worse. Such health problems that Kala has been experiencing have made everyone even more stirred when thinking of the bleak prospects of our elephant stock.

The next ultrasonography carried out on 20 October 2011 ***(photo 2)*** confirmed Delhi's availability for another AI session, if any. With blood sampled on a periodical basis, intense Delhi training and preparing for insemination, the team was waiting for the blood tests to determine the appropriate moment, that is when the first LH peak and simultaneous progesterone decrease is followed by the second peak being found. Since that sadly did not happen within the estimated date of insemination, the AI session had to be withdrawn, whilst eventually learning after the samples were thoroughly analysed in the IZW Berlin lab that ovulation did occur in Delhi, this however taking place two days earlier than expected and before conducting the LH tests. Any next possible date of ovulation will come over the next year.

As part of providing the public with more insight into the daily living of both females and the publicity of the elephants, the website www.choboti.cz underwent a major update, this involving redesigning, updating and expanding the details available along with the database of all elephants in the Czech Republic as well as Slovakia, linking the site with Facebook and the team's account on the YouTube service giving an access to a more than dozen videos featuring the elephants. The public activities also relate to the experience programmes introduced, which for the applicant involves the opportunity of not just petting and feeding the elephants, but even testing what it is like to become a real elephant keeper for one day. Needless to say that applications concerning staying with elephants are enormous in terms of numbers. In addition to the above, the elephant females enjoyed a large number of visitors like in any other year, this including not only students of all stages, children from children's homes or those of the Ústí public transport company staff members, but also university students as well as celebrities, such as actress Iveta Blanarovičová, singer Jitka Zelenková ***(photo 3)*** or ski-crosser Tomáš Kraus. Another crowd of visitors arrived on 28 to 30 October 2011 as the zoo held its "days of open door", giving the elephant team the opportunity of showing the host of those wishing to look behind the scenes the managing techniques and facilities from a different perspective than normally permitted. Early in 2011, the keepers tried to teach the elephants painting on canvas with colours. This produced some interesting paintings and it is believed that sometime in the future this skill can be used to further increase public interest in the elephants.

In June, there was a period of general servicing as regards the hydraulic posts used for separating the elephants in their sleeping room overnight. Although it is a rather expensive and complex system, the team concludes after seven years of it being used that once initial issues have been eliminated, the technology has proved to be successful, effective and efficient.

As in the previous years, the elephant keepers joined the annual meeting of

the elephant committee to the Union of Czech and Slovak Zoos (UCSZOO). Held at Ostrava Zoo, the committee enjoyed Ústí's team presentation on artificial insemination and on the current situation of Ústí's elephant stock. The main topic of the meeting was of course the elephants produced in Ostrava, an extensive discussion being held on the public response to the death of the small male elephant, this permitting the team to present the colleagues with invaluable lessons learned from the birth of a dead elephant in Ústí, whilst it can be concluded that it was the second elephant successfully reared in Ostrava, female elephant Rashmi, which has exactly and clearly shown the way that we should and need to take if wishing to keep such rare and wonderful animals that elephants certainly are, in a meaningful manner.

In the autumn, keeper do-it-yourself efforts produced a bamboo railing erected around the elephant outdoor enclosure, the aim of which was not just to make sure vegetation is not destroyed by visitors, but also to prevent any event of falling into the ditch in the enclosure resulting in injury. This in turn has yielded the issue of the capacity of viewing points being limited when the number of audience is high, which particularly concerns routine training shows. This will have to be addressed in the future, for which extending the viewing platform and building a low-height spectator area seems to be the best option.

Issues had to be solved not just in elephants, but also in other animals at the elephant house. The success of hatched chick in the yellow-bibbed lory that flew out of the box on 5 August was sadly followed by the breeding male suffering health problems and dying after three weeks. Yellow-bibbed lories are highly intelligent birds, able to establish close contacts with their keeper, which for example can be evidenced by the latter being unmistakably hit by droppings when cleaning the facility, this often followed by the male saying to the staff: "Pretty boy." Therefore, the bird's death was carried with pain as well as another case we encountered on 30 September, when the chick died very young and suddenly. The post-mortem report found that the male apparently died of liver problems, whilst massive infestation of the young bird proved that the attempt to deworm the chick had failed. The birds were restocked in November when a new male was released into the aviary along with the chick produced previously. Another problem was a brown rat penetrating into the other aviary and unfortunately biting the both emerald doves to death. This was followed by a comprehensive rodent control throughout the house.

As a conclusion, the elephant team would like to thank the elephant supporters and donors, more specifically companies ČEZ Group ***(photo 4)*** for their gift of 100,000 CZK, Orion Pharma for donating the joint medication and Dorant for providing refreshments for the IZW team members on their visits and our beloved animal fosters, the family of Mr Jakub Zavoral.

New Hartmann's zebra house *(Equus zebra hartmannae)*

Ing Pavel Král

A new house for zebras that everyone at the zoo was restlessly waiting for was opened on 28 October 2011, replacing the original wooden stable built in the upper part of the zoo 36 years ago in 1975 ***(photo 1)***, based upon the sales offer that Ústí received from the zoo in Dvůr Králové, which involved 12 Hartmann's zebras imported by Josef Vágner from South Africa. Initially, the house comprised six stalls, the number increasing over the years to eventually reach 15, whilst naturally the area per stall reduced. Although the facility was not heated, the temperature was never dropping below 8°C, no matter of the frost level. Humidity ranged between 60% and 80%. Air exchange was provided by a fan and tilt-down windows. The stable included narrow service and feeding corridors along each side of the boxes, as well as a keepers' room and food preparation room. Near the house, there was a wooden facility used to store hay and saw-dust.

The former zebra house was with regard to functionality and accessibility amongst the best facilities developed at the zoo, although built very quickly due to the animals offered. It was also managed from the beginning as a temporary structure, constant adjustments however eventually losing sense because of the overall wear and tear, with the rotten beams and even a part collapse of the timber ceiling.

As the structure had also ceased to meet the standards set by the European breeding programme (EEP) for holding mountain zebras, a decision was made to build a new house.

The fact that the construction phase was planned to take a year required retaining the old facility and carrying the work under full operation ***(photo 2)***, which was necessitating an increased keeper care and harmonising the construction work with daily routine concerning the animals throughout the development.

The ground plan of the new house is L shaped, its planning taking into account any feature of the old house that had worked well. Since the zebra stock is not supposed to shrink in the future, the previous number of stalls was maintained to some extent, with 14 stalls specified by curators (two stallion boxes, nine mare boxes and three spare boxes). The area per box was enlarged against that recommended under husbandry guidelines (these providing 2.3 x 3 m, i.e. 6.9 square metres for the mountain zebra), now measuring 2.3 x 4.0 m (n = 11). With the size of the spare boxes opening directly into a large gravel pen (n = 3) equalling the former, the resulting per box area is 9.2 metres. The feature employed back at the old house, i.e. servicing the boxes via two corridors along each side, was maintained with the new facility since it proved well in the daily practice. The feeding corridor is designed to serve the boxes with regard to feeding and watering, thus allowing for feeding and cleaning the mangers and drinkers even with the animal retained in the stall, the other used for driving the animals out and in and cleaning the boxes. An important system that contributes to the hygiene of the facility, drainage was kept to that of the older house in the form of a continuous gutter running along the corridor and sloping towards two drains, to serve mainly for wet cleaning. When summed up, the area of all

boxes and both corridors produced the specified area of the stable to be 221.5 m² approximately.

The team's effort was to elaborate the other parameters and functions of the new house as well, this particularly involving increased intensity of natural and artificial lighting. The 14 rather small windows in the former house were resulting in the animal entering a dark area; in addition, the poor indoor lighting conditions produced by bulbs was not sufficient for cleaning. The new stable makes use of three rows of fluorescent tubes, one of which can be automatically deactivated to extend the lighting period in the stable, particularly in winter. The window to floor area ratio was improved to 1:10.4 for the new house compared with that for the old stable (1:20). In addition to the nine windows installed along both corridors, seven 2 x 1 m ceiling windows are a particular enhancement, resulting in natural lighting conditions being distinctively improved. Improved air exchange and providing more space above the stalls with regard to dust was another team's focus, the stall ceiling height being increased from 2.2 m to 2.4 - 4.1 metres. Throughout the stable, there are tilt double windows. The amount of air per animal in the stable increased from 20 m³ to 54 m³, this however necessitating heating in winter unlike with the former house. Thus, the facility was connected to the zoo's central heating system with heat supplied from the geothermal well, this now allowing for indoor temperature control.

A great simplification was achieved when supplying hay, straw and saw-dust into the house. As regards the old stable, the hay store was located in a separate facility, with several animal boxes used for the purpose in recent years to make supplying and serving easier, whilst the new house includes a store for hay and straw on the first floor, the large round bales being stacked from the main access road directly into the store (29 m²), the bales then being thrown into the feed preparation room. The saw-dust storing method became easier as well, the service road being the place from which the material is fed into the top part of the house, alike with hay. To avoid increased dust level, the saw-dust store is separated from the remainder of the areas. Fodder beet supply takes place through the bottom house gate, with the entrance designed for a loader to drive in. The vehicle will also be used when handling crates upon arrival or departure of animals, in addition to being capable of entering the food preparation room to supply a bale of hay or straw.

Roughage is served onto a clean bedding near the manger, this now possible due to the increased stall area unlike with the old stable where this type of food had to be served into the hay rack above the manger. Since the previous 60 x 40 cm stoneware mangers proved to work well, the manger design remained unchanged, with just the area underneath the unit being now bricked. Likewise, the watering system was retained, this employing tongue drinkers. Each stall also contains a salt lick block holder. There is a muck-out bedding system using saw-dust and straw. The floor is made of concrete, with a slight sloping towards the corridor gutter. The wooden box barrier is two metres high.

Manure storage and disposal is designed by means of a large-volume container recessed below the floor level next to the house entrance.

As the completion was nearing, the new house had to be connected to the existing enclosure. Five former concrete pens were retained, the total

area of which being 224 m², and a gravel pen established between these and the house, this measuring 184 m². Recycled polyethylene panels were used for achieving a compact sub-base, another reason being easier rainwater removal using a drainage system. Equally important was the possibility of long-term stay of zebras on such surface with respect to animal health. In the back of the house, another gravel pen was built measuring 55 m¸ approx., with a third pen of that kind established as a link between the main enclosure and the entry corridor, raising the total number of pens at the new house to eight, a total area being 535 m². In addition to separating the animals in the case of pregnancy, diseases, breeding and any necessity to isolate elderly animals, the pens also serve to separate stallions from the remainder of the herd and to put animals out in harsh conditions in winter if they cannot enter into the main enclosure. The construction phase lasted 21 months, the overall impression is very positive ***(photo 3)***.

It is hoped that the breeding success in zebras as experienced at the old facility is going to continue with this new and modern housing. Conditions are indeed very good, but let the zebras to assess that themselves.

For comparison between the old stable and the new house see the table.

PARAMETER	OLD STABLE	NEW HOUSE
Facility area (m²)	154	309.5
Food preparation room (m²)	10	25
Indoor animal area (m²)	136	221.5
Staff room (m²)	6	18
No. of stalls	15	14
Stall (m²)	5.22–7.56	9.2
Indoor height (m)	2.2	2.4–4.1
Indoor area window surface (m²)	6.63	21.3
Store and toilet (m²)	None	8
Saw-dust store (m²)	Outside the building	9.5
Hay store (m²)	Outside the building (26)	29
Fodder beet store (m²)	None	4.6

Asian leaf turtles *(Cyclemys dentata)*: breeding and management

František Šubík

Freshwater species, members of the Geoemydidae family and the genus of *Cyclemys*, Asian leaf turtles feature rather rounded shells, a largely dark brown to black carapace with no significant pattern, the plastron being yellow or ochre with black rays on the scutes. The ends of the scutes along the perimeter boundary are pointed, which in the young is found almost throughout the carapace, whilst in adults it involves just a few back plates. The colouring of the head and limbs is too not very distinct, the head being spotted, neck and limbs featuring yellowish streaking, which is contrasting mainly in young turtles.

Sexual dimorphism is not apparent at first glance. Cases of females that grew into a bigger size than males are not a thumb of rule, so the only means of determining the gender is the thickened root of the tail and the sidecut of anal scutes, this being rather sharp in males and rounded as well as wider in females.

Adult size of individuals provided in references is up to 25 cm, sexual maturity being reached around year 7, but may occur earlier, this probably also depending on the respective individual's fitness. The turtle ranges throughout Southeast Asia, India, Burma, Malaysia, Indonesia, the Philippines and China, where they are found near shallow and slow-flowing streams, although they can be termed rather undergrowth animals than aquatic creatures. Their limbs are very strong and adapted for both swimming and staying on land in forest and undergrowth, which mainly applies to adults that spend significantly more time on the land buried in the substrate than in water. After all, their omnivorousness is also evidence of them activating both in and beyond the water.

In Ústí, Asian leaf turtles are held in an exhibit of 5 x 4 metres, where roughly a third of the area consists of a pool about 30 cm deep, with water temperature of 24°C ***(photo 1)***, whilst another part consists of sand and the remainder is covered with bark and densely planted with vegetation. Furthermore, there are a multitude of peat roots arranged, which serves both as decoration and as a hiding place for the turtles. The animals make use of these shelters for most of the day, activating mainly in the morning and evening, the latter also being when they take food. Along with the turtles, this exhibit contains 8 Chinese water dragons *(Physignathus cocincinus)* and a flock of about 15 zebra finches *(Taeniopygia guttata)*. The composition of the creatures seems to have been chosen appropriately since these species show essentially no competition or stress posed to each other and therefore all the groups kept here reproduce.

The turtles are fed two to three times per week with both plant and animal food (lettuce, cucumber, banana, worms, mice, chickens, muscle meat

and fish), with Vitamix for laying hens administered to balance vitamins and minerals, which is poured mainly on worms *(Zophobas morio)* and muscle meat.

Six young animals purchased from a private breeder in 1999 produced a group of 4.2 once they reached the adult age, the first offspring being reared in 2003 and the most recent arriving in 2011. In July 2003, six eggs were incidentally found by the keeper, all buried in the undergrowth, with five young turtles hatched after 49 days ***(photo 2)***. In September 2004, five eggs were found, none of them fertilised.

In July 2005, one of the females laid five eggs in the pot, with five young turtles hatched after 53 days. In November of that year a female keeper found a dropped egg that became spoiled during incubation.

Two clutches found in 2006 were suggesting that the other female must have been involved in laying eggs as well, the first series discovered in July in the pool with water due to which the entire clutch of four eggs was naturally useless and became spoiled. The other clutch found in the bark bedding seemed to be fine, with the first turtle being hatched 39 days after, followed by another eight days later, which however died after two days.

Another clutch was found in July 2007 buried in the bark and removed from the hatchery after three months of incubation, all the five eggs then opened and found to be spoiled.

Five eggs buried in the substrate (bark) were also found in June 2008. This clutch produced a single turtle being hatched after 72 days of incubation, with the remainder of four turning out to be spoiled after opened. In September of that year one more egg was found from which a young turtle hatched after 29 days.

In 2009, a clutch of five eggs (this time buried in the sand) was "successfully" trampled by the keeper when cleaning the inner side of the exhibit glass, one egg however remaining unbroken, with a turtle hatching 26 days after.

In August 2010, six eggs were found buried in the bark, this followed by four turtles hatched in October after 66 days of incubation and two last remaining eggs with no signs of development of the fetus found to be spoiled. Since one of the adult females died on 3 September, assigning the turtles born in 2011 the respective mother with just a single female remaining inside the exhibit.

