


QUARTERLY PUBLICATION OF THE EUROPEAN ASSOCIATION OF ZOOS AND AQUARIA

# ZOOQUARIA

SPRING 2020

ISSUE 108



## A NOBLE CAUSE

SAVING THE DANISH  
NOBLE CHAFER



### WHICH FISH?

CAMPAIGNING DURING A GLOBAL PANDEMIC

### BUILDING A FOOD FOREST

BEHIND THE SCENES AT A NEW PRIMATE EXHIBIT





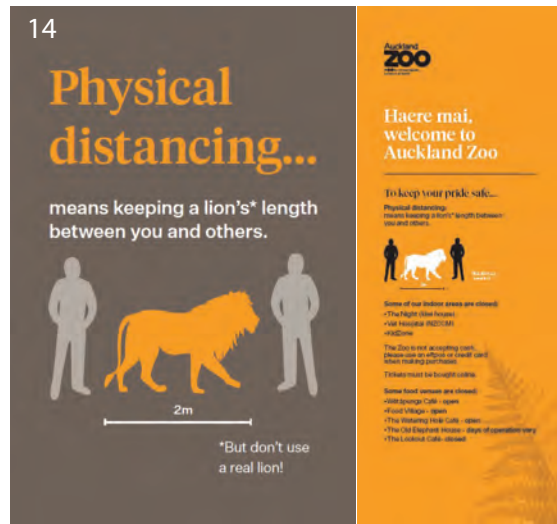
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Zooquaria

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## FROM THE DIRECTOR'S CHAIR

As I sit down – at home rather than in the office – to write this, it is difficult to know quite where to start. The Covid-19 crisis has changed the world so much and will have long-lasting impacts on how everyone lives and works. It is hard to believe that at the start of the year we were excited about 2020 being the year that biodiversity would capture the attention of the world and help push humanity to change course. Within a few months, biodiversity had indeed captured the attention of the world, brutally and inescapably, but we do not yet know if the crisis will make humanity reconsider its direction.

One thing that is constant though, is the absolute commitment of our community to care for our animals and to work together to support each other. At the peak of the crisis, 96% of EAZA Member zoos and aquariums were closed; for many this was the longest time they had been closed in their history. The amount of pressure and uncertainty this has caused and is still causing our Members is immense, but we should take great pride in how progressive zoos and aquariums reacted. We saw staff rapidly adapting to new working conditions, switching to innovative and engaging online activities to keep people connected with animals and our work. Our community shared best practice examples for animal care, health and safety, and operations and engagement, comparing the experiences of institutions in the same and different countries across our region. We've seen Members lending their influence and resources to reinforce collective actions to lobby for our needs. And from another angle, we have seen a huge outpouring of support from people, vocally, financially and via actions such as petitions, demonstrating that progressive zoos and aquariums play a much-appreciated and vital role in our societies and in the conservation of nature.

Our zoos and aquariums are now more important than ever. No one else has such an ability to educate and act on the importance of maintaining species, ecosystems and the fragile links between animal health, human health and planetary health. Many of our opportunities to demonstrate these abilities this year have needed to be postponed or re-imagined. The sad decision was made to cancel our face-to-face Conservation Forum and Annual Conference; however, we will be providing virtual offerings to share our experiences and continue to lead on conservation. The IUCN World Conservation Congress and the 15th meeting of the Conference of the Parties (CoP 15) to the Convention on Biological Diversity (CBD) have both been postponed, but we remain committed to providing our input into these key conservation meetings to help achieve lasting and effective outcomes.

An additional area of conservation work to which we will contribute this year is the EU Biodiversity Strategy. It is sadly

acknowledged that the European Union and Member States have failed to deliver on many aspects of the EU Biodiversity Strategy to 2020. Things need to change to ensure this does not happen again. EAZA welcomes the recently published EU Biodiversity Strategy for 2030 as an ambitious plan for protecting nature and reversing the degradation of ecosystems in Europe and beyond. Nevertheless, the Member States and their partners will need to work hard to fulfil these ambitions. With two-thirds of EAZA Members based in the European Union, we stand ready to play our part. We have released a Position Statement whereby we respond to the points in the EU Biodiversity Strategy for 2030 that are most relevant to progressive zoos and aquariums, make recommendations for the implementation of the Strategy and for the global negotiations, and outline areas in which the EAZA community can provide its expertise. The EAZA Executive Office staff will be using this Position Statement in a variety of lobbying efforts, and I encourage all our Members to do the same. In this way we will have a strong and united call for our involvement and the ability to demonstrate the important roles that progressive zoos and aquariums play in biodiversity conservation.

Speaking of strategies, you may be wondering where the current crisis leaves plans for developing our own EAZA Strategy 2021–2025. Our Committees and Working Groups have remained dedicated to looking ahead with ambition and realism to what our future directions will be. Their action plans will be integrated into our overarching strategy due for roll-out from 2021. It is clear that our newly approved vision statement – 'Progressive zoos and aquariums saving species together with you' – remains a valid statement of our intent and the future world we envisage as we emerge from this crisis. I look forward to working with you on making it a reality.

**Myfanwy Griffith**  
Executive Director, EAZA

## FROM OUR CHAIRMAN

THOMAS KAUFFELS



### Dear colleagues,

There is no need for me to remark on the seriousness of the challenge we have faced over the last few months with the Covid-19 pandemic, and which we will continue to face for months or years to come. Many zoos and aquariums are now open and there seems to be light at the end of the tunnel. Unfortunately, this might be too late for some of our Members, and indeed, like all of you, I felt an immense sadness to hear of the closure of Living Coasts in the UK, a respected and popular Member of EAZA and a strong actor for coastal conservation in the area.

It is tempting to look at what has happened, and what will happen, and be downhearted. Undoubtedly, the financial pressure on zoos and aquariums and the uncertainty facing *in situ* projects is worrying for the future of the natural world, as well as for everyone who loves it and wants to see it protected. But instead of despair, I would like to ask every Member to look at the commitment and appreciation that has been shown during this crisis and be glad that our planet has such allies.

National Associations have brought zoos and aquariums right to the heart of policy agendas across Europe. On behalf of every Member, I thank the

Associations for their extraordinary efforts and for demonstrating the role that zoos and aquariums play in their communities and beyond. We must ensure that we remain in view for our democratic representatives and that that view is an accurate one – and we must use the attention to pressure governments to do more to protect species.

We have proven that our Association can function under some tough circumstances. We may have had to cancel all of our events from March onwards, but Members have been meeting, talking and sharing knowledge by all the means that are available. We have held and will hold informative and useful meetings that have the potential to reach more people from inside and outside our community than ever before and get them discussing the ways in which zoos and aquariums can be most effective for nature. This dialogue is priceless, in that it can help to involve many more people in our collaborations – to put more shoulders to the wheel – and to let us hear a more diverse range of opinions that could help us to save species over the long run. Let's not lose this openness.

Finally, we have seen the love that the people of our communities have for our institutions. It is humbling to see the committed activism of our supporters in raising funds, calling for

quarantine restrictions to be lifted responsibly for zoos and aquariums, and tuning in to the countless educational and other activities you have designed for them. People have shown that support for zoos and aquariums, especially those accredited by EAZA and the National Associations, is widespread and mainstream. Let us therefore never forget to earn that love, respect and support by doing everything we can to connect people with nature, involve them in species conservation and tell them about the extraordinary lives of the animals that we can work together to save. And in conservation terms, let's make sure that we are able to prove our contribution and justify that support – I therefore ask that every one of you enter as much data as possible into the EAZA Conservation Database.

Colleagues, friends, I salute your resilience, your imagination, your cooperation and most of all your commitment. Let's continue to work together to do our part to ensure that nature is protected and a crisis such as this does not happen again; and as we design a strategy for the next part of our future, I ask you to keep in mind our vision statement: 'Progressive zoos and aquariums saving species together with you'.

**Thomas Kauffels**  
Chair, EAZA

# NOTICEBOARD

## CANCELLATIONS

Due to the Covid-19 crisis, all EAZA events and meetings have been cancelled until September at the earliest. The Executive Office will continually review the government guidance on disease control, and decisions about other meetings during the year will be addressed on an individual basis.

Due to these cancellations, a number of online activities have been taking place, including webinars on welfare (to replace the Animal Welfare Forum) which can be found at the EAZA YouTube page:

<https://www.youtube.com/user/EAZAvideo>

Details of the Annual Conference programme (online) will be distributed as soon as possible.

## EAZA COUNCIL

With Directors' Days cancelled, the spring meeting of the EAZA Council took place online on 22 April. The following decisions were made regarding approval of recommendations for institutions in the EAZA application procedure.

### NEW APPLICANTS

**Temporary Membership (2 years) awarded to:**

- Peak Wildlife Park, UK
- Río Safari Elche, Spain
- Slottsskogens Djurpark, Sweden

**Full Membership awarded to:**

- Orsa Rovdjurspark, Sweden
- AQUATIS Aquarium-Vivarium, Switzerland

**New Candidates for Membership:**

- Krasnoyarsk Park of Flora and Fauna "Roev Ruchey", Russia
- Gan-Garoo Australian Park, Israel
- Negev Zoo, Israel
- Rostov-on-Don Zoo, Russia

### MAINTAIN FULL MEMBERSHIP AND ACCREDITATION

- La Vallée des Singes, France
- Śląski Ogród Zoologiczny (Chorzów), Poland
- Réserve Africaine de Sigean, France
- Alpenzoo Innsbruck, Austria
- Artis Zoo, the Netherlands
- Blackpool Zoo, UK
- Diergaard Blijdorp, the Netherlands
- Parco Faunistico 'La Torbiera', Italy
- Musée d'Histoire Naturelle et Vivarium de Tournai, Belgium
- Edinburgh Zoo, UK
- Paradise Wildlife Park, UK
- Miejski Ogród Zoologiczny (Zoo Płock), Poland
- Gdański Ogród Zoologiczny, Poland
- Réserve d'Animaux Sauvages, Belgium

### WITHDRAWING MEMBERS

- Stichting 'De Harpij', the Netherlands (Associate Member – Zoo staff organisation)
- Zoo de Pont-Scorff, France

### CORPORATE MEMBERS

**New Corporate Members**

- Dinodon, USA
- BLV Licht und Vakuumtechnik GmbH, Germany
- Aqua-Sander, Germany
- Jakob Rope Systems, Switzerland

**Withdrawing Corporate Members**

- PGAV Architects
- Lionhouse Architects

### FURTHER DECISIONS OF COUNCIL

The EAZA Membership and Accreditation Manual and Pathways of Communication protocols for relationships between EAZA and National Associations regarding complaints of joint members were approved.