In May 2011, one of the four turtles hatched earlier in October 2010 died, with five eggs found in June, all buried in the bark cover only in a small depth, these yielding five young turtles after 65-day incubation from 24 to 26 August ***(photo 3)***.

It can be concluded based on the data collected that our leaf turtles lay eggs from June to September and discovering any clutch immediately after being laid is quite difficult due to the hidden patterns of living and housing in a spacious exhibit. Therefore, the period of incubation, if artificial hatching is employed, depends on the stage development of the fetus inside the egg when these are found.

It is author's personal opinion that the average incubation period at 28°C in moist vermiculite and 100% humidity in the incubator is 60-70 days, with the incubation time in the hatchery being reduced if the female had chosen the right place for laying eggs so these can develop in a natural way before discovered.

All the data concerning clutches and turtles raised are shown in the following table:

Clutch	Clutch date	Total eggs	Unfertilised (broken eggs)	Hatching date	Total young	Died	Comment
1	22 Jul 2003	6	1	5 Oct 2003	5	0	First offspring; Ms Fraňková
2	10 Sep 2004	5	5	x	0	0	Unfertilised eggs
3	19 ul 2005	5	0	10 Sep 2005	5	0	Offspring at Prague Zoo
4	16 Jul 2006	4	4	x	0	0	Eggs found in water (spoiled)
5	22 Aug 2006	4	2	30 Sep and 8 Oct 2006	2	1	10 Oct 2006 1 dead egg, 2 spoiled eggs
6	3 Jul 2007	5	5	x	0	0	Removed from hatchery on 15 Oct - spoiled
7	20 Jun 2008	5	4	31 Aug 2008	1	0	The young one now in the collection
8	4 Sep 2008	1	0	3 Oct 2008	1	0	The young one now in the collection
9	9 Sep 2009	5	4	5 Oct 2009	1	0	1 egg trampled, others included in the collection
10	23 Aug 2010	6	2	28 Oct 2010	4	1	1 died on 5 May 2011, others in the collection
11	22 Jun 2011	5	0	25 Aug 2011	5	0	Now in the collection
	Total	51	27	Total	24	2	

Do we really hold the Asian leaf turtle?

Mgr Martina Kocábková

Initially, most of the *Cyclemys* genus turtles were classified as a single species, the Asian leaf turtle *(Cyclemys dentata)* described in 1831 by JE Gray, England, with possible existence of multiple species evidenced through significant morphological differences in addition to the wide range, since there are in fact two forms that differ by the colour that prevails on the plastron - the yellow-bellied and the dark-bellied type. Nonetheless, the genus was long thought to have been containing only a single to two species, the dark-bellied form being classified as *Cyclemys oldhamii*, sometimes also known as *Cyclemys tcheponensis.*

A significant change occurred in the genus' taxonomy in 1997, with even two new species detached from the yellow-bellied group - *Cyclemys pulchristriata*, described by the German team of biologists led by Uwe Fritz and *Cyclemys atripons*, described by McCord and Iverson, USA. Since discerning the two by morphological traits in a reliable manner is impossible, speculations were propagating that both teams had independently described the same species. However, the accuracy of the taxonomic splitting was re-confirmed in 2001 by Uwe Fritz and his team. In 1997, the two previously confused species of dark-bellied turtles were also validated based on morphology.

Another update arrived in 2002 with German scientists further elaborating the dark-bellied group using molecular genetics, recognising the existence of another two dark-bellied species, yet unnamed, in addition to *Cyclemys oldhamii* and *Cyclemys tcheponensis*, the latter known as *Cyclemys shanensis tcheponensis*.

The latest revision of the *Cyclemys genus* was published in 2008, again co-authored by Uwe Fritz and his team, this resulting in the names *Cyclemys oldhamii* and *Cyclemys shanensis* being merged to produce a single species *C. oldhamii* containing two populations distinguished from each other by the stripes present on the neck and in the temporal area. In addition, with three more new dark-bellied species removed and described based on extensive studies of molecular data, *Cyclemys enigmatica*, *Cyclemys fusca* and *Cyclemys gemeli*,

valid species of the *Cyclemys genus* now count seven, of which three are yellow-bellied *(C. dentata* (Asian leaf turtle), *C. atripons, C. pulchristriata)* and four are dark-bellied turtles *(C. oldhamii, C. enigmatica, C. fusca* and *C. gemeli)*. In terms of morphology, all the turtles are very similar and hard to discern without molecular analysis.

Keeping the *Cyclemys* genus in Ústí dates back to 1999 when the zoo

purchased a group of six animals from a private breeder, all of these being about one year old. The animals were imported from Jakarta, Indonesia, with however the exact location of the capture not known.

Despite all the animals ranked phenotypically amongst the yellow-bellied, splitting them into two groups was possible, with three animals being considerably darker and displaying thin radial lines on the plastron ***(photo 1)*** and the remainder showing a light yellow plastron with almost no patterns except for short thick lines observed in some places ***(photo 2)***. Such traits are indeed not enough to specify any taxonomic status, it is however likely that they were at least two separate species. The turtles were preliminarily identified as *Cyclemys dentata* and *Cyclemys pulchristriata*, with at least one fertile female and one to two males represented initially in each of the groups.

The first attempt at breeding took place in 2002, i.e. when the animals were four years approximately, with however none of the five eggs impregnated. Subsequently, at least one clutch was found by the team each year, with offspring successfully raised each season except 2004 and 2007.

Since mating takes place in water and the turtle will spend most of the day in crypsis, assigning any respective female a particular clutch with certainty is not possible. It is also not sure whether or not mating occurs between members of different colour groups. Although the offspring was mostly resembling the light-bellied group as regards phenotypes, juveniles of different species are difficult to discern from each other due to changes in the shell colour pattern during ontogeny.

The most earlier offspring, i.e. that produced in 2003 and 2005, has already left the collection, the very first purchased by a private breeder; according to the most recent photographs of the turtles, then four months old ***(photo 3)***, the animals were light yellow-bellied with spots and emerging strong radial lines on a yellow plastron. In 2005, two clutches were found within four months, making it therefore possible that both females became involved in the reproduction. Sadly, offspring was raised only from the first clutch, phenotypically resembling the individuals born in 2003, with the colour of their plastrons turning to slightly dark and the spots stretching to produce radial lines. Currently, these animals are at Prague Zoo and learning more about out their adult look would be certainly of interest.

Two clutches were found in 2006 as well, this time within a single month, with however only a single animal being raised. It is also the only one that looks similar to the zoo's group of darker turtles in terms of phenotype, with its distinctly darker plastron displaying thin symmetrical beams ***(photo 4)***.

The most recent twain of clutches was found in 2008 within a two month period, each producing a single animal. Both of the two feature yellow plastrons, one of them almost lacking any patterns, whilst the other is slightly darker and has only a few black lines along the plastron edges.

In 2009 and 2010, only a single clutch was laid per annum, with each of the young bearing the light-bellied group phenotype. Unfortunately, the dark-bellied female died two months after finding the most recent clutch, post-mortem examination discovering turtle's ovaries and oviducts degenerated to a large extent concluding that identifying this animal as mother of the offspring is not probable. Thus, the zoo was likely left with a last single breeding female for the subsequent season, one included in the light-bellied group, with the most

recent offspring hatched in August 2011 and bearing the phenotype of this animal, as expected.

Based on the above data, we are currently unable of classifying our turtles accurately in terms of taxonomy, and although most of the young turtles produced look very similar as regards the phenotype, detecting any interspecific hybrids using genetic analysis will be necessary, with subsequent splitting the initial breeding group to maintain the purity of the genetic lineage.

Reviewing the classification of the respective *Cyclemys* species under IUCN's Red List categories will also be necessary in the future, the system currently listing only *Cyclemys dentata* as a NT (Near Threatened) species, whilst CITES does not list the genus at all. The real threats relating to the respective species may however vary, since splitting the complex has resulted in the ranges of each species becoming considerably shrunk and it is known fact that species with a small range are more susceptible and vulnerable, which particularly applies to Southeast Asia, where the population of turtles has already been decimated to the great extent.

References

Fritz, U., Gaulke, M. & Lehr, E. (1997). Revision der südostasiatischen Dornschildkröten-Gattung *Cyclemys* Bell, 1834, mit Beschreibung einer neuen Art. *Salamandra*, 33, 183–212.

Fritz, U., Guicking, D., Wink, M. & Lehr, E. (2001). Sind *Cyclemys atripons* Iverson & McCord, 1997, und *Cyclemys pulchristriata* Fritz, Gaulke & Lehr, 1997, identisch? *Sauria, Berlin*, 23 (2): 33–38.

Fritz, U., Guicking, D., Auer, A., Sommer, R. S., Wink, M. & Hundsdörfer, A. K. (2008). Diversity of the Southeast Asian leaf turtle genus *Cyclemys*: how many leaves on its tree of life? *Zoologica Scripta*, 37, 367–390.

Guicking, D., Fritz, U., Wink, M. & Lehr, E. (2002). New data on the diversity of the Southeast Asian leaf turtle genus *Cyclemys* Bell, 1834. Molecular results. *Faunistische Abhandlungen*, 23, 75–86.

Iverson, J. B. & McCord, W. P. (1997). A new species of *Cyclemys* (Testudines: Bataguridae) from Southeast Asia. *Proceedings of the Biological Society of Washington*, 110, 629–639.

Stuart, B. L. & Fritz, U. (2008). Historical DNA from type museum specimens clarifies diversity of Asian leaf turtles (*Cyclemys*). *Biological Journal of the Linnean Society*, doi: 10.1111/j.1095-8312.2008.00966.x.

Dendrobates frogs: management review

Kateřina Czurillová

Called poison dart frogs, these fascinating creatures have been the focus of Ústí Zoo for many years. The naming results from the venom of some species being so much toxic that the South American natives use it to coat tips of their arrows when hunting for larger animals, the golden poison frog *(Phyllobates terribilis)* found in Colombia and measuring up to 5 cm considered to be amongst the species of the greatest toxicity. Since however these animals receive such a feature from the composition of local diet, there is no danger in captivity.

There are seven terrariums of different size ***(photo 1)*** in the visitor part of the Exotarium house that is dedicated to tropical frogs, with three of them containing *Dendrobates* species - the blue poison frog *(D. azureus)*, the yellow-banded dart frog *(D. leucomelas)* and the black poison dart frog *(D. auratus)*, in addition to spare breeding groups for the species listed above as well as several other frog species held out of scenes - *Dendrobates galactonotus*, the golfodulcean poison frog *(Phyllobates vittatus)* and the previously mentioned golden poison frog *(P. terribilis)* - ***photo 2***.

Above each terrarium there are two fluorescent tubes that keep the temperature at 24 - 25°C. The terrarium bottom is covered with gravel with no sharp edges that could injure the frog, this type of substrate retaining moisture in addition to the good cleaning possibilities. Shelters available include pieces of bark, coconut shells and plants (e.g. *Scindapsus*, as well as *Ficus* or spiderworts). A bowl is essential, with water exchanged on a daily basis (water left to stand is always used). For breeding, plastic boxes from photographic films are available for the lesser species, whilst the larger frogs can make use of Petri dishes covered with a coconut shell, or it is possible to provide both to enhance the choice.

Eggs are carefully collected and placed on a box lid and then kept wet, but any excess water due to overflowing must be avoided and the eggs have to be covered due to rapid evaporation. Tadpoles hatch within 9-10 days and are moved into plastic cases containing a number of smaller compartments (commonly used in workshops such as storing nails), ***photo 3***. In *D. azureus*, *D. leucomelas* and *D. auratus*, tadpoles are placed separately from each other, which is not just because of the threat of intraspecific cannibalism, but also due to individual competition, since more vigorous animals release substances inhibiting growth of the weaker siblings. These problems nonetheless do not occur in tadpoles of *Phyllobates terribilis* and *P. vittatus* that can be retained in the group situation.

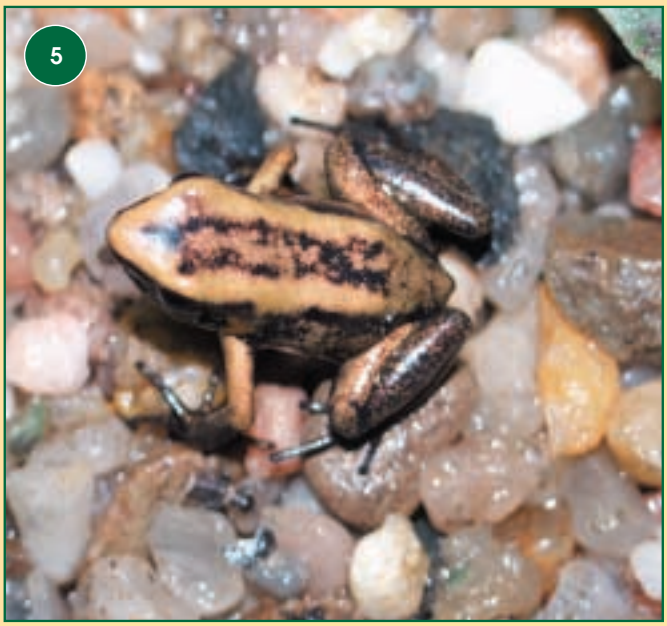
Over the first three to four days before tadpoles start eating, they are served water produced by leaching alder cones. The temperature should not rise to 26°C, otherwise there is a risk of moulds. As regards food, marine fish pellets have proved to work well, as recommended by Mr Doxanský from the Pilsen Zoo's AKVA-TERA (aquarium

and terrarium exhibit). They are a natural and highly nutritious product, allowing the tadpole to grow very well and maintain good health. After less than two months there is metamorphosis, which is the most sensitive period in the frog's life, with losses being very frequent. Once the tadpoles have developed their front limbs, the group is split and each individual placed separately in a smaller box with 1 mm of water. At this stage, food is not taken since the animal absorbs nutrients from its tail that becomes gradually shrunk, the process taking about a week. Then we move the tadpoles to small terrariums into which we place a piece of wet foam rubber, a shallow dish with water and a few plant leaves serving as a shelter. The quantity of plants should remain moderate in order to have an overview of the young ones, whilst these can find the food without troubles. They are fed in this stage with newly hatched crickets or Drosophila flies. All the food is poured with Dendrocare when served to supply vitamins.

In 2011, hatched tadpoles comprised *Dendrobates auratus* (25 individuals), *D. azureus* (11) - ***photo 4***, *D. leucomelas* (1), *Phyllobates terribilis* (4) - ***photo 5*** and *P. vittatus* (4). Clutches come on a periodical basis, but the staff is always looking to establish dormancy over the winter through less frequent dewing and more temperate feeding.

Breeding in the spring tends to be of a lesser success, with often just a third of the tadpoles being hatched or the entire clutch attacked and destroyed by moulds, whilst the May to July period represents one producing the most numerous clutches of the greatest vigour.

A worth-noting event was the group of *Phyllobates vittatus* producing an albino tadpole from time to time. Rearing any of these white individuals boasting two longitudinal stripes of golden colour however failed, with the first-ever animal dying before and the other two months after metamorphosis.



The Pesisir Balikpapan project update

Mgr Stanislav Lhota

Underway since 2007 under the auspices of Ústí nad Labem Zoo, the project aims to protect mangroves, coral reefs, underwater meadows and tropical rainforest in the Balikpapan Bay on the eastern coast of Kalimantan, its flagship species being the proboscis monkey *(Nasalis larvatus)*, it representing the forest ecosystems of the region, and the Irrawaddy dolphin *(Orcaella brevirostris)* as regards the marine ecosystem.

The sub-activity of monitoring and reporting illegal and legal activities that damage the local ecosystems achieved essential progress in 2011 in that it was gaining more independence. This involves a team of local project assistants travelling on a monthly basis throughout the coast and each of the navigable rivers using a small fishing boat ***(photo 1)***, checking for any new cases of logging, charcoal burning, founding or restoring fish and shrimp breeding reservoirs, constructing ports and other industrial facilities, establishing and expanding oil palm plantations, polluting rivers with industrial waste and so on and reporting any observed activity to the responsible authorities of the region residing in Balikpapan and Penajam. Operating with success for three years, the programme was an informal activity though, but with founding Forum Masyarakat Peduli Lingkungan in 2011, a local civic association, the monitoring scheme is now underway under the auspices of this entity. Active people however not comprised just members of the association. Indeed, the residents of local villages (fishermen, farmers and staff of the local timber industry) became involved, thus receiving the opportunity to observe directly the causes of habitat degradation, particularly the declining production of fish, the reporting of the case of PT AKK, a coal company seeking to open a mine on the site of a single water source for thousands of local residents causing the greatest concern of the local government and mass media ***(photo 2)***. The association managed to organise a protest lasting several months, with several dozen villagers actively participating in the activity through demonstrations and negotiations with the local government. Even though the efforts did not met any success and the local government eventually failed to reject the mining permit, the case yet brought about intense environmental concerns at the level of both government officials and local citizens. In addition, this resulted in three similar civic associations being founded or revived within a few weeks.

Another effort of the new civic association, one that so far has been successful, involves prevention in restoring abandoned reservoirs for breeding fish and shrimp. The vast majority of similar attempts in the past failed, resulting, in addition to the owner of the pond falling in debts, in the destruction of mangroves in which the ponds are being set up, and the accompanying decline in the production of fish and shrimp in rivers and seas. Although shrimp and fish culture is no longer considered to be cost-effective, in addition to being environmentally unsustainable, yet every year several investors sought to establish additional ponds. Over the most recent year, however, the

local authorities were convinced to cease issuing permits, this concerning not just new ponds, but also the existing abandoned reservoirs being restored, thus no new pond has been established since 2007, the existing areas gradually regenerating and becoming overgrown with mangroves.

Another important case involved Wilmar, a transnational company. Funding the construction of the palm oil depot and processing plant in the Balikpapan Bay has placed this corporation one amongst the biggest devastators of the bay's ecosystem, probably without the top management being even aware. The team was approached the last year by the company's management in connection with the report we send every year as a basis for periodical meetings of RSPO (Roundtable on Sustainable Palm Oil), it presenting data concerning the conduct of palm oil companies in the bay with respect to the environment and the needs of local communities. As a follow-up, Wilmar sent their inspectors to the bay who recognised the severity of the problem and suspended any further construction in the region. Although discussions are now underway about what direction the project should take, the possibility for any real change still remains a question, this becoming evident by the case of another palm oil company, PT Agro Indomas. Illegal planting palm oil trees along several tens of kilometres of river banks committed by this corporation have shown how promises and obligations of some companies may be false. PT Agro Indomas pledged several years ago to ensure regeneration of the primary forest along the river banks, which should have included the removal of palms, tree planting and prohibited use of herbicides along rivers, with however any real action lagging behind for more than two years.

Since the European Union, including the Czech Republic, is currently the third largest consumer of palm oil, the team participated in producing a documentary film to make the Czech public aware of the issue. Named Green Plague, it was created by Michal Gálik, a student at the Faculty of Science to the Charles University, Prague. Shooting took place in three locations: in the Balikpapan Bay, on Mahakam Lakes and around the Wehea reserve. The documentary outlines many issues, such as destruction of primary rainforests ***(photo 3)***, conflicts over land with local peasants, disruption of water regimes (periodic flooding and declined groundwater level), pollution of rivers (the decline in fish production and serious health problems in

villages along the river banks), killing of orangutans and other wildlife and many others.

Planning is underway to found another non-government organisation, this to aim at soft campaigning, education, outdoor recreation and ecotourism, the primary objective being to ensure that as many residents of Balikpapan as possible receive the opportunity to meet the virgin natural systems that still survive in the immediate vicinity of the town, thereby increasing the interest of the general public in conservation. The scheme that has now commenced includes watching proboscis monkeys, Irrawaddy dolphins, primary mangroves and other attractions of the natural world. The camp by the River Pemaluan that is no longer in use for research is now being redesigned for the purpose of campaigning and ecotourism, whilst completing the restoration of a wooden hut located in mangrove stands near Gersik, one to serve for providing accommodation as well as a field office, in addition to being used for campaigns and informal meetings ***(photo 4)***.

In addition to the two rather small associations mentioned above, the team also very recently founded a large open community. Called Peduli Teluk Balikpapan, it incorporates mainly students of several local universities and other members of youth from Balikpapan and Samarinda. Focusing on large-scale public campaigns promoting the Balikpapan Bay like demonstrations, media campaigns, musical shows and petitioning, it also aims at maximum involvement of local students into the research activities that are underway in the territory, these including monitoring of sedimentation, water quality and content of toxins in the fish meat, whilst planning a documentary film about the bay.

Two biggest threats to the future of the region comprise the planned construction of a provincial speedway along the bay (the Jembatan Pulau Balanga project) and the contemplated change of the zoning plan, with the entire western coast of Balikpapan (now largely wooded and partially protected) to turn into an industrial zone (Kawasan Industri Kariangau). Lobbying to stop the two activities is now underway at the level of the central government in Jakarta. The team has contacted the national parliament, the president's office and several ministries in this regard, representatives of the central government visiting the very site for the second time. Currently, intensive negotiations are in progress behind closed doors.

In addition to the conservation work being conducted in the Balikpapan Bay, the team members also launched research activities on another site in East Kalimantan, the planned Wehea reserve ***(photo 5)***. Research on the diversity of mammals in the territory resulted in the Miller's grizzled langur (Presbytis hosei canicrus) being rediscovered, a subspecies declared possibly extinct several years ago. Published in American Journal of Primatology, this achievement yielded considerable response worldwide.

During the year, three technical publications were produced that relate to our research activities in Borneo, one of which already published in 2011 and two more to follow in January 2012:

- Dolný, A., Bárta, D., Lhota, S., Rusdianto and Drozd, P.: Dragonflies (*Odonata*) in the Bornean rain forest as indicators of changes in biodiversity resulting from forest modification and destruction. Tropical Zoology, 24: 63–86, 2011

- Lhota, S., Loken, B., Spehar, S., Fell, E., Pospěch, A. and Kasyanto, N.: Discovery of Miller's Grizzled Langur (*Presbytis hosei canicrus*) in Wehea Forest Confirms the Continued Existence and Extends Known Geographical Range of an Endangered Primate. American Journal of Primatology, 74: 193–198, 2012

- Stark, D., Nijman, V., Lhota, S., Robins, J. G., Goossens, B.: Modeling population viability of local proboscis monkey *Nasalis larvatus* populations: conservation implications. Endangered Species Research 16: 31–43, 2012

Stock list as per 31/12/2011

	State in 1/1/2011	Birth	Arrival	Death	Departure	State in 31/12/2011
Mammals *(Mammalia)*						
Addax	**2.0**					**2.0**
Addax nasomaculatus	EEP,ISB,RDB=CR,CITES=I					
Alpaca	**3.12**	**2.2.1**		**1,0**	**1.2**	**3.12.1**
Vicugna pacos						
Amur Leopard	**1.1**	**0.2**				**1.3**
Panthera pardus orientalis	*EEP,ISB,RDB=CR,CITES=I*					
Angola Lion	**1.2**				**0.1**	**1.1**
Panthera leo bleyenberghi	*RDB=VU*					
Banded Mongoose	**1.3**			**1.3**		
Mungos mungo	*RDB=LR*					
Baringo Giraffe	**2.4**					**2.4**
Giraffa camelopardalis rothschildi	*EEP,RDB=EN*					
Bengal Elephant	**0.2**					**0.2**
Elephas maximus bengalensis	*EEP,RDB=EN,CITES=I*					
Black and White Ruffed Lemur	**5.1**				**1.0**	**4.1**
Varecia variegata	*EEP,ISB,RDB=CR,CITES=I*					
Blackbuck	**4.4**	**2.2**		**2.1**		**4.5**
Antilope cervicapra	*RDB=NT*					
Blue Monkey	**1.1**					**1.1**
Cercopithecus mitis	*RDB=LR*					
Bonnet Macaque	**2.3**					**2.3**
Macaca radiata	*RDB=LR*					
Bornean Orangutan	**2.1**	**0.1**				**2.2**
Pongo pygmaeus	*EEP,ISB,RDB=EN,CITES=I*					
Brazilian Tapir	**1.2**					**1.2**
Tapirus terrestris	*EEP,RDB=VU*					
Californian Sea Lion	**1.0**					**1.0**
Zalophus californianus	*ESB,RDB=LR*					
Central American Agouti	**0.1**					**0.1**
Dasyprocta punctata	*RDB=LR*					
Clouded Leopard	**1.1**	**2.1**				**3.2**
Pardofelis nebulosa	*EEP,ISB,RDB=VU,CITES=I*					
Collared Peccary	**1.2**			**1.0**		**0.2**
Pecari tajacu	*RDB=LR*					
Cotton-top Tamarin	**3.1.1**	**0.0.1**		**1.0**		**2.1.2**
Saguinus oedipus	*EEP,ISB,RDB=CR,CITES=I*					
De Brazza´s Monkey	**3.2**	**0.1**			**1.0**	**2.3**
Cercopithecus neglectus	*ESB,RDB=LR*					
Defassa Waterbuck	**1.4**			**0.1**		**1.3**
Kobus ellipsiprymnus defassa	*RDB=NT*					

	State in 1/1/2011	Birth	Arrival	Death	Departure	State in 31/12/2011
Mammals *(Mammalia)*						
Diana Monkey	**1.1**			**1.1**		
Cercopithecus diana diana	*EEP,ISB,RDB=VU,CITES=I*					
Domestic Bactrian Camel	**3.6**	**1.0**		**1.0**	**2.1**	**1.5**
Camelus bactrianus	*RDB=CR*					
Domestic Dog	**0.1**					**0.1**
Canis familiaris						
Domestic Goat	**0.1**					**0.1**
Capra hircus						
Domestic Sheep	**1.8**	**7.5**		**0.1**	**6.0**	**2.12**
Ovis aries aries						
Domestic Sheep	**2.0**		**0.3**		**1.0**	**1.3**
Ovis aries aries						
Eastern Pygmy Marmoset	**5.4**	**0.2.3**	**1.0**	**1.0**	**0.1**	**5.5.3**
Callithrix pygmaea niveiventris	*RDB=LC*					
Fishing Cat	**2.3**				**1.0**	**1.3**
Prionailurus viverrinus	*EEP,ISB,RDB=EN*					
Fosa	**1.0**				**1.0**	
Cryptoprocta ferox	*EEP,ISB,RDB=VU*					
Geoffroy´s Cat	**1.0**					**1.0**
Oncifelis geoffroyi	*EEP,RDB=NT,CITES=I*					
Golden Lion Tamarin	**1.2**	**0.0.2**				**1.2.2**
Leontopithecus rosalia	*EEP,ISB,RDB=EN,CITES=I*					
Guanaco	**0.2**					**0.2**
Lama guanicoe	*RDB=LR*					
Guianan Saki			**2.0**			**2.0**
Pithecia pithecia	*EEP,RDB=LC*					
Harbour Seal	**1.1**					**1.1**
Phoca vitulina	*RDB=LR*					
Hartmann´s Mountain Zebra	**3.8**			**1.0**		**2.8**
Equus zebra hartmannae	*EEP,ISB,RDB=VU*					
Cheetah	**2.0**		**1.0**		**1.0**	**2.0**
Acinonyx jubatus	*EEP,ISB,RDB=VU,CITES=I*					
Japanese Serow	**0.1**					**0.1**
Naemorhedus crispus	*ESB,ISB,RDB=LR*					
Javan Langur	**1.3**			**1.0**		**0.3**
Trachypithecus auratus	*RDB=VU*					
Kafue Lechwe	**2.5**	**0.1.1**			**1.3**	**1.3.1**
Kobus leche kafuensis	*ISB,RDB=VU*					
Kilimanjaro Colobus	**0.4**		**1.0**	**0.1**		**1.3**
Colobus guereza caudatus	*ESB,RDB=LR*					
Llama	**1.2**	**1.0**			**1.0**	**1.2**
Lama glama						
Lowland Anoa	**2.2**					**2.2**
Bubalus depressicornis	*EEP,ISB,RDB=EN,CITES=I*					
Malayan tiger	**0.1**					**0.1**
Panthera tigris jacksonii	*ISB,RDB=EN,CITES=I*					

	State in 1/1/2011	Birth	Arrival	Death	Departure	State in 31/12/2011
Mammals *(Mammalia)*						
Mandrill	**2.6**	**1.2**		**0.1**		**3.7**
Mandrillus sphinx	*EEP,RDB=VU,CITES=I*					
Maned Wolf	**1.1**					**1.1**
Chrysocyon brachyurus	*EEP,ISB,RDB=NT*					
Meerkat	**1.3**					**1.3**
Suricata suricatta	*RDB=LR*					
Nilgai	**2.3**	**2.2**			**1.2**	**3.3**
Boselaphus tragocamelus	*RDB=LC*					
Northern White-cheeked Gibbon	**2.2**					**2.2**
Nomascus leucogenys leucogenys	*EEP,ISB,RDB=CR,CITES=I*					
Orangutan	**1.0**					**1.0**
Pongo sp.	*EEP,ISB,RDB=EN,CITES=I*					
Oriental Small-clawed Otter	**3.1**	**0.3**	**0.1**		**2.3**	**1.2**
Amblonyx cinerea	*ISB,RDB=VU*					
Patagonian Mara	**2.1**	**2.2**			**2.1**	**2.2**
Dolichotis patagonum	*RDB=NT*					
Pony	**2.3**	**1.1**			**2.0**	**1.4**
Equus caballus						
Prevost´s Squirrel	**1.1**			**0.1**		**1.0**
Callosciurus prevostii	*RDB=LR*					
Red Panda	**1.1**					**1.1**
Ailurus fulgens fulgens	*EEP,ISB,RDB=VU,CITES=I*					
Red Ruffed Lemur	**3.0**				**2.0**	**1.0**
Varecia rubra	*EEP,ISB,RDB=EN,CITES=I*					
Red-handed Tamarin	**3.0**				**1.0**	**2.0**
Saguinus midas	*ESB,RDB=LC*					
Red-chested Moustached Tamarin	**1.1**	**0.0.2**				**1.1.2**
Saguinus labiatus	*ESB,RDB=LC*					
Reeves´ Muntjac	**1.2**	**1.1**			**0.1**	**2.2**
Muntiacus reevesi reevesi	*RDB=LR*					
Ring-tailed Lemur	**2.4**	**2.1**			**1.0**	**3.5**
Lemur catta	*ESB,RDB=NT,CITES=I*					
Silvered Leaf Monkey	**0.2**					**0.2**
Trachypithecus cristatus	*RDB=NT*					
Snow Leopard	**1.1**	**1.0**				**2.1**
Uncia uncia	*EEP,ISB,RDB=EN,CITES=I*					
Somali Wild Ass	**2.5**	**1.0**	**0.1**		**0.2**	**3.4**
Equus africanus somalicus	*EEP,ISB,RDB=CR,CITES=I*					
South American Coati	**3.2**					**3.2**
Nasua nasua	*RDB=LR*					
Southern Two-toed Sloth	**1.3**	**0.0.1**			**0.1**	**1.2.1**
Choloepus didactylus	*ESB,RDB=LC*					
Southern White Rhinoceros	**0.1**					**0.1**
Ceratotherium simum simum	*EEP,ISB,RDB=NT*					
Sun Bear	**2.4**	**0.1**				**2.5**
Helarctos malayanus	*ESB,RDB=VU,CITES=I*					