### DECISIONS FROM THE AGM

The 2019 accounts were presented. The 2020 and 2021 budgets were revised and discussed with the key aims of:

- being considerate to Members during the crisis and offering maximum flexibility;
- supporting as many Members as possible to stay with EAZA long-term; and
- maintaining the key strategic directions of the Association with minimum negative impact on core activities.

A number of financial measures were agreed to help Members with membership fees. If your institution needs more details on these measures, please contact the Executive Office.

## EAZA CORPORATE MEMBERS

AB Aqua Medic GmbH  
Aqua-Sander  
Aqua-Teknik A/S  
Arie Blok Animal Nutrition  
Beresford SAS  
Billings Productions, Inc  
BioZoo Information  
Brogaarden ApS  
Bureau d'Etudes AKONGO  
Bureau d'Etudes Bioparc  
Carl Stahl Architecture  
China Light Festival BV  
Close to Bone  
Crossborder Animal Services BV  
Dino Don Inc.  
Dorset Identification BV  
EKIPA  
Fachjan  
Fox Consulting  
Gantner Ticketing  
Granovit  
HMJ Design  
IFA SKYFAST  
Immotion  
Jakob Rope Systems  
KaGo & Hammerschmidt GmbH  
Kiezebrink International  
Marine Nutrition  
Mazuri  
Nautilus  
Nieuwkoop  
Pangea Rocks  
Ralf Nature  
Rasbach Architeken  
Ravensden Plc  
Ray Hole Architects  
Saint Laurent S.A.  
Sanero Kunstfelsen  
Seafoodia  
TVK Zoodesign  
Zoological Adviser  
Zoologistics  
Zoopoli  
Zooprofs

## COVID-19 RESPONSE DOCUMENTS

During the crisis, the Executive Office published a number of documents including guidance on animal management, comparisons of situations and government responses across all countries in our region, reopening guidance and communications guidance for reopening.

Additionally, a collaboration with EAZWV provided guidance on the transmissibility of the disease between animals and humans in both directions. If you need these documents, please contact the EAZA Executive Office ([info@eaza.net](mailto:info@eaza.net)).



# Just keep swimming

HOW EAZA HAS CARRIED ON CAMPAIGNING DESPITE THE CONSTRAINTS OF A GLOBAL PANDEMIC

Laura Myers, EAZA Academy Manager

In common with the rest of the zoo world, the Which Fish? campaign has not been immune to the effects of the Covid-19 pandemic. The campaign committee has been affected by changes in work status, and many campaign participants have had their plans to deliver on their campaign commitments significantly affected.

Nevertheless, conservation issues can't wait while we deal with the proximate issues of the pandemic, and sustainable marine consumption is no exception to this. The campaign team also believes that the positive approach of the campaign is a good one for this unprecedented time.

Most of the campaign participants have committed to raising awareness of the three axes of the campaign, namely sustainable consumption of marine products by humans, sustainable consumption of marine products by (zoo and aquarium) animals, and sustainable aquatic collection planning for zoos and aquariums. Raising awareness has become more challenging than anyone anticipated, but certainly far from impossible.

Many people have been left feeling powerless by the current situation, so it can be a good moment to focus on the empowering aspects of the Which Fish? campaign, encouraging visitors and supporters to take small, achievable actions by changing their own choices and habits to more sustainable ones and to act in the interests of marine biodiversity.

The more traditional methods for

awareness-raising such as keeper talks and guest experiences may not be available for many of us at the moment, but at the same time we are almost all much more open to the possibilities and power of virtual engagements.

It's been heartening to see so many live social media interactions and behind-the-scenes videos shared with the public while it's difficult for us to welcome visitors in person to our institutions. In addition, these virtual engagements provide a great opportunity to raise awareness of all the axes of the campaign, whether that's talking about your population management successes in your aquarium, sharing innovations in sustainable animal feeding, or teaching your visitors how they can make more sustainable choices for feeding themselves. Campaign participants Warsaw Zoo made an excellent video for World Ocean Day which touches on all three campaign axes.

You can also challenge your visitors (or staff) to share their sustainability knowledge and cooking talents by preparing a tasty and sustainable dish using one or more of the species from the campaign green list, available on the website at [whichfish.eu](http://whichfish.eu). Recipe inspiration can be found on the Which Fish? campaign Facebook page and in the campaign participant newsletter.

Many schools are also still experiencing disruptions, as large numbers of children continue to be educated at home. This is a great opportunity to promote the Which Fish?

educational kit, which has resources and activities on fishing that can readily be adapted for use at home. With changes and challenges to food supply chains, the pandemic also presents an opportunity for us all to consider how to integrate sustainability into acquisition policies and procedures. With many institutions having to restructure aspects of their food supply, it's a chance to incorporate more sustainable practices for the consumption of marine products at an institutional level.

While of course there are many other factors that zoos and aquariums need to consider at this moment, this may provide us with a moment to challenge our suppliers by asking them the same questions that we want our visitors to start asking about the products they buy, such as whether the species used can be considered sustainable, if they are from a part of the ocean with resilient fish stocks, and if they have been harvested using more sustainable methods.

It has been a difficult period for the campaign, as for many of you, but we are starting to see signs that our creativity and determination can help us recover from this enormous challenge. We would like to think that this same creativity and determination can help our oceans recover from the enormous challenge that unsustainable human activities represent. We encourage you to sign up to join us in this challenge if you are not yet a campaign participant, share the resources available from the website, and engage with us on social media.



EAZA is supported in this work by the European Union LIFE NGO funding programme. The European Union is not responsible for the views displayed in publications and/or in conjunction with the activities for which the grant is used

## NEW ARRIVALS

### YELLOW-CRESTED COCKATOOS POSE CHALLENGES AT NEUWIED ZOO

THE CRITICALLY ENDANGERED SPECIES (*Cacatua sulphurea*) includes seven subspecies, of which one, *Cacatua sulphurea parvula*, successfully reproduced in Neuwied Zoo, Germany in the summer of last year writes Tessa Schardt, Scientific Assistant.

After examining various individuals at EAZA institutions, a male cockatoo from Stuttgart Zoo was selected as a potential mating partner for a female bird already living at Neuwied Zoo in February 2019. Both birds had been confiscated from private holders due to inadequate husbandry conditions.

Separated by a double-layered grid and under camera observation in a private area behind the scenes, the two birds spent about a week getting to know each other. When the potential breeding partners were finally brought together, they immediately started stripping the bark of one of the trees in the aviary and later began grooming each other.

In March that year, two nesting boxes were offered, one inside the house, the other in the outside aviary. As male cockatoos are known to show intraspecific aggression in human care, the nesting boxes were constructed



with two entrance holes and a wooden board between them to create an escape opportunity for the female bird. Furthermore, all four entrance holes were closed with cardboard sheets to increase the interest of the birds.

The hen inspected both, removed the cardboard and then settled for the outside one. The second trigger the keepers used was to stop rationing the parrots' diet and offer a surplus of

mixed grains combined with a huge amount of proteins from March to July.

On 8 May keepers found the first egg, followed by two more over the next four days. Between 10 June and 15 June 2.1 chicks hatched. Keepers weighed them every other day, recording the data to decide whether it would be necessary to add feeding or not. Only the smaller male required additional nutrition on two occasions.





About two months after hatching, the first chick left the nest and slowly learned to fly short distances. The family seemed harmonious at this point, so they were left together as a group. Unfortunately, this changed rather suddenly about six weeks after the chicks fledged and the only female offspring was killed by the parents without the keepers noticing any behaviour change beforehand.

This tragic event leads us to one of the problems Neuwied Zoo and the EAZA Parrot TAG are facing trying to breed *Cacatua sulphurea parvula* and developing an EEP for 2020: white cockatoo species are often very aggressive towards conspecifics and frequently imprint onto humans rather than birds, especially those obtained from private holders. Other considerable difficulties are the lack of females, the declining number of holding institutions and the still insufficient knowledge in distinguishing subspecies and recognising hybrids. Even if one is lucky enough to put together a pair of birds that fits genetically as well as in behavioural aspects, they often carry circo-, polyoma- or bornavirus and are therefore not suitable for breeding.

To address those issues, in 2016 the EAZA Parrot TAG set the goal of grading the individuals housed by EAZA institutions by their subspecies and to exclude hybrids. There is evidence that at least the stocks of the subspecies *C. s. sulphurea* and *C. s. parvula* look promising for EEP purposes. As there already is an EEP for the orange-crested cockatoo *C. s. citrinocristata* at Dublin Zoo (coordinated by Sandra Molloy), the TAG aims for more *ex situ* management for the different subspecies of this intelligent Indonesian parrot. Furthermore, a growing number of holding institutions and consistent virus management is needed to bring together more single birds from different institutions, not only for animal welfare reasons but also for successful *ex situ* breeding on the one hand and for raising awareness of illegal pet trading and habitat destruction in Indonesia on the other. Best Practice Guidelines for breeding white cockatoo species already exist.

## BROWN TROUT SUCCESSFULLY REINTRODUCED FROM HELLABRUNN ZOO TO THE RIVER ISAR



BUILT AROUND A WATERMILL, the Mühlendorf section of the Hellabrunn Zoo in Germany is home to native species of wild animals and old livestock breeds. Since July 2018 visitors have been fascinated by the diversity offered by nature close to home. Many visitors are surprised to learn that numerous native fish species are also endangered; but this does explain why Hellabrunn Zoo built a fish hatchery in the Mühlendorf to breed endangered fish species with the aim of their reintroduction as an *in situ* project.

At the start of this project, we began by breeding the relatively robust North American rainbow trout (*Oncorhynchus mykiss*) to test the newly built hatchery. To our delight, we successfully reared several hundred rainbow trout from eggs to adults. This gave us confidence that the fish hatchery seemed to work. We suspect a key aspect to be the cold oxygenised fresh water that is constantly flowing through the breeding facility. In addition, our efforts to keep the breeding basin scrupulously clean seemed to pay off; we changed the water and removed surplus food, excrements and unhealthy eggs several times a day.