	State in 1/1/2011	Birth	Arrival	Death	Departure	State in 31/12/2011
Mammals *(Mammalia)*						
Thorold´s Deer	**3.8**			**0.1**	**1.0**	**2.7**
Cervus albirostris	*RDB=VU*					
Variable Flying Fox	**2.3**				**1.0**	**1.3**
Pteropus hypomelanus	*RDB=LR*					
Vietnamese Sika Deer	**2.7**	**1.2**		**0.1**		**3.8**
Cervus nippon pseudaxis	*EEP,ISB,RDB=LC*					
Western Hedgehog	**0.0.24**		**0.0.22**	**0.0.6**	**0.0.18**	**0.0.22**
Erinaceus europaeus	*RDB=LR*					
Wolverine	**1.1**					**1.1**
Gulo gulo sibirica	*EEP,RDB=LC*					

	State in 1/1/2011	Birth	Arrival	Death	Departure	State in 31/12/2011
Birds (Aves)						
Blue-and-yellow Macaw	**3.7**	**0.0.2**			**2.4**	**1.3.2**
Ara ararauna	*RDB=LC*					
Blue-fronted Amazon	**0.0.1**					**0.0.1**
Amazona aestiva	*RDB=LC*					
Budgerigar	**0.0.85**	**0.0.38**		**0.0.8**	**0.0.87**	**0.0.28**
Melopsittacus undulatus	*RDB=LC*					
California Quail	**2.1**			**1.0**		**1.1**
Lophortyx californica	*RDB=LC*					
Cockatiel	**1.1**	**0.0.2**			**0.0.2**	**1.1**
Nymphicus hollandicus	*RDB=LC*					
Common Barn-owl	**1.1**					**1.1**
Tyto alba	CROH=SOH,RDB=LC					
Common Kestrel			**0.0.1**			**0.0.1**
Falco tinnunculus	*RDB=LC*					
Common Moorhen	**0.0.3**				**0.0.3**	
Gallinula chloropus	*RDB=LC*					
Crested Pigeon	**1.1**					**1.1**
Ocyphaps lophotes	*RDB=LC*					
Crested Wood-partridge			**2.2**			**2.2**
Rollulus rouloul	*RDB=NT*					
Demoiselle Crane	**1.1**					**1.1**
Anthropoides virgo	*RDB=LC*					
Emerald Dove	**1.1**				**1.1**	
Chalcophaps indica indica	*RDB=LC*					
Emu	**1.1**					**1.1**
Dromaius novaehollandiae	*RDB=LC*					
Eurasian Eagle-Owl	**1.1**					**1.1**
Bubo bubo	*CROH=OH,RDB=LC*					
Ferruginous Duck			**2.2**			**2.2**
Aythya nyroca	*CROH=KOH,RDB=NT*					
Great Currassow	**1.1**				**1.1**	
Crax rubra	*RDB=VU*					
Greater Rhea	**3.2**	**0.0.5**		**1.1**	**0.0.3**	**2.1.2**
Rhea americana	*RDB=NT*					
Grey Parrot	**1.1**	**1.0.1**			**1.0.1**	**1.1**
Psittacus erithacus	*RDB=NT*					
Helmeted Guineafowl	**0.0.5**				**0.0.3**	**0.0.2**
Numida meleagris	*RDB=LC*					
Himalayan Griffon	**1.1**					**1.1**
Gyps himalayensis	*RDB=LC*					
Indian Peafowl	**2.8**	**0.0.6**		**0.3**	**0.0.2**	**2.5.4**
Pavo cristatus	*RDB=LC*					
Little Owl	**1.1**					**1.1**
Athene noctua	*CROH=SOH,RDB=LC*					
Mandarin Duck	**3.0**		**0.1.5**	**2.0**		**1.1.5**
Aix galericulata	*RDB=LC*					

	State in 1/1/2011	Birth	Arrival	Death	Departure	State in 31/12/2011
Birds (Aves)						
Marabou	**1.0**					**1.0**
Leptoptilos crumeniferus	*ESB,RDB=LC*					
Mealy Amazon	**1.1**	**1.1**				**2.2**
Amazona farinosa	*RDB=LC*					
Military Macaw	**4.4**	**0.0.4**			**1.1**	**3.3.4**
Ara militaris	*ISB,RDB=VU,CITES=I*					
Northern Long-eared Owl			**0.0.1**			**0.0.1**
Asio otus	*RDB=LC*					
Orange-winged Amazon	**1.1**			**1.0**	**0.1**	
Amazona amazonica	*RDB=LC*					
Raven	**1.1**					**1.1**
Corvus corax	*CROH=OH,RDB=LC*					
Red-and-green Macaw	**2.2**				**0.1**	**2.1**
Ara chloroptera	*RDB=LC*					
Red-fronted Macaw			**0.1**			**0.1**
Ara rubrogenys	*EEP,RDB=EN,CITES=I*					
Red-fronted Parrot	**2.1**	**0.2**			**2.3**	
Poicephalus gulielmi	*RDB=LC*					
Red-lored Amazon	**1.1**				**1.1**	
Amazona autumnalis	*RDB=LC*					
Rose-ringed Parakeet	**1.1**					**1.1**
Psittacula krameri	*RDB=LC*					
Rothschild´s Mynah	**1.1**					**1.1**
Leucopsar rothschildi	*EEP,RDB=CR,CITES=I*					
Saker Falcon	**1.1**	**0.0.1**			**0.0.1**	**1.1**
Falco cherrug	*CROH=KOH,RDB=VU*					
Salmon-crested Cockatoo	**2.1**					**2.1**
Cacatua moluccensis	*EEP,RDB=VU,CITES=I*					
Scarlet Macaw	**1.1**					**1.1**
Ara macao	*RDB=LC,CITES=I*					
Silver Teal			**1.2**	**1.0**		**0.2**
Anas versicolor	*RDB=LC*					
Smew			**1.1**			**1.1**
Mergus albellus	*RDB=LC*					
Snowy Owl	**2.1**	**0.3**	**0.1**	**0.1**	**1.1**	**1.3**
Nyctea scandiaca	*RDB=LC*					
Southern Ground-Hornbill	**1.1**					**1.1**
Bucorvus leadbeateri	*ESB,RDB=VU*					
Spot-sided Finch	**1.2.7**	**0.0.8**			**0.0.2**	**1.2.13**
Taeniopygia guttata	*RDB=LC*					
Sun Parakeet	**2.1**				**1.0**	**1.1**
Aratinga solstitialis	*RDB=EN*					
Tawny Owl	**0.0.1**					**0.0.1**
Strix aluco	*RDB=LC*					
Ural Owl	**1.1**	**0.1**			**0.1**	**1.1**
Strix uralensis liturata	*CROH=KOH,RDB=LC*					

	State in 1/1/2011	Birth	Arrival	Death	Departure	State in 31/12/2011
Birds (Aves)						
Victoria Crowned-Pigeon	**1.1**					**1.1**
Goura victoria	*ESB,ISB,RDB=VU*					
Violet Turaco	**2.1**	**0.1**			**1.1**	**1.1**
Musophaga violacea	*ESB,RDB=LC*					
White-faced Whistling-Duck	**1.2**					**1.2**
Dendrocygna viduata	*RDB=LC*					
Wrinkled Hornbill	**3.2**	**1.2**		**0.1**	**1.0**	**3.3**
Aceros corrugatus	*EEP,RDB=NT*					
Yellow-bibbed Lory	**2.2**			**1.0**		**1.2**
Lorius chlorocercus	*RDB=LC*					

	State in 1/1/2011	Birth	Arrival	Death	Departure	State in 31/12/2011
Reptiles *(Reptilia)*						
Pond slider	**3.7**		**0.0.2**		**3.7**	**0.0.2**
Trachemys scripta	*RDB=LR*					
Blue-tailed monitor			**1.2**			**1.2**
Varanus doreanus						
African Rock Python	**0.1**			**0.1**		
Python sebae						
African Spiny-tailed Lizard	**3.7**				**1.0**	**2.7**
Uromastyx acanthinura						
African Spurred Tortoise	**0.0.3**					**0.0.3**
Centrochelys sulcata	*RDB=VU*					
American Alligator	**1.0**					**1.0**
Alligator mississippiensis	*RDB=LR*					
Annam Leaf Turtle			**0.0.6**	**0.0.1**		**0.0.5**
Mauremys annamensis	*RDB=CR*					
Asian Leaf Turtle	**2.0**					**2.0**
Cyclemys dentata	*RDB=LR*					
Ball Python	**1.1**	**0.0.1**			**0.0.1**	**1.1**
Python regius	*RDB=LC*					
Black Marsh Turtle	**0.1**					**0.1**
Siebenrockiella crassicollis	*ESB,RDB=VU*					
Black-bridged Leaf Turtle	**1.2.8**	**0.0.5**		**0.0.1**		**1.2.12**
Cyclemys pulchristriata						
Boa Constrictor	**0.1**					**0.1**
Boa constrictor						
Burmese Python	**1.0**					**1.0**
Python bivittatus	*RDB=LR*					
California Kingsnake	**1.2**	**0.0.10**		**1.0**	**0.0.10**	**0.2**
Lampropeltis getula californiae	*RDB=LC*					
Central Asian tortoise	**4.1**		**0.1**			**4.2**
Testudo horsfieldii	*RDB=VU*					
Common Snake-necked Turtle	**1.0**				**1.0**	
Chelodina longicollis						
Cuban Boa	**1.0**					**1.0**
Epicrates angulifer	*EEP,RDB=LR*					
Cuban Iguana	**1.2**					**1.2**
Cyclura nubila nubila	*ISB,RDB=VU,CITES=I*					
Eastern Kingsnake	**1.0**			**1.0**		
Lampropeltis getula getula	*RDB=LC*					
Eurasian Pond Turtle	**0.0.1**					**0.0.1**
Mauremys rivulata						
Fly River turtle	**2.0**					**2.0**
Carettochelys insculpta	*RDB=VU*					
Green Tree Python	**0.1**					**0.1**
Morelia viridis	*RDB=LC*					
Greer's Kingsnake	**1.1**					**1.1**
Lampropeltis mexicana greeri	*RDB=LC*					

	State in 1/1/2011	Birth	Arrival	Death	Departure	State in 31/12/2011
Reptiles *(Reptilia)*						
Grey-banded King Snake	**1.1**					**1.1**
Lampropeltis alterna	*RDB=LC*					
Hermann´s Tortoise	**0.1.2**				**0.0.1**	**0.1.1**
Testudo hermanni	*RDB=NT*					
Honduran Milk Snake	**1.2**			**0.1**		**1.1**
Lampropeltis triangulum hondurensis						
Horn´s Monitor	**1.0**					**1.0**
Varanus panoptes horni						
Chinese Softshell Turtle	**0.0.1**					**0.0.1**
Pelodiscus sinensis	*RDB=VU*					
Inland Bearded Dragon	**1.2**	**0.0.10**			**0.0.10**	**1.2**
Pogona vitticeps						
Knight Anole	**1.1.1**			**0.0.1**		**1.1**
Anolis equestris						
Leopard Gecko			**0.0.4**			**0.0.4**
Eublepharis macularius						
Madagascar Giant Day Gecko	**1.1.1**	**0.0.1**			**0.0.2**	**1.1**
Phelsuma madagascariensis	*RDB=LC*					
Marginated Tortoise	**1.0**			**1.0**		
Testudo marginata	*RDB=LR*					
Northern Chuckwalla	**1.2**		**1.0**	**2.0**		**0.2**
Sauromalus obesus	*RDB=LC*					
Oriental Water Dragon	**0.0.8**	**0.0.4**			**0.0.4**	**0.0.8**
Physignathus cocincinus						
Ouachita Map Turtle	**0.0.1**					**0.0.1**
Graptemys ouachitensis						
Panther Chameleon	**1.0**		**1.1**	**1.0**		**1.1**
Furcifer pardalis						
Red-bellied short-necked turtle	**0.0.2**					**0.0.2**
Emydura subglobosa	*RDB=LR*					
Schneider´s Skink	**1.0.2**			**1.0**		**0.0.2**
Eumeces schneideri						
Siebenrock´s Snake-necked Turtle	**2.0.1**					**2.0.1**
Macrochelodina rugosa						
Sinaloan Milk Snake	**2.2**	**0.0.10**				**2.2.10**
Lampropeltis triangulum sinaloae						
Smooth-fronted Caiman	**1.1**					**1.1**
Paleosuchus trigonatus	*RDB=LR*					
South American Red-footed Tortoise	**6.6.2**	**0.0.8**			**0.0.8**	**6.6.2**
Chelonoidis carbonaria						
Southeast Asian Box Turtle	**3.0**					**3.0**
Cuora amboinensis	*ESB,RDB=VU*					

	State in 31/12/2011	Birth
Amphibians (*Amphibia*)		
Aplash-backed Poison-arrow Frog	**0.0.1**	
Dendrobates galactonotus	*RDB=LC*	
Argentine Common Toad	**0.0.4**	
Bufo arenarum	*RDB=LC*	
Blue Poison-arrow Frog	**0.0.11**	**6**
Dendrobates azureus	*RDB=LC*	
Golden Poison Frog	**0.0.3**	**4**
Phyllobates terribilis	*RDB=EN*	
Golfodulcean Poison-arrow Frog	**0.0.4**	**4**
Phyllobates vittatus	*RDB=EN*	
Green And Golden Poison-arrow Frog	**0.0.32**	**15**
Dendrobates auratus	*RDB=LC*	
Java Whipping Frog		
Polypedates leucomystax	*RDB=LC*	
Malayan Bullfrog	**0.0.1**	
Kaloula pulchra	*RDB=LC*	
Mission Golden-eyed Trefrog	**0.0.8**	
Phrynohyas resinifictrix	*RDB=LC*	
Orange-legged Leaf Frog	**0.0.3**	
Phyllomedusa hypochondrialis	*RDB=LC*	
Ribbed Newt	**0.0.11**	
Pleurodeles waltl	*RDB=NT*	
Sambava Tomato Frog	**0.0.10**	
Dyscophus guineti	*RDB=LC*	
Smooth Clawed Frog	**1.1.9**	
Xenopus laevis laevis	*RDB=LC*	
Taylor‘s bug-eyed frog		
Theloderma stellatum	*RDB=NT*	
Tschudi´s African Bullfrog	**0.1.8**	
Pyxicephalus adspersus	*RDB=LC*	
White´s Treefrog	**0.0.12**	
Pelodryas caerulea		
Yellow-banded Poison-arrow Frog	**0.0.12**	**1**
Dendrobates leucomelas	*RDB=LC*	
Yucatecan Shovel-headed Treefrog	**0.0.3**	
Triprion petasatus	*RDB=LC*	