After this initial success, we began the more difficult project: hatching the more sensitive brown trout (*Salmo trutta*). As we feared, this species was much harder to rear than the rainbow trout. We suspected that the brown trout hatchlings are more sensitive to light than their rainbow trout cousins. Consequently, we darkened the hatching tanks with custom-made covers. With those, the young animals greatly benefited from reduced light levels, while still being visible to visitors. We also realised that the brown trout was more

aggressive to conspecifics than the rainbow trout. By reducing the group size and removing injured animals we were able to improve the situation, keeping hostilities to a low level.

Against all the odds, Hellabrunn Zoo has now successfully reared many brown trout. When they reached a size of about 12cm, we reduced the amount of available food sources to prepare them for reintroduction into the wild in autumn and winter. In October 2019, supported by the Isarfischer, an association of Munich fishermen, we were able to reintroduce the first group of our young trout into the River Isar. The river flows through Munich and is one of the original habitats of the brown trout, but hydroelectric power plants and displacement by rainbow trout have led to alarmingly low animal numbers. At the beginning of 2020, we reintroduced about 500 brown trout into the wild.

To monitor the fish population in the Isar, once a year the Isarfischer dam the waters of the Auer Mühlbach, a tributary to the main River Isar that flows through Hellabrunn Zoo and also drives the watermill next to the hatchery. Based on the numbers they take, we hope to receive feedback on the survival rate of the released brown trout soon.

We would like to expand the *in situ* project even further and exhibit more native fish species for our visitors. Therefore, we plan to breed the European grayling (*Thymallus thymallus*) next. We are looking forward to the process of fine-tuning their environment to meet their specific demands and to be able to support the local fish populations with regular reintroductions.

# Let's help nature become part of the solution

EAZA EU POLICY MANAGER TOMASZ RUSEK TALKS TO LUC BAS, DIRECTOR OF THE IUCN EUROPEAN REGIONAL OFFICE

**TR: We planned to discuss what 2020 means as the 'super-year for biodiversity'. Instead, we are talking in a totally new context shaped by Covid-19.**

**LB:** Let me begin by expressing my sympathy for EAZA Members, many of whom had to close their gates to the public for the longest time in history. Zoos, aquariums and their associations have been an important partner for IUCN for decades. My colleagues and I witness your commitment to conservation in many IUCN SSC Specialist Groups and at all our major events. I also witnessed it while attending your annual conference in Valencia last year. Today this commitment is more important than ever. I hope the whole EAZA community will get safely through this crisis.

**TR: Thank you for these kind words. How is the pandemic affecting IUCN?**

**LB:** The most visible effect is the delay of the IUCN World Conservation Congress in Marseille from June 2020 to January of next year. The IUCN Congress will be one of the decisive stages for shaping the post-2020 global biodiversity framework. We have been building the momentum for several years. It won't culminate with the 'biodiversity super-year' in 2020, but we can use the time to attract even more attention to conservation for 2021.

**TR: What is the role of the IUCN congresses?**

**LB:** They bring together governments and civil society to set priorities for conservation and sustainable development. The outcomes from Marseille will influence the decisions at the summit of the Convention on Biological Diversity (CBD) in Kunming,

which has also been delayed until 2021.

In the past, four global conventions had their roots in the IUCN congresses: the Ramsar Convention on Wetlands, the UNESCO World Heritage Convention, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and, finally, the CBD.

It was through an IUCN congress that the world recognised climate change as an emerging challenge. Congress resolutions have supported indigenous peoples, gender mainstreaming and the connection between nature conservation and human rights. IUCN's focus on species conservation and protected areas has led to the development of global standards in these fields.

**TR: The CBD summit in Kunming will set new targets for biodiversity protection. Meanwhile, the targets of the past two decades have not been met. Will we learn from this failure?**

**LB:** I am optimistic. Back in 2000 and 2010, biodiversity was still a separate marginalised goal, like climate action. Then the world began acknowledging that these two challenges are interlinked with the other challenges of sustainable development. That led to the creation of the UN Sustainable Development Goals (SDGs), which 193 countries signed up to in 2015. The SDGs help us to move from the old silo approach to working in ways that can simultaneously benefit the environment and human prosperity.

The EU has recently published its Biodiversity Strategy for 2030. It is a chance for Europe to establish itself as a leader in the global arena ahead of the Kunming negotiations. By integrating this Strategy within the EU Green Deal, the EU is responding to the SDGs in that it aligns biodiversity and climate action with all the other challenges. Now it's



up to the EU Member States to show ambition on the national level.

**TR: I am sure all readers of Zooquaria are familiar with the 17 colourful icons of the SDGs. But how do we actually translate them into an improved state of nature?**

**LB:** It starts with joint ownership of the next biodiversity framework by all those who have an impact on the environment. All those people, from the conservation community – including zoos and aquariums – all the way to the farmers and heavy industry, need to be fully on board with the next targets that will be decided in Kunming. At the end of the day, all the stakeholders need to step out of their comfort zones to see what is in this for them.

**TR: Zoos and aquariums too?**

**LB:** Yes. Everyone in the conservation community needs to make the case for the benefits that nature brings us. Your communication power is immense, and I know you have been putting it to good use. You educate your visitors about all the drivers of biodiversity loss.



You explain why healthy ecosystems matter not only to nature, but also to us humans and to our wellbeing.

I would challenge you to step up this work even more. As well as communicating about the tropical deforestation that we cause by importing products that are not sustainable, you have great potential to talk about the biggest challenge for the European environment – and that is unsustainable European agriculture. You can reach millions of people, from cities and rural areas alike, with positive messages about how a different approach to agriculture could make a positive impact on biodiversity around us.

**TR: What about lobbying governments to be more ambitious? Can we play a role there too?**

**LB:** Absolutely, because you have a clear mandate for it. The hundreds of EAZA *ex situ* programmes will make an impact only if they are matched by serious, measurable efforts *in situ* to save the species and their habitats. This includes direct conservation work as well as the bigger societal challenge of taking away

the pressures on the environment. The EU Strategy lays down good targets – but European countries can do a lot more voluntarily on top of the targets.

For example, countries could work with their national Red Lists of threatened species in a much more strategic way. Each country could prioritise several critical species from its list and pledge to let them fully recover or at least improve their status, e.g. from Endangered to Vulnerable in a set time frame, such as a decade. That would be an easily measurable commitment. Of course, each species should be carefully assessed for whether it requires contribution from *ex situ*. This is the spirit of the IUCN Guidelines on the Use of *Ex situ* Management for Species Conservation and the One Plan approach, which was developed by the IUCN SSC Conservation Planning Specialist Group and which EAZA follows.

**TR: Will there be enough funds for ambitious action?**

Thanks to the Intergovernmental Science-Policy Platform on Biodiversity and Eco-System Services (IPBES) report

and other alarming analyses, we know that business as usual is not possible if we want to slow climate change and stop the decline of biodiversity. That also means dedicating more public funds to this goal. The money is available – it is out there in society; it just needs to be channelled in the right direction.

Securing enough funding and spending it correctly is not the only challenge. We also need to make sure that we use Earth's natural capital more wisely. Our life depends on it. It is possible to use it in ways that simultaneously provide human wellbeing and biodiversity benefits. The concept of 'nature-based solutions' was defined at the last IUCN Congress in 2016, and in Marseille we will work on a global standard and universal principles to ensure that the concept is used in the right way.

We can all help nature become part of the solution – but in a much more sustainable way.

**TR: Thank you for the interview.**

**LB:** Thank you. I look forward to seeing many *Zooquaria* readers at the congress in Marseille!

# A bright future for songbirds

THE SILENT FOREST CAMPAIGN HAS COME TO AN END, AND CAN RIGHTLY CELEBRATE ITS SUCCESS – BUT ITS FOUNDERS ARE DETERMINED THAT THEIR EFFORTS TO SAVE ASIAN SONGBIRDS WILL GO ON

Simon Bruslund, Barbara Tesařová, Matyáš Adam, Nigel Collar, Andrew Owen, Roland Wirth, David Jeggo, William van Lint, Constanze Merger, Lucia Schröder and Tomas Ouhel

It seems that songbirds have become part of the conservation agenda for good; over the past decade, several dozen excellent publications documenting various aspects of the Asian songbird crisis have appeared. Even so, songbird conservation in Asia has struggled to gain the attention needed to make an impact. It takes more than just good research papers to get real attention and funding for what is often thought of as a fringe group of animals within the zoo and conservation communities.

An informal working group within EAZA, under the Songbird TAG, has dedicated much time to this subject since 2009. Deliberately kept small to remain effective, we initially operated under the title ‘Working Group for the Conservation of Asian Songbirds Threatened by Trade’. Meeting mostly twice annually, we struggled to get institutional support and participation, but we were reluctant to develop a more formal structure in case we got bogged down by bureaucratic procedures.

The group was heavily involved in the first Songbird Crisis Summit, held in Singapore in 2015, and we then realised that we needed to define the roles and goals of the group in relation to other entities. This proved rather difficult, as the same few people tended to be involved in all the different activities and roles.

The 2015 Songbird Crisis Summit triggered two important developments. First, it gave real momentum to the formation of an IUCN specialist group, which was formally approved as the Asian Songbird Trade Specialist Group (ASTSG) in 2018. Second, it stimulated the idea of applying for an EAZA conservation campaign on songbirds threatened by trade.

Before the two-year Silent Forest Campaign started in 2017, the working group adopted the new name



Threatened Asian Songbird Alliance (TASA), remaining an informal grouping under the TAG to be more visual in the EAZA landscape. Initially, the application to run a campaign for songbirds met with little enthusiasm. The EAZA Executive Office (EEO), Conservation Committee and zoo educators’ community all expressed reservations about how ambitious and measurable the proposed campaign targets were. Fortunately, the campaign core group included very experienced zoo educators, and the negotiations resulted in a set of modifications that gave everyone the courage to double the fundraising goals, and the application was duly approved.

## SETTING GOALS

The primary goal of this campaign, with pre-selected *ex situ* and *in situ* projects within the Asian region, was fundraising. We were humbled at the level of commitment of participating institutions and were amazed and delighted when donations swept past our ambitious €400,000 target

and resulted in more than €525,000 being invested in Asian songbird conservation during or just after the campaign. A small amount of pledged funding is still pending. Regular updates from all the funded projects can be found at [www.silentforest.eu](http://www.silentforest.eu).

The targets in terms of the number of individual EAZA institutions participating in the campaign were also met and surpassed, with 193 EAZA institutions participating. Of these, 150 registered within the first year of the campaign. Additionally, 53 non-EAZA organisations signed up.

One important component of the campaign has been the EAZA Position Statement on Songbird Trade. This is a formulation of intent on behalf of all EAZA Members, and we are convinced that all EAZA Members who have insights into current trade practices will support and endorse it. In the near future we must be even more self-critical in regard to sourcing songbirds and other animals when there are alternatives.

In meetings with the Environment



EAZA is supported in this work by the European Union LIFE NGO funding programme. The European Union is not responsible for the views displayed in publications and/or in conjunction with the activities for which the grant is used



Ministry in Indonesia in late 2017, it became clear that we also have deficiencies in the legislation and enforcement of the regulations in place to protect songbirds in Europe. As we wish to work on common problems and functional solutions with scientific authorities and enforcement agencies in Indonesia, this also includes doing our homework in Europe. We cannot afford for EAZA institutions knowingly or unknowingly to be involved in the very activities we are campaigning against elsewhere.

The purchase or exchange of wild-caught songbirds imported into the EU, where large commercial shipments have been banned since 2006, is not ethically consistent with the aspiration of modern zoological institutions. Illegal imports are frequent and unacceptable. In most cases, the capture of songbirds is either unsustainable or illegal; if the species are protected in the country of origin, the export of them is illegal. The entry of such shipments into the EU is not only illegal but also unethical and, due to the absence of any kind of quarantine measures, unsafe: birds are moved from the most uncontrolled mixed wildlife and domestic animal markets in Asia and arrive on public display in crowded bird markets in the UK, Netherlands, Germany and Italy within 48 hours. It is clear that this practice cannot be condoned; apart from the obvious breaking and bending of rules in the EU, there are cases in Asia of people going to prison for attempting to traffic birds for the international market.

The EAZA Position Statement on Songbird Trade has been a useful component of EAZA's ongoing lobby work in Brussels and has even been

adapted and modified into an IUCN motion for the upcoming IUCN World Conservation Conference, urging nations and stakeholders to support and initiate stronger songbird conservation measures. The recently formed EAZA Working Group on Wildlife Trade will surely also promote the understanding and tackling of these issues and will have Silent Forest core team members amongst their membership as well.

Silent Forest core team members have also started several initiatives for collecting data on the international songbird trade. These data will be an invaluable resource for future songbird regional collection plans (RCPs) and as a source of documentation for political decision-makers e.g. by listing more negatively affected species on CITES or on a higher appendix and generally for improving regional legislation and enforcement.

In the past two years many initiatives have sought to improve husbandry and population management for songbirds in EAZA institutions, including a first RCP session in the new integrated style. Furthermore, a first Long-term Management Planning workshop was carried out for the Emei Shan Liocichla (*Liocichla omeiensis*). Three best practice guidelines were published, and more are coming soon; in addition, several new EEPs are now starting their work.

The many Silent Forest and songbird exhibitions, theme days and additional education materials from zoos throughout Europe have all contributed to a greater public understanding of the work that zoos support, and in particular of the conservation commitment that EAZA institutions have. It is encouraging to learn that so many zoos have decided

to make their Silent Forest installations long-term or even permanent.

## PLANNING FOR THE FUTURE

The EEP Committee approved the name change of the EAZA Passeriformes TAG to 'EAZA Songbird TAG' as of 6 January 2020, linking the TAG even more explicitly to the campaign that brought attention to this fantastic and diverse group of birds.

Meanwhile TASA has now adopted the name 'Silent Forest Working Group' and taken over the campaign logo and website. The roles and mandate of this group need to be redefined to complement the international effort being undertaken by the ASTSG. The focus will primarily be on the European region and involve EAZA population management, monitoring regional trade and cooperation with European environmental authorities, sharing and exchanging information and maintaining fundraising activities. Decisions on the allocation of funds raised by the working groups are deliberately handed over to the ASTSG in order to have a transparent and independent process. In the future a structured application process will be established.

The expenses and manpower needed for the media management and content procurement of the [www.silentforest.eu](http://www.silentforest.eu) website are kindly covered by the zoos involved in the Silent Forest Working Group. The educational resources developed by zoos and offered to participants in the campaign have become open source and are freely available to anyone wishing to do environmental education on unsustainable and illegal songbird trade. The merchandise will, however, no longer be available. Importantly, fundraising will continue with the same EAZA account for at least another five years. Donations should always be marked 'Silent Forest' and projects will be selected in accordance with priorities determined by the IUCN SSC Asian Songbird Trade Specialist Group. Please also see [www.asiansongbirdtradesg.com](http://www.asiansongbirdtradesg.com).

We warmly thank all the supporters of the Silent Forest Campaign, which ended in 2019. You have all helped to achieve amazing fundraising results and put songbirds firmly on the EAZA conservation agenda.

# Adapt and survive

IN COMMON WITH THE WHOLE ZOO COMMUNITY, EDUCATORS HAVE FACED UNPRECEDENTED CHALLENGES DURING THE COVID-19 PANDEMIC. HERE, TWO EAZA EDUCATORS SHARE THEIR EXPERIENCES OF CONTINUING THEIR EDUCATION MISSION AMIDST A GLOBAL CRISIS.

## DELIVERING VIRTUAL ENGAGEMENT

Antonieta Costa, Head of Education, Lisbon Zoo, Portugal; Education Committee Vice-Chair, IZE Regional Representative

Lisbon Zoo closed on 16 March when the government declared a state of emergency; however it quickly reinvented itself to keep taking the mission of Conservation Education to families, students and teachers.

Our first step was to adapt our on-site educational programmes into virtual ones. The change was very fast, so we began by adapting the eight-hour Environmental Education workshops developed for university students into 45-minute Zoom sessions targeted at families. There were eight 'Meet the ZOO Biologist' sessions covering nature conservation themes, and around 3,000 families participated during the emergency closure.

Unable to offer face-to-face Easter Camps for participants from three to 16 years old, we decided to create online activities on our blog during the Easter holidays. For 10 days, we launched different activities daily, broken down into four age groups, and were delighted when more than 26,000 people participated. We also launched a contest, challenging families to send us videos of them engaging in the activities, which allowed us to measure the degree of satisfaction and participation. A total of 3,560 families sent us videos.

After Easter, we had a new challenge: classroom activities were still suspended for schools, so we moved forward with the 'ZOO at Home' programme for schools. This consists of online sessions for schools and educational resources on our website and YouTube channel, with themes related to biodiversity and nature conservation and aligned with the National Education Strategy for Citizenship and the National Environmental Education Framework

for Sustainability. 'ZOO at Home' was also released on the Portuguese Education Ministry website for all schools (Lisbon Zoo's school programmes have been recognised by the ministry since 2009) and our online sessions and complementary activities have also been used by teachers on the ministry's public television channel.

For 'ZOO at Home' we adapted our face-to-face programmes for schools, in which 75,000 students typically participate annually, for virtual sessions. Since 2013 we have been developing online educational programmes using Skype in the Classroom, with the support of Microsoft Education. This experience was extremely useful during our urgent adaptation to the technological world. Even so, it was a huge challenge to meet the curricular themes of each school year without the face-to-face environment that a zoo visit provides.

In the 'ZOO at Home' area on our website we share the themes, schedule and programme of the online videos that took place between 20 April and 29 May; each day was dedicated to a different school level. The themes covered were: Sustainability, Ethics and Citizenship, Sustainable Production and Consumption, and Biodiversity and Water, which all link to national education strategies. All of these online videos are available through YouTube and also through the MEO App, thus reaching more students and families.

This area of our website also had a set of educational resources with complementary activities and texts, adapted to the various levels/cycles of education and teaching, covering several areas of knowledge related to Biodiversity and Nature Conservation.

We are planning a virtual Summer Camp, this time with weekly family challenges in nature and webinars.

The biggest challenge was undoubtedly the huge change of scenery, as we all adapted to working from home. We have a team of six

people in the Education Department, creating new educational strategies for the current reality, always with the goal of taking the zoo and the conservation of species and their habitats to as many people as possible. The resources available to create strategies and content on platforms that have so far been little explored were another challenge that required more research and a new way of working.

The other challenge, of course, was to fulfil the professional goals that we set ourselves each day while dealing with the pressures and demands of the whole Covid-19 situation. Responding to countless requests and to the need to put our activities online as quickly as possible required a new agility and huge personal effort to deliver all that was required, including housework, support for family members and, above all, the demands of schoolwork for our children. As professionals, parents and sons/daughters, we had to develop several extra pairs of hands to embrace this new and challenging experience.

Our chief goal has always been to continue to involve families, children, young people and teachers in the great zoo conservation mission, through creative activities so that we can all overcome this unique set of events. Without intending to replace the face-to-face visit (not least because it is irreplaceable) we aim to actively contribute to the wellbeing of families, to be a support and resource for the school community (students, teachers and parents), and to maintain and strengthen the connection between the general public and our zoo and species conservation.

Zoos are an innovative learning space with a unique ability to inspire and encourage different types of audience to change their behaviour to protect biodiversity. Here, teachers can teach a different class, outdoors or online, and have all the support they need to complement the school curriculum in different areas of knowledge. We reopened to the public



after two months and now we welcome our visitors and students again with commitment and enthusiasm as partners in conservation education.

When looking back over the last few months, we would like to celebrate the fact that strength and determination can beat any pandemic, and that dedication and commitment can overcome barriers and make us all better people. We are pleased that we managed to develop the zoo and its conservation education mission even further, that we represented happy times, active learning and a connection with the natural world in difficult times.

We must also remember that the commitment of the Marketing, Communication and Design colleagues was and is essential for the success of this unique project. Finally, we want to remember that we are all a great team: the Lisbon Zoo Team!

#### MANAGING THE RETURN OF VISITORS

Dr Sarah Thomas, Head of Conservation Advocacy and Engagement, Auckland Zoo, New Zealand

As part of New Zealand's nationwide lockdown, Auckland Zoo closed for

61 days from 26 March to 25 May. This is my perspective of our journey to reopening and reflections on some lessons learned.

Once zoos could reopen in New Zealand, staff who had been working from home returned to working onsite a week before we opened to the public. This was to empathetically support them to take time to reconnect to themselves and their teams, and to readjust to working back onsite. It also allowed time for robust training for the new working protocols for our visitor-facing teams and to install new signage, hygiene and safety measures.

We significantly modified our entry

process, limiting visitor numbers with staggered entry times. All guests (including annual pass holders) had to book a specific entry time online before their visit. On arrival, we used a virtual queuing system ([www.nextup.co.nz](http://www.nextup.co.nz)) to control the volume and flow of guests into the zoo and comply with contact tracing requirements.