	State in 31/12/2011	Birth
Fish *(Pisces)*		
African Butter Catfish	**0.0.2**	
Schilbe mystus	RDB=LC	
Angelfish	**0.0.2**	
Pterophyllum scalare		
Bristlenose catfish	**0.0.22**	
Ancistrus cirrhosus		
Bronze Cory	**0.0.7**	
Corydoras aeneus		
Carptooth catfish	**0.0.3**	
Clarias gariepinus		
Clown Loach	**0.0.4**	
Botia macracantha		
Featherfin Squeaker	**0.0.13**	
Synodontis eupterus	*RDB=LC*	
Giant Gourami	**0.0.3**	
Osphronemus goramy		
Golden mbuna	**0.0.6**	**1**
Melanochromis auratus	*RDB=LC*	
Goldfish	**0.0.48**	
Carassius auratus		
Harlequin Rasbora	**0.0.7**	
Trigonostigma heteromorpha		
Cherry Barb	**0.0.7**	
Puntius titteya	*RDB=LR*	
Iridescent Shark	**0.0.8**	
Pangasius hypophthalmus		
Iridscent Mystus Cat	**0.0.1**	
Mystus vittatus	*RDB=LC*	
Kennyi mbuna	**0.0.10**	**5**
Metriaclima lombardoi		
Kingsley´s Ctenopoma	**0.0.4**	
Ctenopoma kingsleyae	*RDB=LC*	
Knifefish	**0.0.9**	
Xenomystus sp.		
Lemon Tetra	**0.0.6**	
Hyphessobrycon pulchripinnis	*RDB=LC*	
Maylandia	**0.0.16**	**10**
Pseudotropheus zebra		
Red Bellied Piranha	**0.0.3**	
Pygocentrus nattereri		
Red Hook Myleus	**0.0.4**	
Myloplus rubripinnis		
Red Pacu	**0.0.2**	
Piaractus brachypomus		
Redfin Shark	**0.0.11**	
Epalzeorhynchos frenatum		

	State in 31/12/2011	Birth
Fish *(Pisces)*		
Serpae Tetra	**0.0.6**	
Hyphessobrycon eques		
Siberian Sturgeon	**0.0.1**	
Acipenser baerii	*RDB=EN*	
Spotted Hoplo	**0.0.4**	
Megalechis thoracata		
Spotted sailfin pleco	**0.0.3**	**3**
Glyptoperichthys gibbiceps		
Spotted talking catfish	**0.0.6**	
Agamyxis pectinifrons		
Sterlet	**0.0.3**	
Acipenser ruthenus	*RDB=VU*	
Stinging Catfish	**0.0.5**	
Heteropneustes fossilis	*RDB=LC*	
Tiger Botia Loach	**0.0.1**	
Botia hymenophysa		
Tinfoil Barb	**0.0.5**	
Barbodes schwanenfeldii		
White Skirt Tetra	**0.0.4**	
Gymnocorymbus ternetzi		
Yoyo Loach	**0.0.5**	
Botia almorhae	*RDB=LC*	

	State in 31/12/2011	Birth
Invertebrates (*Invertebrata*)		
	0.0.1	
Brachypelma albopilosum		
	0.0.1	
Brachypelma auratum		
	0.0.6	
Pandinus imperator		

Animal census 2011	1 January 2011		31 December 2011	
	Species	Individuals	Species	Individuals
Mammals *(Mammalia)*	70	302	68	309
Birds *(Aves)*	44	220	45	169
Reptiles *(Reptilia)*	42	128	41	136
Ambhibians *(Amphibia)*	17	138	18	96
Fish *(Pisces)*	34	241	27	214
Invertebrates *(Invertebrata)*	3	8	8	28
Total	210	1037	207	952

Animals reared

Mammals	Birth
Mammalia	
Blackbuck	**1.2**
Antilope cervicapra	
Oriental Small-clawed Otter	**0.3**
Amblonyx cinerea	
Nilgai	**2.2**
Boselaphus tragocamelus	
Eastern Pygmy Marmoset	**0.2.3**
Callithrix pygmaea niveiventris	
Patagonian Mara	**2.2**
Dolichotis patagonum	
Domestic Bactrian Camel	**1.0**
Camelus bactrianus	
De Brazza´s Monkey	**0.1**
Cercopithecus neglectus	
Vietnamese Sika Deer	**1.2**
Cervus nippon pseudaxis	
Somali Wild Ass	**1.0**
Equus africanus somalicus	
Pony	**1.1**
Equus caballus	
Sun Bear	**0.1**
Helarctos malayanus	
Southern Two-toed Sloth	**0.0.1**
Choloepus didactylus	
Kafue Lechwe	**0.1.1**
Kobus leche kafuensis	
Llama	**1.0**
Lama glama	
Ring-tailed Lemur	**2.1**
Lemur catta	
Golden Lion Tamarin	**0.0.2**
Leontopithecus rosalia	
Mandrill	**1.2**
Mandrillus sphinx	
Reeves´ Muntjac	**1.1**
Muntiacus reevesi reevesi	
Domestic Sheep	**7.5**
Ovis aries aries	
Amur Leopard	**0.2**
Panthera pardus orientalis	
Clouded Leopard	**2.1**
Pardofelis nebulosa	

Mammals	Birth
Mammalia	
Bornean Orangutan	**0.1**
Pongo pygmaeus	
Red-chested Moustached Tamarin	**0.0.2**
Saguinus labiatus	
Cotton-top Tamarin	**0.0.1**
Saguinus oedipus	
Snow Leopard	**1.0**
Uncia uncia	
Alpaca	**1.2.1**
Vicugna pacos	

Birds	Hatched
Aves	
Wrinkled Hornbill	**1.2**
Aceros corrugatus	
Mealy Amazon	**1.1**
Amazona farinosa	
Blue-and-yellow Macaw	**0.0.2**
Ara ararauna	
Military Macaw	**0.0.4**
Ara militaris	
Saker Falcon	**0.0.1**
Falco cherrug	
Budgerigar	**0.0.38**
Melopsittacus undulatus	
Violet Turaco	**0.1**
Musophaga violacea	
Snowy Owl	**0.3**
Nyctea scandiaca	
Cockatiel	**0.0.2**
Nymphicus hollandicus	
Indian Peafowl	**0.0.6**
Pavo cristatus	
Red-fronted Parrot	**0.2**
Poicephalus gulielmi	
Grey Parrot	**1.0.1**
Psittacus erithacus	
Greater Rhea	**0.0.5**
Rhea americana	
Ural Owl	**0.1**
Strix uralensis liturata	
Spot-sided Finch	**0.0.8**
Taeniopygia guttata	

Reptiles	Birth
Reptilia	
Black-bridged Leaf Turtle	**0.0.5**
Cyclemys pulchristriata	
South American Red-footed Tortoise	**0.0.8**
Chelonoidis carbonaria	
California Kingsnake	**0.0.10**
Lampropeltis getula californiae	
Sinaloan Milk Snake	**0.0.10**
Lampropeltis triangulum sinaloae	
Madagascar Giant Day Gecko	**0.0.1**
Phelsuma madagascariensis	
Oriental Water Dragon	**0.0.4**
Physignathus cocincinus	
Inland Bearded Dragon	**0.0.10**
Pogona vitticeps	
Ball Python	**0.0.1**
Python regius	

Finances

Financial operations

Jana Černá

In 2011, the zoo staff counted 65.06 employees (full-time basis).

Financial sumary	**Thousand CZK**
Materials	3,226.76
Feedstuffs	3,505.46
Fuel	575.78
Electricity	2,729.12
Water and sewerage	1,715.63
Repairs of long-term assets	4,609.77
Payroll costs	14,140.76
Payroll assessments	4,802.92
Depreciation of long-term assets	7,079.17
Other expenses	7,632.83
Total costs	50,018.20
Sales - entrance fees	8,812.24
Other revenues (donations, etc.)	1,204.97
Inclusion of the profit from additional activities (sales, advertising, rental fees, etc.)	1,197.20
Inclusion of funds	0.00
Co-funding - founder's budget	33,445.22
Co-funding - MoE's budget for zoo operations	1,732.01
Co-funding - Labour Office Ústí n/L	887.33
Other revenues	2,896.63
Total revenues	50,175.60
Operating profit/loss (profit)	157.4

Payroll incl. assessments was the greatest cost item, representing 26.4 percent of the organization's expenditure. The average 2011 gross salary was amounting to 18,112 CZK per employee.


1

Feedstuffs ***(photo 1)*** constituted another major cost item, with 3,505.46 thousand CZK spent in 2011, of which:

- 3,391.13 thousand CZK was paid for feeding the animals located at the zoo, this including feedstuffs produced on the site, such as hay, green forage, feed mice, brown rats and rabbits etc. at the expense of 725.88 thousand CZK; and

- 114.33 thousand CZK was spent on food for dogs and cats located at the Animal Rescue Centre, which is part of the organisation.

The electricity costs, structured as the power required for normal operations and that necessary for heat pumps employed as part of the zoo's central heating system, reached 1,318.52 thou-

sand CZK and 1,382.6 thousand CZK, respectively, whilst the amount spent for electricity at the Animal Rescue Centre was 28 thousand CZK.

The increased costs of water at the zoo in 2011 compared to the previous year resulted from increased water supply and sewerage rates, with sea lions, seals and tapirs ***(photo 2)*** being the creatures with the largest volume of water consumed.

Funding from the zoo's operational budget for repairs of long-term assets was spent for the repairs of motor vehicles, housing resources, zoo office and leased premises, as well as machinery and installations.

Major items included capital projects and repairs funded from the budget of the founder as well as that of the zoo, these including a completion of the zebra house, improvement of animal housing at the Animal Rescue Centre and repairs of or investments into pinniped facilities.

Own organisation's revenues consisted of incomes from entrance fees, lease, advertising and donations.

The year 2011 saw 151,180 visitors coming into the zoo, this meaning an increase against 2010 in the number of visitors (16,116 persons) as well as in revenues (700.64 thousand CZK). The average entry fee for 2011 achieved, including the extra fee for the zoo train, 58.29 CZK, which is CZK 1.84 less than the same period of 2010. This is due to the reduced collection of train ride fees in 2011, when the zoo train was used in the spring to a minimum extent as a result of repeated repairs. The average cost per ticket in 2011 was 330.85 CZK, the difference between the real cost and that actually paid balanced as follows:

- 7.92 CZK raised through zoo's complementary business activities like leases, advertising and merchandise etc.;

- 253.19 CZK granted by the founder; and

- 11.45 CZK covered through the funding allocated by the Czech Ministry of Environment (MoE), it co-funding the costs of keeping endangered animal species as well as injured wildlife placed in the zoo premises. The MoE grant was used to co-fund animal feeding costs, energy and veterinary costs.

The income from the complementary activities in 2011 comprised the following items:

- Income from rental of apartments and non-residential premises at 1,075.74 thousand CZK;

- Income from advertising (1,029.27 thousand CZK);

- Sales of merchandise (384.16 thousand CZK);

- Income of 1,004.48 thousand CZK from other activities, this including operating the trampoline tower ***(photo 3)***, selling animal food in the pet yard, drawing commission from suppliers of merchandise, re-invoicing energy in lease etc.).

Operations and Technology

Operations and technology

Jiří Hanzlík

Due to ongoing budget-reducing issues, the department was experiencing increased pressure in 2011 alike with the previous years. The gap in terms of maintenance and servicing provided and required has continued to expand, this reflecting on the repairs to the property, where the approach of extreme saving when making repairs and solving emergencies had to be applied wherever possible. Alternative and less costly solutions had to be sought frequently regardless of the outcome. Currently, department personnel conducts less than 50 percent of the department's daily business, whilst the other half of services is outsourced from small businesses and contractors, not speaking about the car fleet and its life, although the fact of the new tractor purchased (New Holland 5050) should be mentioned ***(photo 1)***, this very reliably replacing one of the three horticultural section's initial Zetors in the field work. The base department structure of three separate centres - the maintenance, transport and horticulture - still applies despite the ever-decreasing number of each centre's employees.

Overview of daily business activities:

- Carpentry, joinery, masonry, electrics, locksmith and plumber work throughout the zoo grounds and at the Animal Rescue Centre in the Severní Terasa quarter;

- Self-help in servicing the car fleet insofar it is feasible considering the condition of equipment at the zoo's workshop; if not, making use of favourable terms of outsourcing the fleet servicing under the sub-lease contract in another automobile workshop;

- Repairing interior and exterior plaster of animal houses ***(photo 2)***, casting new structures and repairing brick and stone walls, paving some roads throughout the zoo grounds;

- Carpentry work, especially in producing shelters, repairing roofing and replacing wooden elements of facilities, enclosures and indoor (outdoor exhibits of unsatisfactory condition;

- Carpenters are also employed in manufacturing crates and nesting boxes;

- Electrical maintenance, this particularly consisting in older installations being replaced with new and more cost-saving lighting and heating systems, chiefly in animal exhibits;

- Locksmith repairs, welding, soldering and maintenance of fencing and fences separating the enclosures and roads throughout the zoo area;

- Waste management system in cooperation with the contracting partners, AVE CZ Ústí nad Labem, this including sorting, storage and operation of collecting garbage and animal waste;

- Disposal cooperation as regards nearly 10 tonnes of animal waste, which is provided by the outsourcer

operating the carcass disposal premises;

- Inspection of electric tools and LV wiring as well as that of gas distribution systems for the respective buildings, installations and tools, this being provided by outsourcers as well;

- In co-operation with an outsourcer company, 24/7 guarding services throughout the zoo grounds as well as cleaning services in the operations of two visitor toilets and the carcass box;

- Essential repairs in the official apartments in partnership with the housing resources manager, Městské služby, s. r. o.

Main repairs and services completed:

- The container area moved: five large containers moved and located onto a pre-treated ground platform outside the visitor route and service roads, the operation including a total overhaul of metal containers.

- A disrupted wall of the harbour seal exhibit repaired: water flow system general maintenance, the treatment including a new colour design applied to the major viewing surface as well as all the palisades completing the brick fencing.

- The aquatic bird exhibit rebuilt: a new man-made lake produced along with a new wooden observation platform ***(photo 3)*** permitting the visitor to access the exhibit directly above the surface of the body of water, new vegetation planted and shaping the man-made rocks along the lake sides completed, the entire exhibit fenced by a mesh fence to prevent the fox to enter, thus provide more security, the entrance walkway paved.

- The water reservoir near the Exotarium house repaired: the largest operation as regards the underground services resulted by potable water from the structure. A survey was carried out inside the tank of 300 m^3, but did not show noticeable defects. Nonetheless, the water levels started showing drops on a daily basis. It was decided that the inner part of the tank would be insulated to the height of 4.2 metres using a waterproof sheet, which was managed during a week via a dedicated company, despite some difficulties concerning mounting the foil on the concrete wall. During phase 2, the tank was modernised and a system of tank filling from the mains was automated, this arrangement, consisting of installing electric valves and a tank level indicating system, being completed with success as well.

- The Californian sea lion pool repaired: during the winter, a torn foil was found by animal keepers in the pool with water starting to penetrate under the foil, as well as the wall concrete starting to crumble and metal anchors pulled out detected, with subsequent injuries threatening from the latter. The initial foil from 1998 was completely removed by the maintenance staff as well as all the metal anchoring elements. A specialist company was contracted who successfully repaired the pool by early May. The repair work included replacement of the glass allowing the visitor to observe the animals under water ***(photo 4)***. The concrete structure was treated in terms of pressure, the damaged portion of the concrete walls and floors repaired and a resin-based compound eventually applied to the concrete, which created a very hard and durable surface of the pool.