Novel signage, floor stickers and regular PA announcements provided reminders to physically distance. We made one-way systems on narrow paths and areas that could get congested. Buildings and spaces that could not be managed within the safety restrictions were closed. Keeper talks were cancelled, but we increased the presence of staff (from multiple teams across the zoo) and volunteers at critical locations to help visitors have a safe, enjoyable visit while communicating our wildlife conservation mission.

We implemented a wide range of operational and hygiene measures such as going cashless, physical distance queuing and hygiene screens at catering and retail facilities, takeaway-only food options, multiple hand sanitisers and increased levels of cleaning for toilets and high-contact areas for visitor and staff spaces.

This was what we learned after we reopened:

- 1 We did not open the same zoo as we closed.** Individuals and teams had to work differently, collectively and often in new roles. We merged several teams to become a mega 'engagement team' which worked brilliantly out in the zoo daily connecting with our visitors.
- 2 It is important to get the balance between the volume of people and visitor experience right.** We took a pragmatic approach, deciding to reopen on a Monday, with the first two days reserved solely for our annual pass holders. This allowed us to test all our entry processes, catering, onsite engagement and site safety for physical distancing. We placed a conservative cap on daily numbers despite the first weekend being a public holiday. This was a great decision as increasing the volume further could have compromised the visitor experience and people's feeling of safety.

- 3 Make a plan but be prepared to be flexible and make (many) changes.** We accepted that changes would have to happen even with a good plan in place. With excellent communication through daily briefings for the visitor-facing teams and opportunities to feed back, we had a robust process to suggest, agree and action changes. Make sure you have thought about a plan B (and Plan C) in advance for key things such as when your booking system gets overwhelmed or your virtual queue has a technical hiccup.
- 4 Speaking of a Plan B...** Our floor stickers were awesome but only worked on certain surfaces. They did not stand up to New Zealand winter rain, and our visitors loved to peel them off (and take them home or stick them somewhere else!). We resolved this with non-toxic chalk-based spray paint which power-washes off easily on different floor types, lasts in the rain and is safe for our animals in walk-through habitats.
- 5 Some visitors are better than others.** At reading the pre-visit communications, at booking time slots, at reading signage, at social distancing and understanding why we had to modify the zoo layout to help everyone in this Covid-19 context.
- 6 Only when you reopen will you truly know what areas and activities will be an issue.** Even with no keeper talks and a visitor management plan in place, if you bathe an elephant, do a training session with birds or feed the tortoises, interested visitors will naturally start to gather. Through good radio communication with our keeper teams, our visitor engagement team were able to manage these visitor hotspots effectively throughout the day.
- 7 Not everyone knows they have to book a time slot, and those who do book don't always show up.** Some guests, (mostly our annual pass holder cohort) missed that they had to book a time slot

for entry. Conversely, some guests (again primarily annual pass holders) who had booked time slots didn't always show up.

- 8 Frequent and personalised conversations helped to deliver our key messages and mission.** This was a big unknown. How could we effectively provide a safe, enjoyable and mission-focused visit... at a distance? Happily, we found that visitors wanted to talk to us. They were so excited to be back, reflected on their lockdown experiences and wanted to know more about how the zoo fared while closed. This was a great 'way in' to communicate our care, conservation and the importance of our connections to nature. We also used these conversations to evaluate visitors' experiences of returning to the zoo. This information was collated to help make decisions on future actions and changes.
- 9 Supporting our community during lockdown positively influenced their return to the zoo.** Our online community engagement content during lockdown had clear aims around wellbeing, resilience and keeping our community connected to the zoo's animals, staff and mission... and themselves. On reopening, visitors frequently mentioned this content, and expressed positive sentiments, vocal support and strong gratitude towards the zoo for providing these connections during lockdown. An unexpected outcome of reopening is we have a sense now, more than ever, of the swell of love and support for us from our communities and that the zoo is a highly valued part of the cultural fabric of Aucklanders' lives.
- 10 Be kind and patient – to yourself, colleagues and visitors.** This pandemic has affected us all in lots of different ways. Never underestimate the power of giving time and compassion to reconnect with ourselves, our 'whanau' (extended family and community) and with nature.



# Helping vets to help wildlife

INTRODUCING THE NEW TRANSMISSIBLE DISEASES HANDBOOK FROM THE EUROPEAN ASSOCIATION OF ZOO AND WILDLIFE VETERINARIANS

Rafaela Fiuza, Working Group Coordinator, EAZWV and Katharina Hermann, EAZA Animal Programmes Coordinator

The European Association of Zoo and Wildlife Veterinarians (EAZWV) is the membership organisation representing European veterinarians. Its members are committed to improving the health, welfare and conservation of wildlife through advancements in zoo and wildlife medicine and promotion of the full use of veterinary expertise in the management of wildlife in human care and in the wild.

One of our key strategic actions is the development of the Transmissible Diseases Handbook, a reference manual that provides guidance not only for zoo and wildlife veterinarians, but also for government officials and European legislative authorities dealing with infectious diseases that threaten zoological collections.

The EAZWV Infectious Diseases Working Group was created in the year 2000 at the EAZWV Annual Conference in Paris, and the first edition of the handbook was published in 2002. Regular updates and three new editions followed in 2004, 2006 and 2010. In 2016, the close relationship and aligned objectives with the European Association of Zoos and Aquaria (EAZA) led to both associations combining their efforts and establishing the Joint EAZWV/EAZA Infectious Diseases Working Group. Its goal was to pool resources and increase effectiveness in producing content and influencing European legislation pertaining to zoos and wildlife.

For this fifth edition, the EAZWV has taken a big step in guaranteeing that the handbook remains a valuable and useful resource for members and other interested parties. A new, fully searchable online platform has been developed to foster the Transmissible Diseases Handbook, allowing for frequent updates and simplifying access and consultation, while guaranteeing free and easy access across the world.

The fifth edition of the Transmissible Diseases Handbook includes a majority of the fact sheets updated between 2017 and 2019, as well as resources

developed in conjunction with EAZA, including a new and updated chapter on European legislation, a new Mammalian Tuberculosis Handbook, and new chapters on important transmissible diseases such as African swine fever and Usutu virus.

All content has been authored and peer-reviewed by experienced veterinarians and experts in their fields. The simple and standardised format of the fact sheets should help the reader to find the desired information quickly. The fact sheets include an initial summary table with information on all topics, followed by a more detailed description of topics such

as disease agent, susceptible animal groups, distribution, transmission, clinical signs, pathology and post-mortem findings, diagnosis, treatment, prevention, control, legislative requirements and a list of reference laboratories. The chapters provide further information on specific topics and diseases.

We would like to invite you to visit the online platform for the Transmissible Diseases Handbook at [www.eazwv.org/inf\\_handbook](http://www.eazwv.org/inf_handbook). Please use and share this resource, and help us improve it by bringing issues to our attention and by volunteering to contribute.



THE HANDBOOK INCLUDES DETAILED FACT SHEETS ON DISEASES SUCH AS TUBERCULOSIS

## EAZA/EAZWV MAMMALIAN TUBERCULOSIS MANAGEMENT GUIDELINES

The information in the fifth edition of the Transmissible Disease Handbook provided on mammalian tuberculosis and considerations for the management of the disease across taxa is forthcoming from the EAZA/EAZWV Mammalian Tuberculosis Management Guidelines (2020) available on the EAZA Member Area.

The Tuberculosis Management Guidelines are the result of the EAZA/EAZWV Tuberculosis Management Workshop, hosted by Paris Zoo in France, and the work of the joint EAZA/EAZWV Infectious Disease subgroup following the workshop. The guidelines provide an overview of the relevant EU legislation in light of infectious diseases in general and considerations for managing populations in human care in particular, with summarising information on sampling, testing regimes and management of positive animals. Species-specific considerations on tuberculosis testing in elephants and rhinoceros were provided by the EAZA Elephant TAG and the EAZA Rhinoceros TAG. More species-specific information will be enhanced over the coming months, with consideration on tuberculosis testing for pinnipeds and tapirs.

# Shifting the population management paradigm

AS WE REACH THE HALFWAY POINT OF IMPLEMENTING THE NEW REGIONAL COLLECTION PLAN PROCESS, IT IS BECOMING CLEAR IS THAT OUR EEPs HAVE THE POTENTIAL TO PROVIDE A HUGE CONTRIBUTION CONSERVATION IN A VARIETY OF WAYS

Elmar Fienieg, Kristin Leus, Danny de Man, Raymond van der Meer and William van Lint, EAZA Executive Office/EAZA Population Management Centre

EAZA Members collaboratively coordinate population management programmes for more than 400 species. It is often assumed that these species must be threatened and that the role of these managed populations is that of a back-up in case of species extinction in the wild. This is most likely because zoos and aquariums have essentially also communicated this paradigm for more than 30 years. At a time when zoos were still learning to work together for the benefit of species, this 'one size fits all' approach served the community well because this focused philosophy was easy to implement and to communicate, both within EAZA and to the outside world.

Several decades later, it has become clear that *ex situ* management can contribute to conservation in a variety of ways. Also, zoos and aquariums have meanwhile become much more valued as conservation partners by other conservation organisations, making it possible to better integrate our conservation activities into the larger conservation world. To adapt to this new reality, EAZA launched a new population management structure

in 2018 (see IUCN Quarterly Report, September 2018, page 17). With this we are moving away from a 'one size fits all' approach to one where each EAZA Ex situ Programme (EEP) is assigned species-specific roles and goals, which are jointly determined in the spirit of the One Plan approach by *in situ* and *ex situ* experts using the decision process in the IUCN *ex situ* guidelines. These decisions are then documented in a Regional Collection Plan (RCP) for every Taxon Advisory Group (TAG). These new RCPs specify not only which species should be prioritised within EAZA zoos and aquariums, but also what the roles of these species should be and roughly what we should do to fulfil these roles.

Despite our having entered this 'brave new world', the above-mentioned misconceptions persist, most likely because this more intricate concept is more challenging to communicate. However, now that we are almost halfway through the implementation of our new RCP process, we can demonstrate how this has resulted in clearly documented and diverse roles for each EEP, which we hope

will help break down these lingering misunderstandings.

## CONSERVATION AND NON-CONSERVATION ROLES FOR EEPs

So far, 18 of EAZA's 42 TAGs have developed a new RCP. These have recommended 258 EEPs, ranging from Anoa to Pupfishes, almost all of which were assigned multiple roles. Eighty-three per cent of EEPs (214) have at least one direct conservation role, meaning that the role is a critical component of a species' conservation strategy. Furthermore, 55% (158 EEPs) were assigned at least one indirect conservation role, which means the role is less critical, but still beneficial for the species or for biodiversity conservation more generally. The roles of insurance and source for reintroduction and other conservation translocations remain important. Currently, 67 EEPs are actively planning or already involved in a translocation project in line with the IUCN Conservation Translocation guidelines. These are not limited to situations where the species is extinct in the wild, but include genetic rescue of the wild population, establishing



Together with the North American Association of Zoos and Aquariums, the Roti Island snake-necked turtle (*Chelodina mccordi*) EEP aims to research how Chelonian reintroductions work and use this to train in-range institutions.



One of the direct conservation roles of the Barbary macaque (*Macaca sylvanus*) EEP is stopping European tourists from paying for pictures with Barbary macaque photo-props during their holidays in Morocco; a cause of one of the main threats to their survival.



A direct conservation role of the recommended Vietnamese giant magnolia snail (*Bertia cambojiensis*) EEP is building husbandry knowledge to support the establishment of an *ex situ* population in Vietnam.

new populations locally and ecological replacement. Also, there are 26 Ark EEPs for species that are extinct in the wild and for which reintroduction is the only conservation option. There are 209 EEPs that were assigned an insurance role, which means that they are maintained to preserve future conservation options. For some this may involve reintroduction, but for others it refers to other possible future conservation roles, such as research.

However, it is equally evident that most of the EEPs also have additional and/or other roles. There are 156 EEPs that aim to contribute directly to the conservation of a species through education, research, training, capacity building, fundraising and advocacy. These roles have been selected as often as the roles of insurance, ark or being the source of individuals for conservation translocation. Moreover, when indirect conservation roles are taken into account as well, only a quarter of the selected roles are related to ark, insurance or translocation. Indeed, there are 30 EEPs for threatened species that do not have any of these three roles at all.

### CONSERVATION STATUS

Over 71% of the taxa managed by new style EEPs species are globally threatened or extinct in the wild at species level according to the IUCN Red List. Two percent is data-deficient or not evaluated. Some of the species that are not threatened globally are threatened at subspecies level, locally threatened in Europe or are suspected to be threatened. This does not mean that every population of a threatened species



While the maned wolf (*Chrysocyon brachyurus*) is not listed as threatened, one of the EEP's indirect conservation roles is to educate visitors about the impact of soy extraction for meat consumption, which is the main threat to its habitat, the Cerrado.

Selected roles for new-style EEPs	Direct conservation (214 EEPs)	Indirect conservation (158 EEPs)	Non-conservation (123 EEPs)
Ark	26		
Rescue	15		
Insurance	209		
Source	67		
Education	80	130	44
Research	128	59	12
Training	57	17	6
Capacity building	15	2	
Fundraising	8	85	
Advocacy	8	7	
Ambassador		4	4
Model		12	5
Exhibit			101

automatically should be managed in EAZA. Not every threatened species needs an *ex situ* population as part of its conservation strategy. Even when they do, EAZA is not always in the best place to do it and does not have capacity to manage an infinite number of species. Species are only managed as an EEP if there is a need and capacity for management at EAZA level to fulfil selected roles. Furthermore, non-threatened species can still contribute to conservation as model species or through indirect roles such as education, research and fundraising. Finally, 32 EEPs (15%) were assigned only non-conservation roles but are still proactively managed to ensure they successfully fulfil other societal roles of zoos and aquariums, such as general biological education, more general conservation messaging, fundamental research, or because they are attractive to visitors.

All of the above does not diminish the value of non-EEP species kept by individual institutions. It is hoped that some of these will be managed in the future if there is capacity to do so, which is, for instance, the case for many freshwater fish species. Furthermore, any species can play a role to connect people to nature when exhibited in the right way. The exact roles of a species at an institution can be found in the respective Institutional Collection Plan.

### MOVING FORWARD

One of the lessons learned from the RCPs finalised so far, is the opportunity for EAZA to have a larger conservation impact. Most existing programmes were

still considered important and many new EEPs with direct conservation roles were recommended. There is a need for more EAZA Members to step up and take these new programmes on. Moreover, we will have to work together to implement these RCPs, not only by prioritising these species at our institutions, but also by working towards fulfilling all of their roles; an education role should get as much attention as breeding and transfer recommendations to reach population targets. This should not mean more work for the same people, but rather for more institutions and people of different backgrounds to become involved. For example, there are many EEPs with education roles, but only few educators so far that coordinate an EEP or are actively involved in one.

It is also clear that we have to change our communications and better explain what we do. The enormous contribution that EAZA Members provide to conservation by collaboratively running EEPs is not limited to the stereotypical role of insurance or reintroduction, but involves a diversity of roles such as education, capacity building and research. The threat status of the managed species gives some indication of the importance of a programme, but the picture it provides is incomplete.

The remaining EAZA TAGs will develop new RCPs in the coming years. Meanwhile, the implementation of these programmes will be done with a tailor-made approach for each EEP, fundamentally changing the contribution of EAZA zoos and aquariums to conservation.

# A plan for the cinereous vulture

AT A RECENT WORKSHOP TO INCREASE THE *EX SITU* REPRODUCTION SUCCESS WITHIN THE CINEREOUS VULTURE EEP, THE FIRST STEPS WERE TAKEN TO IMPLEMENT THE LONG-TERM MANAGEMENT PLAN

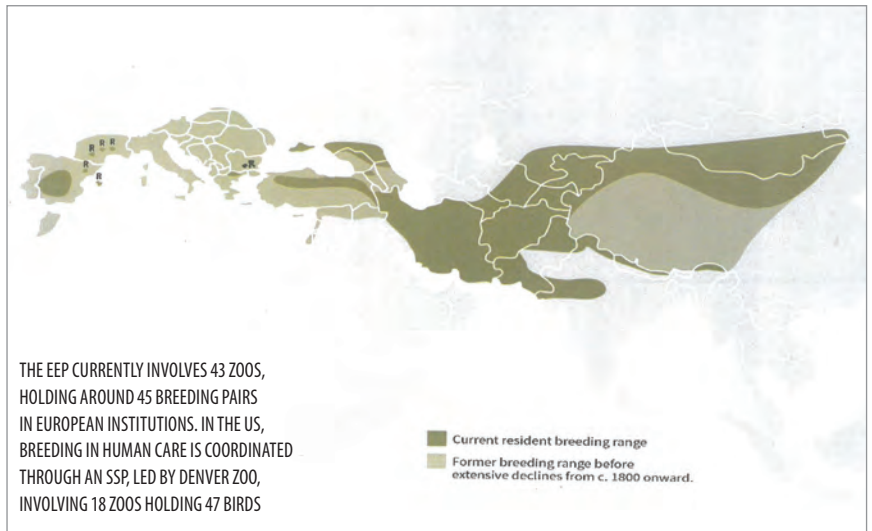
Marleen Huyghe, Curator of Birds, Antwerp Zoo & Zoo Planckendael, Belgium, and EEP Coordinator for the European Black Vulture

The cinereous vulture (*Aegypius monachus*), also called Eurasian or European black vulture, is listed as Near Threatened on the IUCN Red List (Birdlife, 2017). An EAZA Ex situ Programme (EEP) for this species was established in 1987, and since 1998, Zoo Planckendael in Belgium has been running this population management programme, coordinated by Marleen Huyghe.

The status of these species is not thought to reflect the sensitivity of these populations to catastrophes. Large and healthy vulture populations have collapsed due to the widespread use of poisoned carcasses set for livestock predators and anti-inflammatory drugs for cattle, such as Diclofenac. Other threats to the species include collision with powerlines and wind turbines, habitat degradation and a decline in food availability due to a decline in wild and domestic ungulates (BirdLife, 2017). Europe is seen as a relatively stable region for vultures, with a lower chance of catastrophes. Therefore, an important component of their conservation strategy is to maintain these stable populations and further increase healthy wild populations of these vulture species in Europe.

The European vulture programmes of EAZA work closely with the Vulture Conservation Foundation (VCF), which is the main organisation connecting the different stakeholders and reintroduction projects that are working on the conservation of European vultures.

The Cinereous vulture EEP holds a unique position in vulture restoration, as it is a good source for provision of fledglings that can be used within the reintroduction projects linked to the EEP to restore the population in its historic range. Since 1988, reintroductions with chicks bred in human care started in Mallorca; this was followed by reintroductions in



CINEREOUS VULTURE AT VIVARIUM DARMSTADT

France and Spain, and since 2018 in Bulgaria. It is hypothesised that birds being released at a very young age, before fledging, fixate more easily on their reintroduction site (*cf.* inborn philopatric behaviour). This increases the likelihood of local colony formation and the establishment of a population.

However, the EEP suffers from a low reproduction success rate, so even though birds bred in human care have continuously been released, there is

still an aged population. From 2012 onwards, releases of young chicks were very restricted to strengthen the demography of the *ex situ* population of cinereous vultures and to enable releases of chicks in the new release sites in the future. At the same time research was conducted by the Centre for Research and Conservation (CRC), situated in Antwerp Zoo, to tackle the low reproduction success. Analysis of all available egg data of EEP cinereous vulture pairs showed that more than 50% of eggs laid were infertile and only one in four eggs survive to adulthood; also 27% of the eggs broke. Comparison of the behaviour of successful and unsuccessful pairs indicated that pair bond behaviour is an important key factor for breeding success. To allow birds to build a natural pair bond, young birds were put together in a 'dating or socialisation' aviary. Furthermore, all birds were sexed by DNA analysis. Cinereous vultures are morphologically not distinguishable, and in the past birds were identified on sight, females being a bit larger than males; but as Asian birds are larger than European ones, this can be very misleading. DNA analysis revealed several errors and this allowed us to form some new pairs.

In 2015, Philippe Helsen from the



PARTICIPANTS OF THE WORKSHOP, WHICH WAS FACILITATED BY KATHARINA HERMANN AND KRISTIN LEUS

CRC, became scientific advisor for the EEP and supports the programme with genetic research. This research is considerable and covers both *in situ* and *ex situ* populations, and eventually aims to come to a better understanding of the species as a whole.