- The centre of horticulture: provided with extra staff as part of the public works scheme over the earlier half of the year, the centre provided maintenance of all vegetation, tree pruning and self-seeding plant removal, periodical supply of browse at least twice a week and cutting incl.

delivery of green fodder along with its distribution six times a week (except Sundays). The staff also played a critical role in making hay produced on the leased land. Subsoil ploughing was carried out in the autumn in preparation for sowing green fodder on the land lining the zoo fence, with the newly procured tractor New Holland 5050 being mainly applied.

- The transport centre became involved into the operations of the department on a systemic basis, the staff members ensuring transport services and to some extent servicing vehicles and machines within the zoo's fleet that was expanded over the past period with several machines being transferred from other organisations (a multi-purpose vehicle with a platform and one designed as spreader). Additionally, two vehicles underwent overhauling - tractor (Zetor) and Ford Transit. The relatively great motor-related problems detected when operating the zoo train (Isuzu) were eventually resolved through a replacement of the entire engine.

- Animal Rescue Centre: a new series of seven dog kennels added, these mirroring the existing quarantine boxes in terms of layout; the operation included adding thermally insulated dog houses into the kennels and was co-funded by several towns and villages from the neighbourhood that joined forces with the founder - the City of Ústí nad Labem.

- The roof repaired of the upper zoo entrance: this contractor-provided operation involved the roofing of the largest metal structure. The roof was cleaned, new flashing executed and the installation of the polycarbonate component of the gravity roof plane adjusted at the point through which water was leaking into the terrace area each time it rained.

- Redesigning the wintering facility: phase 1 completed, this consisted in extending the alligator winter quarters by joining two boxes, deepening each box and modify the floor shape, heat insulation throughout the new premises and providing hot water into the pool ***(photo 5)***. The next step was completion of the process of all windows and doors being replaced throughout the building, which began before the onset of the 2010/2011 winter. The repair work was finished by the existing central heating distribution piping on the ground floor to the right (out of service) being replaced, this employing copper heating pipes with very good thermal performance.

- Wooden window frames removed and plastic windows installed at the zoo office (floor 3), with subsequently the department for marketing, publicity and education being modernised in terms of construction and then new furniture, doors and other office equipment added.

- Sub-lease terminated in a housing unit offered by the owner for sale. Repair work finished in the official basement apartment used by a zoo staff member. Alterations to eight remaining housing units at the zoo continued thanks to the finances raised through rental agreements.

- Representatives of the department joined the autumn meeting of the UCSZOO's Development Committee taking place at Děčín Zoo. The former meeting in the spring was organised by Prague Zoo, but not attended by Ústí staff members because of the workload as part of preparations for the grand opening ceremony.

- Mobile phone operator changed: after three years, we managed to terminate the contract with T-Mobile Czech Republic and sign a new one with Telefónica O2. With the shift and new contract tariffs being set, the operating costs greatly decreased. In addition, all the mobile devices were renewed, this amounting to 85,000 CZK.

- Based on the published results of the contest aiming to enhance the look of the city, a project dossier was produced for seeking the permit for a new construction entitled "Cheetah Home" to be executed next to the upper zoo entrance. Produced by zoo's personnel, the design involves a simple brick building with two outdoor enclosures, which is supposed to be carried out over the first quarter of 2012 and provide the zoo with a heated slab-on-ground building with a gable roof containing three boxes for cheetahs and two paddocks fenced with a wire mesh, with one of them to be an exhibit enclosure, whilst the other to serve as an out-of-scene area designed for breeding purposes.

- A complaint procedure as regards the geothermal borehole: the main submersible pump had to be claimed with the general contractor - Skanska CZ. After dismantling the 50-metre screwed pipe inside the borehole, where the pump is installed ***(photo 6)***, the pump was subjected to its first-ever inspection since 2004 when it was installed in the borehole and launched. After removal of the defect on the power supply cable the pump returned to its former location to a depth of 50 m below ground. All costs for the repair, which equalled

50 thousand CZK, were successfully claimed with the supplier.

Hartmann's zebra housing: the largest 2011 capital project

Executed over the past two years, this new building was formally approved for operation and put into service in October. In addition to the zebra house, all the pens, access roads and pavements were rebuilt and the vicinity of the house redesigned, with a new observation place established to view the main outdoor enclosure and the remainder of the enclosures and paddocks treated to some extent. The operation received essential co-funding from the grant of the City of Ústí nad Labem and the zoo's Asset Replacement Fund, with additional funding obtained through selling the former quarantine building in Strádov by Chlumec.

Launching the new Hartmann's zebra house was forced through the poor condition of the then zebra stable. Built 30 years ago as a wooden building without heat insulation to provide temporary housing to several zebras, the facility saw over 90 foals of the species being born here. Over the last five years, the technical condition of the premises resulted in the state of emergency, when certain boxes had to be removed from use. In 2007, a part of the roof was torn off due to strong winds and the greatly worn corrugated fibreglass roofing disrupted, the rupture then temporarily covered with waterproof canvas, which was retained on the old stables until these were demolished and removed. The vertical structures - wooden beams - were partially rotten and had to be replaced in some cases. Since preserving the existing zebra house was no longer possible, the completion of the new building was immediately followed by the old wooden building being taken down and a new pen established and primarily used in winter.

Essential for the new house was a new retaining wall; almost five metres high, it allowed the building being positioned closer to the service road and the house being set into the existing slope above the former zebra

stable ***(photo 7)***. The wall was built on the strip foundation 1,000 mm wide, this serving as the foundation structure for the retaining wall as such as well as for the new building. The retaining wall was inclined against the terrain slope under the angle of 7.5° to ensure the structural stability, in addition to thorough reinforcement and structural concrete used. The wall has a total of 6 elevation offsets that follow the slope of the topography, the total length of the wall being 33.5 metres. This retaining structure was eventually backfilled with soil, which was further compacted by planted vegetation and heavy-duty interlocking pavement.

With the completed new building, the zoo successfully achieved a decent and modern holding facility, one that is consistent with technical standards and reasonable in terms of the value-for-money approach. The advantage is a direct connection to the feed storage facility and containers for collecting manure, which is part of the technical background of the buildings. The zebra house has been built from traditional technology materials using advanced thermal insulation and environmentally friendly construction materials.

The existing main road passing close to the new building provides a route for supplying food, i.e. large bales of hay and root crops, and sawdust used as litter. The housing premises for animals are available in an L-shaped single-storey slab-on-grade section. Covered by a gable roof with rafters of unequal heights that also serve to vent the interior of the stables, this part employs eight roof windows (skylights) to illuminate the roof that along with plenty of windows ensure daylight for the house. The main entrance to the zebra house is provided through the out-of-scene premises that split the structure into multiple floors; it has a shed roof. The underground floor 1 contains a site for a single 5 m^3 container to dispose of the manure from the litter, whilst the ground floor consists of a staff room, a social facility and a store for aids and tools, a saw-dust store, a room to keep root crops and a place dedicated for splitting 300 kg round bales of hay, with an area designed for storing these bales (six pieces) contained within floor 2 above the ground and equipped with two openings two feed the bales in ***(photo 8)***.

A major change against the initial design was in connecting the new house to the zoo's central heating system, this action taken only after the final building inspection took place and based on the result of the trial operation failing to fulfil the assumption that the indoor area can be heated up naturally by animals. The facility was connected to the heating system via the existing distribution piping that supplies heat to the antelope house from the heat exchanger plant, with 20 panel radiators (temperature gradient of 55-45 °C) installed inside the zebra house, this operation in fact resulting in the house being completed in full only in December 2011.

Marketing, promotion and conservation education

Marketing, promotion and conservation education

Ing Věra Vrabcová

Several changes in the department structure and operations took place in 2011, from detailing its name, meaning that as of September it has been entitled Marketing, Promotion and Conservation Education, through personal updates and increase in numbers, up to a change in the senior staff.

Visitor numbers

In 2011, the zoo received a total of 151,180 visitors, which included 73,028 adults and 78,152 children, meaning that the numbers increased by 16,116 persons compared to the previous year. ***Figure 1***, which tracks the visitor numbers over the most recent decade, makes is clear that even though we have managed to compensate for the great drop that occurred in 2010, the increase was not very progressive anyway. ***Table 1*** shows that since 1955, from which the numbers have been constantly monitored, the threshold of 150,000 persons was exceeded only eleven times. In comparison with other UCSZOO members, Ústí Zoo still holds the rear positions.

Partnership with media

The support received from the media has been stable over many years, with each of the editors kept updated concerning all zoo-related updates and events via electronic mail, with however decision making concerning publishing the report being their absolute discretion. In 2011, the zoo sent out a total of 60 reports and three press releases.

Television The reports were broadcast as part of national news on three major television channels, which mostly related to TV Nova. Online broadcasting has also recently expanded, this employed by e.g. ČTK or Ústecká TV who were using reports from the zoo as part of their regional news. TV Brno filmed at the zoo one part of their popular children's programme featuring a mysterious dwarf and elephants walking throughout the zoo ***(photo 1)***. TV Prima in cooperation with the Debra Foundation took support footage at the zoo for their charity Christmas concert.

Radio Information on zoo updates are presented on various radio stations, the major partners being Rádio Blaník and Český rozhlas Sever, these publishing news on cultural programmes at the zoo on a periodical basis, in addition to inviting the zoo staff as guests in the direct broadcasting from time to time.

Press As regards Ústí nad Labem Region, residents are kept updated primarily through Ústecký deník (local newspaper) and other local variants of the Deníky Bohemia Group, as well as through regional sections of other newspapers, while other regions receive updates via ČTK. Other means include some national magazines, updates also made available to Nové ústecké přehledy (cultural updates) and Městské noviny (city newspapers). Several interviews were held online directly at the Ústecký deník headquarters, with various zoo staff members answering questions raised by the public.

Internet In addition to the zoo's own websites (www.zoousti.cz & www.choboti.cz), these being updated on a periodical basis, information on the zoo is posted on diverse sites and servers, like that of the City of Ústí nad Labem, UCSZOO etc.

Events for the public

A total of 22 shows and events for adults and children took place in 2011, whether they were arranged by the zoo staff members (12) or produced as part of cooperation with other partners (3). In addition to the above, quizzes and competitions (7) were organised, where visitors could participate on a voluntary basis, and displays on various subjects (8) arranged

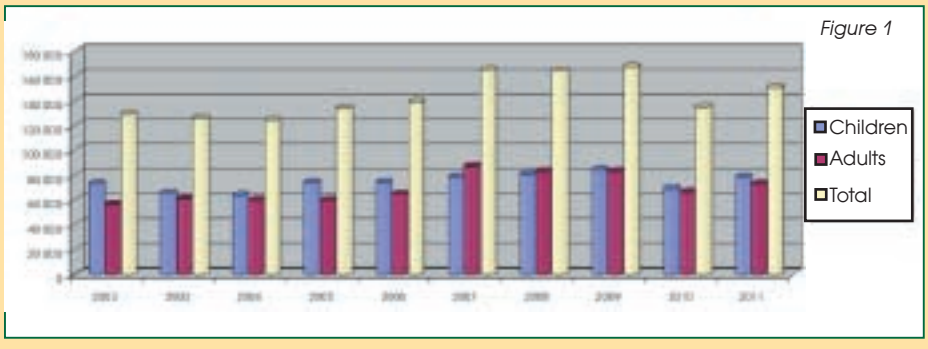


Figure 1

Table 1

Year	Children	Adults	Total	Year	Children	Adults	Total
1955	-	-	56443	1983	70755	71547	142302
1956	-	-	40307	1984	73686	76964	150650
1957	-	-	57151	1985	79585	77778	157363
1958	-	-	70977	1986	89148	84545	173693
1959	34940	40696	75636	1987	83662	80987	164649
1960	36525	39110	75635	1988	85759	92384	178143
1961	46495	36521	83016	1989	76072	83415	159487
1962	42883	47139	90022	1990	61999	65302	127301
1963	40483	44027	84510	1991	54183	58410	112593
1964	45265	44734	89999	1992	63777	63691	127468
1965	39888	48349	88237	1993	62688	63297	125985
1966	39635	46716	86351	1994	61645	53938	115583
1967	38912	44252	83164	1995	65824	57668	123492
1968	30110	42039	72149	1996	74511	62220	136731
1969	35523	38174	73697	1997	73959	64451	138410
1970	29352	33248	62600	1998	74555	64258	138813
1971	22550	45931	68481	1999	81911	70794	152705
1972	21600	51303	72903	2000	81532	67456	148988
1973	32942	42255	75197	2001	74995	60615	135610
1974	42947	37356	80303	2002	72938	56365	129303
1975	45433	43277	88710	2003	65484	60725	126209
1976	70044	30303	100347	2004	64233	60053	124286
1977	79909	30425	110334	2005	74275	60153	134428
1978	59298	51756	111054	2006	74284	65072	139356
1979	56544	53680	110224	2007	77995	87240	165235
1980	60865	54047	114912	2008	80900	83597	164497
1981	70129	73978	144107	2009	84568	83296	167864
1982	74300	66911	141211	2010	68831	66233	135064
				2011	**78 152**	**73 028**	**151 180**

for zoo visitors along with public lectures that were chiefly taking place outside the zoo grounds. The zoo was making publicity for such events through its own staff using mainly the city transport billposting service or emailing the updates to the media, schools and centres of culture, along with posting them on the official websites. In 2011, a cost-effective billboard campaign was also employed, this focusing chiefly on events organised by the zoo staff. Updates on the events we produce also appear on various online information services and in the form of advertorials in most of journals.

Programmes for the public

Grand season opening (2 April)

Attractions, competitions, stands and other activities were available throughout the zoo all the day long. The main programme took place by the Carnivore House - bluegrass band performance, theatrical performance, the results of Animal of the Year poll for 2010 were announced and winners awarded. The event was topped off with a show of Věra Martinová, female singer and animal godparent. The great day out included official opening of the aquatic bird exhibit after its renewal as well as a naming party with a young male mandrill.

The Earth's Day (23 April)

The programme focused on the Europe-wide campaign to save apes (EAZA Ape Campaign 2010/2011). Children of participating schools produced sites throughout the zoo containing tasks and activities for the visitors, including that of the scout troop who joined with their block of competitions called Skilful Apes or Playing at the Zoo. The main programme was underway by the Koliba Restaurant and

involved a theatre performance on wandering of a young female gorilla, musical show with African rhythms and shows by children of primary schools. The show ended upon a naming party with a male Bactrian camel. Everyone presenting a used electrical appliance received a discount on admission from Elektrowin.

Witches at the Zoo (30 April)

The programme was opened by a naming party with a golden lion tamarin. A new scheme of supporting the zoo was introduced by the lion exhibit. Called Animal Sponsor, it was tested for the first time by a female football team based in Ústí. At 4 p.m., a ceremonial fire was lit by the Koliba Restaurant in the presence of witches ***(photo 2)***, the cool atmosphere supported by country&western music.

The Day of Birds at the Zoo (1 May)

Birdwatching and listening to bird singing as well as examples of how to trap and ring a bird - all of that taking place in the early morning (5 a.m., i.e. when birds are most active, and 6.30 a.m.), with free entry for everyone interested and games with competitions available for children before the end of this event produced by the zoo under a traditional partnership with the Czech Society for Ornithology and the Museum of Ústí nad Labem.

Tracking the Fox (14 May)

Already a year 7, this event was produced by Bílý javor, a scout centre in Ústí nad Labem, not only for invited scout troops, but also for any kid visiting the zoo on that day. A variety of sites was placed throughout the zoo grounds to compete and test personal skills like moving ability, craftsmanship, speed, observation, knowledge and so on. The event was also designed to commemorate the 90 years of scouting in the city.