During the Long-term Management Plan (LTMP) meeting in Jerez, 2018, where both *in situ* and *ex situ* partners were present, it was confirmed that the EEP serves two major conservation goals: first, to establish a long-term sustainable back-up population; and, second, to provide individuals to support ongoing reintroduction initiatives. However the analyses from that workshop showed that the EEP needs to work more to reach these goals (Sanchez *et al.*, 2019) and that reduced reproductive output is the main driving factor. The target for the population size was to maintain at least 170 birds and preferably to increase this to 200 individuals, to avoid a population crash in the coming years. The ultimate goal is to produce 15 chicks per year in order to meet the demands for both the population management programme and the reintroduction projects (Sanchez *et al.*, 2019).

In order to help achieve this goal, the LTMP emphasised the need to organise a workshop to revise the current husbandry guidelines that were produced in 2009 (Huyghe *et al.*, 2009). Over the last decade, new insights into practical management of the species have emerged, which should ultimately lead to increased breeding success. The

establishment of specialised population management centres (multiple aviaries, off-exhibit, with dedicated staff) was recommended as a tool to build up the necessary husbandry skills and knowledge and to increase breeding success. Having a specialised breeding centre has led to huge improvements in the reproductive rate in the Bearded vulture and Californian condor EEPs. This required more in-depth discussions on the best way forward.

#### CINEREOUS VULTURE EEP WORKSHOP 2019

Following up on the outcome of the LTMP meeting, a two-day workshop (9–11 December 2019) was organised by Zoo Planckendael. This workshop united *in situ* and *ex situ* experts in (cinereous) vulture breeding, successful breeders of the species, and specialists in artificial incubation, population dynamics, nutrition and veterinary issues. Furthermore the SSP coordinator and population biologist of the Cinereous vulture SSP were present. The workshop was facilitated by Katharina Herrmann and Kristin Leus from the EAZA and Conservation Planning Specialist Group (CPSG) offices, who guided us through the brainstorming sessions and the discussions.

On day one, the strategic way forward to meet the demands of both breeding and reintroduction projects was developed, and in accordance with the successful model for other

endangered species such as Bearded vulture and Californian condor, it was agreed that a structure including specialised population management centres *and* individual zoos with a close collaboration between both would be the most promising way forward.

On the second day, husbandry topics related to breeding success were reviewed, starting with very specific behavioural information from *in situ* experts translated into seven golden rules to take into account in *ex situ* situations. Experiences from the GREFA (Native Fauna and its Habitat Rehabilitation Group) specialised breeding centre in Spain were exchanged, together with information on artificial incubation, egg-laying intervals, fostering and veterinary diets. These presentations were followed by workshops on housing, breeding management, artificial incubation and veterinary issues, all of which led to a great many new ideas and recommendations. The expertise of all the participants combined with their enthusiasm made it a very productive workshop, and the outcome of each working group will be included in the future new Best Practice Guidelines.

#### INTO THE FUTURE

Incorporating specialised population management centres, active collaboration with individual holders and reviewing existing husbandry procedures (e.g. re-pairing of non-successful pairs) are just some of the recommendations made during the workshop and will be implemented over the coming years by the EEP coordinator and the Species Committee. It is hoped that the recommended changes will soon have a positive impact on the breeding success of the Cinereous vulture EEP.

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# Planning for a revolution



THE IUCN SSC CONSERVATION PLANNING SPECIALIST GROUP IS USING ITS FOUR DECADES OF EXPERIENCE FIGHTING FOR THREATENED WILDLIFE TO CATALYSE A SPECIES CONSERVATION PLANNING REVOLUTION

Jamie Copsey, Director of Training, and Fran Webber, Communications Officer, IUCN SSC CPSG

Stories of species survival are long. The first workshop led by the IUCN Species Survival Commission (SSC) Conservation Planning Specialist Group (CPSG) to plan a future for the golden lion tamarin was held in 1990 when there were only a few hundred of these striking animals left in the wild. Through our unique blend of quantitative analysis and stakeholder facilitation, a population benchmark of 2,000 wild tamarins was identified as required for the species to survive. The tamarins have far exceeded that goal. As of 2018, there were just over 2,500 golden lion tamarins thriving in their native habitat.

However the story is not as simple as that. The golden lion tamarin population reached a high of 3,700 in 2014. An outbreak of yellow fever in 2018 reduced the population to its current number, demonstrating how fragile these recovering populations can be — and their need for ongoing support from all of us.

CPSG has been fighting for threatened species for 40 years. But in 2020, we're not only celebrating our four decades of success in changing the future for wildlife, but also leading a species conservation planning revolution that will rally

steadfast supporters, such as zoos and aquariums, to meet the growing needs of threatened species.

## PARTNERING WITH ZOOS AND AQUARIUMS

CPSG's connection with zoos and aquariums goes back to the very beginning. In 1979, CPSG emerged from the IUCN SSC's Zoo Liaison Committee with Dr Ulysses S. Seal as its Chair. (We were then known as the Captive Breeding Specialist Group. Over the years our name has changed twice to reflect our expanding mission.) CPSG quickly became, and remains, one of the SSC's largest and most productive Specialist Groups, an accomplishment that would not have been possible without the generous, loyal support of donors to the Global Conservation Network, the registered nonprofit formed to fund CPSG.

Dr Seal's conservation work was closely entwined with that of zoos. He founded the International Species Inventory System in 1974 (known today as Species360) to help zoos and aquariums around the world maintain and share animal records. Dr Seal collaborated with a colleague to develop the first model for a Species Survival Plan (SSP) programme on

which all SSPs are now modelled.

This partnership with zoos led to some of CPSG's most impactful early work to change the future for threatened species. In 1985, CPSG became involved with the development of the population management programme for the Critically Endangered black-footed ferret, on which the recovery of this species hinged. In the 1990s, CPSG, in collaboration with our host the Minnesota Zoo, began working with Chinese colleagues to develop a Long-term Management Plan (LTMP) for the South China tiger. And, in late 1996, at the invitation of the Chinese Association of Zoological Gardens, CPSG facilitated the development of a masterplan for the population of giant pandas being kept in human care.

The 1990s also saw the geographic expansion of CPSG. Sally Walker formed the first CPSG regional office in India in 1990, the aim of which was, and is, to bring CPSG tools and principles to the region or country according to the needs of the wildlife, culture, society of the area. There are currently 11 CPSG Regional Recourse Centres (RRCs), including CPSG Europe.

CPSG Europe was established in 2002 with Bengt Holst of Copenhagen Zoo as convener, a position he still holds today. CPSG Europe works closely with EAZA, which benefits both organisations. Over the years, this has led to a number of constructive initiatives, resulting in both capacity building in conservation facilitation and the development of important conservation tools, such as EAZA's new Population Management Structure and the multi-species planning process called ICAP, or Integrated Collection Assessment and Planning — designed to optimise the *ex situ* conservation contribution of zoo and aquarium collection planning.

CPSG Europe initially focused on European conservation tasks but soon broadened its reach, with CPSG Europe staff, including Kristin Leus, supporting other regions in need of facilitation or population modelling capacity and developing new tools, including the 'IUCN Guidelines for the Use of *Ex Situ* Management for Species Conservation' and CPSG's *ex situ* needs assessment workshop. In the years to come, CPSG Europe will be heavily involved in fulfilling the new task of CPSG: ensuring that every species that needs one is covered by an effective, implemented plan.

### CONSERVATION WORKS WHEN GUIDED BY PLANNING

Our 40 years of planning futures for threatened species has taught us that conservation action can work, when guided by effective planning. A recent study (Lees *et al.*, in prep) comparing the rate of species declines before and after CPSG intervention illustrates the powerful role of CPSG workshops as a turning point for threatened species. Species decline continued to slow for over a decade after an initial workshop took place. Success stories resulting from CPSG workshops include:

- The **tenkile tree kangaroo** population rebounded to an estimated 300 individuals after CPSG connected local landowners, conservation scientists and government to equitably share knowledge and responsibility for the conservation of this species.
- Bringing the right people together to plan a future for the **Hungarian meadow viper** led to a conservation



ULYSSES S. SEAL, FIRST CHAIR OF CPSG, AT A WORKSHOP FOR MEDICINAL PLANTS IN 1995.

breeding programme that has resulted in the birth of more than 2,000 snakes, of which hundreds have been released into the wild.

- We helped source the best available data and research on **wattled cranes** so that groups working to save the species could plan for its future. The birds' population in South Africa increased by more than 60%.

### CATALYSING A SPECIES CONSERVATION PLANNING REVOLUTION

We are now ramping up our efforts to increase global capacity and to scale up species conservation planning to address the growing threats to species worldwide. We added more face-to-face facilitation training courses to our schedule and in 2018 debuted a new online training course. Last year, we launched a Species Conservation Planners Development Path programme to support a select group of conservation professionals over an 18-month period of formal training, 'on-the-job' coaching and mentorship. As a result of these investments in capacity building, we nearly doubled the number of species conservation planning workshops conducted in 2019.

But capacity building isn't all we're doing to scale up to save species. In 2018, CPSG developed a new planning tool called Assessing to Plan (A2P), allowing us to move more quickly from Red List assessment to planning for

more species at once, exponentially increasing the impact of conservation planning. And, in partnership with the SSC and Parque das Aves, CPSG set up the Species Survival Centre at our RRC in Brazil to empower conservation efforts through training and support for assessing, planning and acting to save species.

These successes are helping us to scale up our efforts to change the future for threatened species, but we're not stopping there. In May 2019, we convened a Strategic Planning Meeting to consider the future of the organisation so we can continue to evolve and bring species conservation planning into a new era. The result was the identification of three strategic pillars that will carry us well beyond 2020:

- **Shared Ownership:** uniting government leaders behind our shared responsibility to save species.
- **Access to Knowledge:** transforming information into more effective species action.
- **Inclusive Voices:** supporting local communities and indigenous peoples organisations to effectively drive change.

### SUCCESSFUL NUMBERS

As of 2020, CPSG members number just over 300 individuals from nearly 50 countries. The number of institutional and individual donors has gone from 57 in 1989 to 120 in 2018, many of whom have been annual donors for more than 20 years. Since its inception, CPSG has assisted in the development of conservation plans involving over 280 species through more than 785 workshops in 75 countries. CPSG has collaborated with more than 200 zoos and aquariums, 180 conservation NGOs, 65 universities, 55 SSC Specialist Groups, 50 government agencies and 35 corporations.