The Children's Day (28 May)

Grand celebrations were held at various locations throughout the zoo, this including attractions, competitions, sports programme as part of the Athletics for children scheme ***(photo 3)***, magician's show and music. The main programme was taking place by the Koliba Restaurant (theatre performance including that of primary school students, children's choir, majorettes and children's aerobics group). The zoo staff welcomed several special guests and a naming party was eventually held with two young Shetland ponies.

Programmes sponsored by Czech health insurance companies (12 & 25 June)

Each of these programmes co-

produced by a health insurance company, they comprised health education activities and accompanying programmes like face painting, sports activities, children's workshops and other activities including competitions.

Farewell to the Summer Holidays (3 September)

A full-day programme arranged for visitors, including competitions and other activities; the afternoon part was taking place by the Koliba Restaurant and featured a theatre show, children's choir performance, entertainment show, country&western dance performance, competitions and games. The event was topped off with a young snow leopard naming party.

The day of animal fosterers (1 October)

A well-established event only for invited guests, with a special programme arranged. Taking the form of a joint guided tour, this involves stops with commentaries focused on the updates of the most recent year, which in 2011 included new exhibits (aquatic birds, zebras), additions (southern ground hornbills), major updates in terms of offspring (young carnivores or hoofed mammals) and new presentation shows (giraffes and rhino). The walk was followed by golden certificates and large-format photographs by Petr Slavík being presented as a thank-you to long-term or extremely generous animal fosterers, in addition to final rating of a quiz competition. The peaceful rhythm of the afternoon was also supported by music and performance of a historical fencing group.

The World Animal Day (1 October)

A part of the programme dedicated to animal fosterers was available to other zoo visitors as well, this aiming to celebrate the World Animal Day (4 October), meaning that everyone could attend the afternoon session with the musical band and watch the historical fencing performance.

The Days of Open Door (28 - 30 October)

Behind the scenes tours were available to the visitor in each of the three days, this involving four sites (Exotarium, the elephant house, the wintering facility along with the feed processing room and the new Hartmann's zebra house - ***photo 4***), with guided tours taking place three times per day. Friday of 28 October became the main day, when there was a ribbon-cutting ceremony for the new building constructed for Hartmann zebras, this followed by a programme that was held by the Koliba Restaurant and included a musical show and a theatrical performance on how a zebra lost its stripes.

The Zoo of Ghosts (5 November)

This autumn events attracted a large number of zoo visitors (936) and became one of the most successful events of the year. After the beginning, which was dedicated to a female Malayan sun bear naming party, the scheme followed with children's activities (fine art ghost workshop, projecting ghost fairy tales, carving scary faces from pumpkins and face painting), and eventually a lantern procession touring the zoo, while meeting a number of scary creatures, the route illuminated not just by carved jack-o'-lanterns, but also candlewoods and a great number of lanterns. The Zoo of Ghosts event was held for the first time as a joint programme of members of Union of Czech and Slovak Zoos.

The Christmas Day (24 December)

Gift-giving activity concerning specific animal species, this held on the very Christmas Day, has become another very successful part of the zoo's public event series. Complete with decorated trees and wrapped gifts with goodies, this was in 2011 available for visitors and focused on the Bornean orangutan, Bonnet macaque, mandrill, ruffed lemur, Malayan sun bear

and Asian elephant, with 750 persons attending the event, including children and adults.

Christmas Carolling (27 December)

Taking place inside the Carnivore House, this event incorporated a naming party with the most recent offspring born and reared at the exhibit that experienced a real success in 2011. After the members of The Boom (The Beatles Revival Band) named two young Amur leopard females and the triplet of the clouded leopard ***(photo 5)***, a short series of carols followed, the programme topped off with competitions and games for children.

Competitions and quizzes

The half-term holiday (4 - 6 February)

A competition game for children *Win a rainbow treasure*, employing tasks available at seven sites (i.e. the same number as that of rainbow colours), with every participant being rewarded, in addition to getting free admission to the zoo.

Spring holiday at the zoo (28 February - 6 March)

Focusing on the EAZA Ape Campaign 2010/2011, this nine-day programme comprised a competition employing several sites throughout the zoo's down-the-hill section with ape subjects, each participant undergoing the contest receiving a small reward.

The Ape Week (18 - 25 April)

Part of the EAZA Ape Campaign 2010/2011, the week of apes took place in this period in most European zoos, Ústí Zoo joining with new activities for schools as well as the visitor, the former being offered an education programme on large primate species, whilst families with children could take the opportunity of spending the Easter holidays (21 to 25 April) for travelling with the orangutan family, making use of panels placed in the lower zone of the zoo showing a comic series depicting orangutans daily living stories, this accompanied with various learn-and-play items enabling everybody to test skills of great apes or absorb interesting information from their life ***(photo 6)***.

The May Day (1 May)

The early morning wandering to hear bird singing was followed by an all-day-long competition Bird quiz with sites placed throughout the zoo. Everyone was asked to answer ten questions, with three winners selected by lot receiving a greater rhea egg.

Zoo Grading Report (30 June - 6 July)

Questions were available on eleven sites throughout the zoo that concerned subjects as at school, i.e. Czech language, occupational training, geography and so on, relating in some way to animal skills and abilities. Each participant received a zoo's commemorative coin.

Our Nearest Relatives (25 July - 28 August)

A photographer competition was pronounced in two categories (children under 15 and adults); this was another activity concerning the pan-European EAZA Ape Campaign 2010/2011, the competing participants assigned a task to make a photograph of any of the apes kept at Ústí nad Labem Zoo (orangutans and gibbons), 20 cm per 30 cm being the minimum format.

Notes from a Student's Book (1 October)

This visitor quiz became a part of the programme on the occasion of the World Animal Day, the task being identifying and determining nine animal species according to notes entered in a student's book to receive a gift upon presenting a completed competition ticket.

Zoo Trails (28 - 30 October)

A traditional quiz, it became part of the Days of Open Door event. This time it concerned the zebras, with nine questions placed throughout the zoo. Providing a correct answer to each question qualified for being included amongst ten rewarded winners as specified by a lot drawing procedure.

Displays

All the 2011 displays were held in the zoo grounds, in the Exotarium house that is accessible to all types of visitors.

A Trip to Mexico to Discover the World of Nature and Humans (9 February - 31 March)

This photographic display concerned wandering of eight naturalists (cactus growers and ornithologists) around the inland Mexican territories, with images accompanied by commentaries depicting the daily living of people as well as the beauty of the country's natural world.

Hop...to Make a 3D Ape (23 April - 14 July)

Dedicated to the EAZA Ape Campaign 2010/2011, the display

featured products made by children of nursery schools who were assigned a task of rendering any of the endangered great ape species using any technique and sufficient size ***(photo 7)***. The outputs being very successful, the operation was attended by 14 teams of children.

Poster Display (23 April - 14 July)

Another operation focusing on the EAZA Ape Campaign, it reached secondary education students with the task of producing posters that would describe the campaign's topic, with a particular focus being an alarming communication concerning threats to which the great apes are facing. Works of a total of 10 participating students were assessed and awarded on the occasion of International Earth Day.

Cacti and succulent plant display (21 - 26 June)

A traditional event arranged by the cacti and succulent plant grower community of Ústí nad Labem, with the largest and eldest specimens being displayed in a special tent and a number of plantings being offered for sale to the zoo visitors.

ShineBean (15 July - 31 August)

During the summer holidays, the zoo audience was given the opportunity of visiting a travelling exhibition of ShineBean (a civic association) dedicated to daily living in Kenya, with each of the panel presenting among others projects in which the association members are currently involved in Kenya, e.g. that entitled African Prospects, through which the group is offering education programmes to Czech schools.

Our Nearest Relatives (3 September - 6 October)

This photographer display was dedicated to the great apes of Ústí Zoo, their pictures being taken by the participants during the summer holidays. The grand opening ceremony including announcing and rewarding the authors of the best shots was held to mark the Farewell to the Summer Holidays event.

Protecting the green lizard in České středohoří PLA (6 October - 30 November)

Arranged by Středisko ekologické výchovy Sever Litoměřice (a centre for environmental education), this display focused through its eight posters on this protected species of Czech fauna with regard to mapping its current status within a particular area.

Making pets from PETs (2 - 31 December)

This involved a custom project of ZŠ praktická Neštěmice (a special primary school), with participating children of Year 3, 4 and 9 producing eight large mosaics showing animals from Ústí Zoo using caps of PET bottles.

Public lectures:

Primary School Anežky České (30 March)

Dr Stanislav Lhota, the zoo researcher, met the students to make them aware of the Pesisir Balikpapan conservation project and the fauna and flora of the island of Borneo, as well as threats the local natural world is facing ***(photo 8)***, the event topped off with the

School type	No. of programmes	Participants
Nursery schools	2	50
Primary schools	49	1095
Secondary schools	17	472

Table 2 & figure

children presenting Mr Lhota a flag that they had jointly produced and that is to be taken to the island.

The Bay of Sorrow (11 April)

A public lecture held by Dr Stanislav Lhota at Severočeská knihovna Ústí nad Labem (a regional library) on the history of a Bornean reservation, the issue of tropical deforestation and the threat of excessive cultivation of oil palms.

Great Ape Session (14 April)

The Bárka café was a venue for this public lecture with Ústí Zoo staff members covering large primates, which more specifically involved discussing the Pesisir Balikpapan project, orangutan management at Ústí Zoo and information about the EAZA Ape Campaign 2010/2011.

The Earth's Day (23 April)

This event was underway at the zoo's Carnivore House and involved a public lecture held by Dr Stanislav Lhota on the Bornean nature, this accompanied by screening an emotional documentary on the fate of Green, a wild orangutan female. The public lecture was complete with photographs from Mr Lhota's research work as part of the Pesisir Balikpapan project.

Tyfloservis (10 September)

A public lecture was held for visually impaired people at Heinrich Lumpe Zoo School, employing a host of natural products available in the premises, like skins, skulls, eggs etc., in addition to showing pictures and talking about animal celebrities of Ústí Zoo. The audience of some 60 persons, including accompanying persons, then enjoyed a stroll around the zoo.

Schools and conservation education

Sixteen different programmes were available for schools, some of theme including multiple options according to participants age. The teaching schemes make fully use of the Heinrich Lumpe Zoo School that suits the needs in terms of both technical support and being equipped with a number of natural products and dermoplastic materials. Even though the range of programmes is mostly desired in May, June and September, schools have now begun making reservations to some extent outside of these high-profile. The free entry offered in the winter season has proved to work well for school groups, especially in December. Education programmes are charged, with 20 CZK to be paid per student.

In 2011, a total of 77 activities were conducted with a total of 1,871 participants, of which educational programmes counted 68 with 1,617 children and students involved, the distribution of different types of schools being as follows ***(Table 2 & figure)***.

In addition, nine guided tours were held, this accompanied by zoo train rides and stops at the respective animal houses, these employing examples of natural products in addition to technical commentaries, the total number of participants being 254 in 2011.

There is the option of buying an annual group ticket for 20/10 visits for any school. These can be shared by different classes of the same school and the prices are favourable (50% discount). Nonetheless, this has been utilised by a single primary school.

An unusual experience was that of the Year 1 students of the Velké Březno Primary School when receiving their first report, which took place at the Carnivore House, or that of the Year 7 students of the Jestřebí Primary School taking their final reports inside the elephant outdoor enclosure (with no elephants in). In doing so, the children were becoming animal fosterers/sponsors.

In the late 2010, nursery schools were invited to take part in decorating their own Christmas tree at the zoo, an activity that meets increasingly higher visitor response. Sadly, as a part of reservations had to be cancelled due to the limited number of suitable conifers, a total of 14 children groups could make use of this opportunity.

A group of students of Vojnovičova Primary School visited the zoo as part of a suburban children camp and was given the opportunity of an expert guided tour behind the scenes.

There was ongoing cooperation with a medical secondary school as part of student research activities, whether it was studying animal behaviour in selected species or

educational activities.

In collaboration with the Ústí-based university, a group of students (the Faculty of Natural History) took part in the required seminar for the spring semester (year 3) entitled *Using the gene pool of endangered animals kept in captivity for reintroduction schemes* ***(photo 9)***, this involving two groups (full-time and combined studies) with a total of 52 participants. In addition, an expert lecture combined with the opportunity of getting in touch with the zoo's elephant and orangutan keepers was something that 26 students of Czech Life Science University were benefitting from as part of a special course.

Junior Summer University

In summer (6 to 16 July), a special camp was held at the zoo for children from all over the country. Called the Junior Summer University, it is organised annually by the Central European Association of Zoo Friends (CEAF), this type of activity taking place already for the third time in Ústí nad Labem (previously 2004 and 2007). The zoo provides children with the necessary background and part of the vocational programme (i.e. lectures, competitions, quizzes etc.), whilst children in turn assist in cleaning and painting work or become involved in environmental enrichment. The camp attracts children with an increased interest in natural history and management of exotic animals, ones that feature extremely large knowledge in the field given their age.

EAZA Ape Campaign 2010/2011

As usual, the zoo became involved in the campaign of the European Association of Zoos and Aquariums, now dedicated to great apes. A range of activities were developed and arranged for visitors to the zoo and other interested parties. In addition to multiple public events like displays, public lectures and competitions, a comic book series was posted monthly on the zoo's website. Called "Seconds of the Orangutan Family", each part was dedicated to a serious topic, with the department staff participating in the production and the graphic form created by cartoonist Dan Černý. The exceptional nature of this activity was confirmed through awarding the series at the EAZA annual conference, this placing Ústí amongst 16 most successful European zoos in this regard.

As to activities for schools, these were already mentioned earlier (see programmes / competitions / displays / public lectures), most of them relating to the events on the International Earth Day.

Animal shows

Making use of meeting the animals from close or featuring natural animal traits, animal shows have become a routine part of the educational work, the much-favoured parts of that including training of Moritz the sea lion, the elephant walks around the zoo and elephant training outdoors, the honey tree for Malayan sun bears, feeding and enrichment in the Bornean orangutan, harbour seal or piranha feeding, as well as the pony rides, these being one of the top attractions for the youngest. In 2011, the number above was expanded to include three more opportunities in animal feeding shows - tapirs, large species of parrots and giraffes & rhinos, all accompanied by keeper's commentary. The shows follow each other in terms of time, aiming to make the zoo visit much more pleasant and attractive to the visitor and provide interesting information on the daily living of the creatures.

The Pesisir Balikpapan project

Since 2007, the zoo has been supporting this research and conservation activity on the island of Borneo, Indonesia. Despite the researcher's working hours being reduced in 2011, the cooperation has continued to run at the same level as previously. Since Dr Stanislav Lhota was spending the early period of the year in the Czech Republic, a number of public talks and lectures was possible (see Public lectures). There has also been more intense cooperation with the Zoological Society (ZS), this becoming an independent civic association as of January, making in turn an agreement on cooperation with Mr Lhota, who returned in May 2011 back to Borneo. Since then, tracking the latest updates from the field is again possible using a special link available on the zoo's website as well as that of the Zoological Society. Before Dr Lhota left, he was given a set of promotional T-shirts for his personal use as well as for the native Bornean rangers; each T-shirt carrying

zoo's and ZC's logos. An area was reserved near the down-the-hill zoo entrance to present conservation projects of the Union of Czech and Slovak Zoos, this including panels showing details of the Pesisir Balikpapan project as well as those of several other zoos ***(photo 10)***.

Zoological Society

With the close cooperation, supported also by the contractual relationship, the joint activities of the society and the zoo have been continuing despite the former being registered as an independent civic association on 1 January 2011. The zoo published another volume of the Fauna Bohemiae Septentrionalis collection (200 copies), with contributors including the zoo staff as well as members of the ZS. Numbered Tomus 35 (2010), the collection is mailed out to diverse domestic and foreign scientific institutions. In the course of the year, an annual meeting and three special member meetings were held at the Heinrich Lumpe Zoo School, each of them containing a lecture on a specific trip, presentation of animal management or breeding success of interest and a tour of selected sections behind the scenes. Each member receives a newsletter regular four times per annum, this providing more details of what has happened at the zoo. This strengthens the relations and fellowship, thus increasingly making the society a kind of "friends of the zoo" community.

Animal of the Year 2010

Taking place already for the fifth time, the poll was underway from January to March 2011 online (www.zoousti.cz), with six animals nominated as usual, these involving creatures that had raised the greatest zoo visitor awareness over the respective year. The response from a total of 1,930 participants resulted in the newly arrived pair of the clouded leopard, Cayan and Lenya, getting the most votes (43%). The formal announcement of the results including awarding those drawn by a lot took place as part of the grand season opening.

Miscellaneous activities

The zoo website has continued to be increasingly used as a means of communication with the public. Enhanced with several new links (experience programmes, animal sponsors etc.), the site is used, along with that on popular Facebook, for updating the user on a periodical basis with respect to current events at the zoo, whilst making use of the other zoo's website (www.choboti.cz) that was moved under the same administrator and their graphics updated.

Participating in the UCSZOO's Annual Report by giving a detailed report summarising the preceding year in terms of animal numbers, husbandry news & new exhibits, events for the public etc. have continued.

The zoo was represented by means of publicity and promotional materials at any fair and exhibition that was joined by the City of Ústí nad Labem.

In March, the department staff member attended the EZE International Conference held in Valencia, Spain, the zoo's educational activities being present by means of a poster displayed in the foyer of the conference venue ***(photo 11)***.

The zoo offered free entry or guides, where necessary, to the participants of the WAZA annual conference, this held in Prague. Other opportunities involving a guided tour included a German group of zoo friends and a trip of students from the University of Karaganda, Kazakhstan.

In the mid-June, the Usti nad Labem Zoo team participated in the year 14 of the Zoological Games without Frontiers event organised by Bratislava Zoo, where it took place 5.

In the same period of the year, a special tour to Magdeburg Zoo took place, this joined by staff members of Ústí Zoo as well as other zoos, members of the Zoological Society and other interested parties.

In August, an award ceremony was held in the zoo grounds as regards the competition focused on waste separation, this organised by Envicon.

In November, the department staff participated in a joint meeting of marketing and education committees to the UCSZOO, with Prague Zoo being the venue. Ústí Zoo presented two papers relating to their EAZA campaign activities and experience programmes.

In December, the zoo took part in the event entitled Ústí nad Labem's Christmas that was held in the city centre during the Advent period as usual, by arranging for examples of contact animals (Cameroon sheep) and the opportunity of taking a ride in the decorated zoo train.

Animal adoption and animal sponsors

Bc Tereza Limburská


1

The animal adoption scheme has been running at the zoo since 1990, when the political situation and economical circumstances changed so that the then zoo director Vladimír Mikulica DVM, inspired by lessons learned from abroad, offered individuals and companies the opportunity of supporting the zoo in terms of funding. Since then the initiative has seen hundreds of people wishing to become involved in this kind of help, as well as several amendments in the principles and conditions, these always necessary to accommodate the circumstances that prevailed at that time. Details on the scheme are available under a separate section on the zoo's website, which additionally lists all the fosterers, names of these also highlighted by means of a plate found by the exhibit or outdoor enclosure of the respective animal. Every first weekend of October, a grand fosterer celebration is held, an event with a special programme for invited guests only ***(photo 1)***.

As the year 2011 went by, several system updates took place, which included one concerning a delivery of agreements, this now being made via emails to simplify record keeping, paperwork and communication. Needless to say, this has expedited the flow and soon began to enjoy popularity by fosterers. Changes also occurred as regards number of fosterers per animal. The adherence to a single animal per supporter system which we followed for many years as we deemed it to be much more personalised approach has resulted in the zoo deciding to open the scheme with creatures „valuated" under 2,500 CZK and „provide" these animals to multiple donors, forced by the fact that changes in numbers in these lesser species occur very often during the year, making the former rule difficult to observe. Moreover, „demand" was exceeding the „supply" in some favourite species like Asian small-clawed otters or Prevost's squirrels, unlike with those with fees over 3,000 CZK, for which the „one animal per fosterer" principle is strictly followed.

A brand new option of support was also introduced, allowing everyone to become an **animal sponsor**, the rationale behind this being many cases of people wishing to support their

2

much-favoured animal - elephants, lions and the like, but unable to achieve the amount specified, which was too high for them to pay. Animal sponsorship therefore covers any support of at least 1,000 CZK, with neither the amount nor the number of sponsors per animal limited from now on. As regards agreements, those made with sponsors cover one year, with benefits available even in this type of support, be this free entrance tickets or listing the sponsor name on the zoo website and the main information area near the harbour seal pool ***(photo 2)***.

The total funds raised through this new scheme amounted to 51,543 CZK, with the harbour seal, the Californian sea lion, the snow leopard and the Asian elephant being the species on the top of interest. The all-female football team LFC (Ladies Football Club) based in Ústí nad Labem, called the Lionesses of Ústí, became the first-ever sponsor, which took place as part of a ceremony at one of the public events. The animal sponsored, female Katanga lion Ronja ***(photo 3)***, became one of the animals supported in 2011, with total funds raised through the animal adoption and sponsorship schemes amounting to 706,966 CZK, which however turned out to be almost 50,000 CZK less than in the previous year despite the great success of the new sponsorship project.


3

Experience programmes

Ing Věra Vrabcová

Over the past few years, there was a growing demand from animal enthusiasts and lovers and constant asking about the possibility of undergoing an unusual experience and more close contact with animals, this eventually resulting in a scheme being developed and formally presented by the zoo in April involving programmes combining conservation education and experience. A considerable delay against the initial idea was caused by applicant insurance issues, which comprised not only safety (injuries/accidents), but also liability, since attempts to arrange the latter with various companies including the zoo's insurance contractor unfortunately failed in the past years. After long periods of negotiations and failures it was decided that this insurance should be arranged by the respective participant, this then being proved by a copy of the insurance contract and/or affidavit. Additional conditions included a contract signed with each applicant, this listing all requirements, financial performance, rights and obligations of the applicant and rights and duties of the zoo. Upon entry into the programme, the responsible zoo representative shall provide training to the person interested, this confirmed by a signature of the latter, concerning safety and the code of conduct when operating in the vicinity of the animals. Similarly, the applicant shall confirm that everything went well and without any problem before they leave the programme.

Two types of experience schemes were offered, of which the first one allows the person to spend a full working day with keepers (the *Keeper for a Day at the Elephant House* plan - ***photo 1*** - or the *Keeper for a Day at the Exotarium House* plan - ***photo 2***). It is required

that this type takes place only on weekdays, as it is necessary that the keeper pays full attention to and takes a proper care of the participant, which is not possible over the weekend, when there is only a single person available. Other requirements involve the age of 18 and a good physical and mental condition. In addition to routine activities like cleaning exhibits, preparing food etc., participants may encounter unplanned events, such as veterinary treatment, rearing offspring, elephant walk and so on, meaning that no day is the same as the other. The *Keeper for a Day* scheme fee is 5,000 CZK, this including free admission to the zoo, lunch, branded T-shirt, name tag, certificate and commemorative gifts.

The other programme involves meetings with certain animal species including participation in the feeding, this specifically comprising elephants ***(photo 3)***, giraffes ***(photo 4)*** and seals ***(photo 5)***, the fee being much less challenging, with only 1,500 CZK charged including admission for a single person and zoo's publicity materials. The conditions are not as strict as with the other plan, as participating is allowed for applicants reaching 12 years, with however parental/guardian's consent required in such cases, whilst the person must be accompanied by an adult. The time spent with animals is much shorter and tailored to that of feeding. The shortest time will be probably spent by the seals, since both Junior and Mary can swallow up their batch of fish pretty quickly. On the other hand, a lot of interesting information and practical lessons learned can be absorbed while chatting with the keeper.

A total of 27 events took place from April to December 2011, of which three applicants opted for the *Keeper for a Day* plan, whilst sixteen persons enjoyed elephant feeding, six participants joined the giraffe feeding and seal feeding was assisted by two guests. The percentage is shown in ***Figure 1.***

Information on all the programmes available is published on the zoo's website and includes the terms and conditions, prices and other details. In early April, a press release regarding this activity was sent to the media, with even several reports and direct interviews with participants taking place. In the autumn, a commercial was produced including a short video and placed on the screens of public transport buses, which worked well in the period before Christmas, when 11 contracts were signed and paid as an unusual Christmas gift. It should be noted that cases of donating the programme to another person for birthday or as wedding gift were quite usual. If that occurred, the common practice was signing the contract with the donor, not the donee, since the document that the latter would have to sign indicates the amount of money, which of course is not desirable. On the other hand, the insurance and training in safety is a matter of the participating person. When discussing gifts, the staff encountered several informal situations where the recipient did not know to the very last moment what had been arranged by their loved ones. The very first participant in the *Keeper for a Day at the Elephant House* scheme learned what had been prepared by her husband only in the morning after she arrived at the zoo and was given a sports bag full of spare clothes including work shoes by the smiling zoo staff.

Feedback and customer satisfaction was surveyed via email inquiries or received from the participants themselves within their spontaneous response either through the guestbook on the zoo's website or by email. As expected, these types of experience were attracting enthusiasts and animal lovers, so all the response was fully positive, its intensity ranging from real exaltation and amazement to a rather "common" wording, examples of which are given below as a

conclusion:

Hello,

Thanks to your assistance, I became on 6 May 2011 a nurse of two cuddliest elephant females I have ever seen, and have been constantly full of impressions even though it took place 14 days ago. It was the most beautiful gift for me. Big big thanks to you and your colleague for this nice day. This amazing experience is recommended to everybody.

Sincerely,

Miluše Fialová, Chomutov

Hello,

It was absolutely amazing and my girlfriend is full of that even now:-)! We liked it very much and it is my intention to thank you so much for this unforgettable and once-in-the-lifetime experience. I would also like to say big thanks for allowing me to fulfil my girlfriend's dream. We even did some advertising when we returned home after we showed pictures and talked about experiences, so now the whole village is looking forward to set out for a trip to meet your animals and their training, which is something they would particularly wish to see :-)

Once again, thank you very much! I am definitely going to recommend your zoo to anyone as beautiful experiences that linger long in the mind are damn little.

Tomáš Havránek

Hello,

Feeding giraffes was absolutely fantastic! I have long wondered what I would do to make my daughter happy, and I think I really hit. She really did not expect anything like that. Even her younger brother enjoyed that, boasting the next day at school. I wish you a lot of success and customer satisfaction. And mainly happy animals.

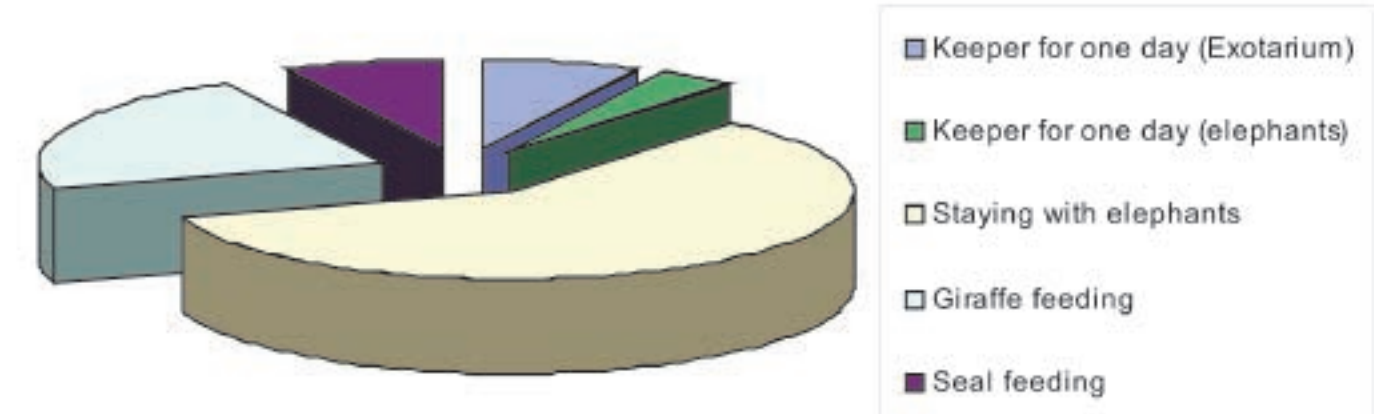
Best regards, Latislav's family

Good evening,

I am sending you pictures from our wedding visit to the elephant beauties. The newlyweds were thrilled, thank you for everything. This applies both to you for managing everything and the gentlemen from the elephants for their welcoming approach and care.

Programme	**No. of applicants**
Keeper for one day (Exotarium)	2
Keeper for one day (elephants)	1
Staying with elephants	16
Giraffe feeding	6
Seal feeding	2

Figure 1



Staff

Staff

Senior executives

MVDr Václav POŽIVIL - Director & CEO

Jana ČERNÁ - Deputy Director & Head of Finances

Ing Petra PADALÍKOVÁ - Head of Animal Management

Jiří HANZLÍK - Head of Operations and Technology

Ing Věra VRABCOVÁ - Head of Promotion and Conservation Education (until 31 October 2011)

Bc Tereza LIMBURSKÁ Head of Marketing, Promotion and Conservation Education (from 1 November 2011)

Specialist staff

Ing Pavel KRÁL - Animal Curator

Bc Tomáš ANDĚL - Animal Curator

Other senior staff members

Hana ROHÁČKOVÁ - Head of Horticulture

Jaroslava JEŽKOVÁ - Head of Animal Rescue Centre

Staff numbers by department

Animal Management: 30 & 2 on maternity leave

Finances: 5 & 1 on maternity leave

Operations and Technology: 10

Marketing, Promotion and Conservation Education: 3 & 1 on maternity leave

Animal Rescue Centre: 2

Public works personnel: 7

TOTAL on 31-12-2011: 66 & 4 on maternity leave

Legal Information

Legal Information

Zoologická zahrada Ústí nad Labem, příspěvková organizace

Drážďanská 23

400 07 Ústí nad Labem

Czech Republic

Legal form:	Non-profit, city co-funded organisation
ID:	00081582
VAT ID:	CZ-00081582
Telephone:	+420 475 503 354
Telephone & facsimile:	+420 475 503 421
Email:	zoo@zoousti.cz
Internet:	www.zoousti.cz, www.choboti.cz
Full legal name in Czech:	Zoologická zahrada Ústí nad Labem, přísp. org.
Registered address:	Drážďanská 23, 400 07 Ústí nad Labem, Czech Republic

Founder:	Statutární město Ústí nad Labem / Statutory City of Usti nad Labem
Founder`s address:	Velká hradební 8, 400 01 Ústí nad Labem, Czech Republic
ID:	00081531
Mayor:	Ing Vít Mandík

Zoo Director and CEO:	MVDr Václav POŽIVIL

The ZOO is a member of:

ZOO Ústí nad Labem