The 40-year story of CPSG is an impressive one. But it's truly only just beginning. There is much more work to do for the more than 27,000 species that are threatened with extinction. Our goal is to ensure that every species that needs one is covered by an effective, implemented plan of action for its survival. That's why we're catalysing a species conservation planning revolution. We hope that you will be part of it. [www.cpsg.org](http://www.cpsg.org)

# Saving the Danish noble chafer



THE REDISCOVERY OF A RARE BEETLE THAT WAS THOUGHT TO HAVE DISAPPEARED INSPIRED A NEW CONSERVATION PROJECT AT COPENHAGEN ZOO, WHICH AIMS TO SECURE THE BEETLE'S SURVIVAL IN DENMARK.

Signe Ellegaard, Research Assistant, and Eddie Bach, Zookeeper and Ranger, Copenhagen Zoo, Denmark

In and around a protected forest area in Ringsted Municipality on Zealand, you might be lucky enough to see a photogenic metallic-green beetle, which is easily mistaken for the rose chafer (*Cetonia aurata*). However, unlike the more common rose chafer, the noble chafer (*Gnorimus nobilis*) is classified as Endangered on the Danish Red List (2019). It was in fact thought that the noble chafer had disappeared completely from Denmark, as it had not been registered since 1998. It was therefore a big surprise when the beetle was suddenly rediscovered in Allindelille Fredsskov in Ringsted Municipality in 2012 – and shortly thereafter also at Frijsenborg close to Aarhus. However, very few individuals have been seen since, and in the last couple of years only a few imagoes (fully-developed insects) have been observed in Allindelille, which now probably comprises the last known population of the noble chafers in Denmark.

It is more than 20 years since the zoo's first Danish conservation project began. The focus was then (and still is) to save threatened Danish amphibians such as the European fire-bellied toad

(*Bombina orientalis*) and the natterjack toad (*Epidalea calamita*) by restoring habitats, breeding the species in human care and then releasing tadpoles. The expertise gained through this project now forms the basis for the current work with the beetles. When zookeeper and nature ranger Eddie Bach and his colleague Lene Rasmussen were notified about the rediscovery of the noble chafer, it was not long before the new project was in the pipeline. This conservation project aims to secure and expand what is believed to be the last population in Denmark through *ex situ* breeding, the release of larvae and habitat restoration *in situ*.

## THE SPECIES

The noble chafer is a so-called saproxylic species, meaning that during its lifecycle it is dependent on dead or decaying wood to complete its development. The female imago lays her eggs in a decaying cavity in a tree that is still alive and standing. After a few weeks, the eggs hatch and the larvae then live in and off the dead wood for up to three years while they undergo three larval stages. The larvae pupate in spring and undergo the last

transformation into mature beetles. The imagoes live off nectar, usually from white umbellifers; in Denmark they are most often found in flowering elder on warm sunny summer days in forest glades. The saproxylic species are important to the forests because of the role they play in wood decaying and nutrient recycling. In this way they also contribute to the creation of new habitats for other organisms.

It should not be surprising that the population of the noble chafer is in decline, as at least 13% of all assessed European beetles are decreasing in number. For the saproxylic beetles, the decline is primarily caused by modern forestry and the accompanying removal of old veteran trees from the forests – a problem that is well recognised in Denmark. The Danish forests are dominated by plantations resulting in a lack of old, open forest, a habitat that is necessary for the decaying wood cavities that the species needs to develop.

## EX SITU BREEDING AND IN SITU HABITAT RESTORATION

Breeding has proven to be a relatively easy task. Since 2016, Copenhagen



Zoo has bred noble chafers from two founder pairs collected in Allindelille. The first generation bred in human care consisted of 10 imagoes, which increased to 63 the following year, resulting in more than 750 larvae. This is seven times as many individuals as have ever been registered in Denmark. This proves that the noble chafer is fully capable of breeding and developing in a Danish climate and confirms that the lack of suitable habitat *in situ* is a factor in the declining population.

In the area around Allindelille, very few breeding trees are available for the species, so the project also intends to create more breeding sites. One of the ways to do this is to veteranise suitable trees. Veteranisation is a physical intervention using a chain saw on a healthy tree, which speeds up the tree's natural ageing process. The intervention allows fungi, insects and other animals to create cavities within the wood, which many species need, including the noble chafer. The tree does not die; it is only partly damaged, and after a few years it can function as a breeding site for the noble chafer and other species. However, although the intervention does not take long, the natural decaying process in the tree might take 10 to 20 years, so an instant solution is also needed. Specially designed nest boxes (inspired by boxes used for the hermit beetle on Öland, Sweden) which resemble a natural cavity are hung up in trees in the project area. These will function as temporary breeding sites for the species, and it is in these boxes that the first release of 450 zoo-bred larvae took place in the autumn of 2019. More boxes will be deployed in the coming years, which should increase the population.

### MONITORING AND RESEARCH

As well as population management and reintroduction, the project aims to increase our knowledge of the species' biology and ecology, which will help in targeting our efforts to secure the species and its last natural habitat. This includes studying the species in human care to learn about such things as larval development, but also includes working *in situ* to develop efficient non-invasive monitoring methods.

The noble chafer is a rather elusive



species due to its saproxylic lifestyle and it may be difficult to find. The number of observed imagoes might therefore not give a realistic picture of the true status of the population, which is why a more systematic effort is needed to determine population size and dynamics in the area. One way to do this will be to use pheromone traps for luring in imagoes and then applying a mark-recapture approach. Estimating the population size in the breeding season after the first reintroduction of larvae will not only give us extremely valuable information about the status of the population, but also indicate the degree of success from the first release in 2019. Furthermore, the study will be designed to include data that will provide us with new knowledge on the dispersal abilities of the species in Denmark. The resulting maximum dispersal distance of the imagoes will equal the maximum distance between veteranised trees, foraging areas and nest boxes to ensure that dispersal between these vital areas can be reached from each other.

While both imagoes and larvae of the noble chafer might be very difficult to locate, the frass (hard faecal pellets) of the larvae can more easily be found in open hollows of the veteran trees inhabited by the species. Though faeces of different species can usually be distinguished by shape and size by a trained field worker, more definitively conclusive methods are needed to establish exactly which species the faecal pellets belong to and thus which species live inside that specific tree.

Studies on eDNA will contribute to developing non-invasive monitoring methods where field samples containing frass can determine this.

### THE FUTURE FOR THE DANISH NOBLE CHAFER

By studying the species at the zoo as well as in the field, we will gain useful knowledge about its biology. This knowledge will help in understanding the species' ecology and is therefore essential when making targeted conservation plans for the future survival of *G. nobilis* and hopefully other species with similar ecology. The noble chafer will hopefully function as an umbrella species, as the efforts to save it will have positive consequences for many other species as well. With the plans for the continuous release of larvae bred in human care, as well as habitat restoration and habitat expansion, the future of the wild populations is looking brighter. We hope that in the future, many more people will be able to see the noble chafer in Denmark.

The project is financially supported by The Danish Nature Fund, and is a collaboration between Copenhagen Zoo, the Danish Nature Agency, Vesterskoven I/S, Danmarks Naturfond, Ringsted Municipality and multiple private landowners.

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# Taking action for Indonesia

MORE THAN 40 ORGANISATIONS ACROSS THE WORLD JOINED FORCES LAST YEAR FOR THE FIRST EVER ACTION INDONESIA DAY, TO RAISE FUNDS AND AWARENESS FOR THE REGION'S THREATENED UNGULATES

Stuart Young, Programme Officer, IUCN SSC Asian Wild Cattle Specialist Group

Action Indonesia is an international partnership of over 50 institutions – including zoos, NGOs, governments and universities – coordinating the Global Species Management Plans (GSMPs) for anoa, banteng and babirusa. These threatened ungulate species, all found in Indonesia, are often little-known and under-appreciated by zoo visitors (and even among zoo workers). As well as reaching a demographically and genetically healthy global *ex situ* population, and utilising the technical and financial support of zoos for *in situ* conservation, one of the key goals of the Action Indonesia partnership is to raise awareness of these species among zoo visitors. To do this, the GSMP Education Working Group organised ‘Action Indonesia Day’.

The first ever Action Indonesia Day was held on 18 August last year. More than 40 organisations across four continents got involved for a day of events and activities to connect people to anoa, banteng and babirusa and raise awareness about the global efforts to conserve them. The events held in zoos, and posts on social media (searchable with the #ActionIndonesia hashtag), helped to increase the profile of these largely unknown and under-appreciated threatened ungulates.

Zoos got involved with special keeper talks and ‘artefacts tables’, many of them making use of the educational resources available to download from the Action Indonesia website. Some zoos also used this as an opportunity for fundraising as well as awareness raising. Drayton Manor Zoo in the UK held a variety of games and activities to raise money – including one in which the keepers were sponsored to get a tattoo of an anoa! Through this, Drayton Manor raised £700 (around €840). A further \$1,568 (£1,210/€1,450) was raised by Zoo Miami and several chapters of the American Association of Zoo Keepers. These funds will be used to support important *in situ*



conservation, including using camera traps to monitor wild populations of anoa and babirusa in Sulawesi.

There were 26 Indonesian organisations involved in Action Indonesia Day, and this was the largest representation of any single region. This was down to the hard work of the Indonesian members of the Education Working Group to promote the day to zoos and universities across Indonesia.

Due to its success in 2019, we will be running Action Indonesia Day again this year, on 16 August. This year, however, we are hoping for a much greater European showing! Last year, four EAZA Members got involved with activities, fundraising and social media posts (Big Cat Sanctuary, Chester Zoo, Drayton Manor Zoo and Marwell Wildlife, all UK). More than 30 EAZA collections hold at least one of the three ungulate species, and there are more than 50 EAZA holders

of Sumatran tiger. The Sumatran tiger GSMP is aligned with the ungulate GSMPs in Indonesia, making an ideal link with this day of awareness raising. Indeed, you do not have to be a holder of one of the GSMP species to get involved; this is a great opportunity to raise awareness about the role of zoos in cooperative breeding programmes, or conservation issues in Indonesia in general.

To find out more about last year's event, and the Action Indonesia GSMPs in general, please visit the Action Indonesia website at [www.actionindonesiagsmp.org](http://www.actionindonesiagsmp.org) or search for the #ActionIndonesia hashtag on social media.

To find out more about getting involved in Action Indonesia Day 2020, please contact Charlotte Smith, GSMP Education Working Group leader and European representative ([c.smith@chesterzoo.org](mailto:c.smith@chesterzoo.org)).

# Flexible funding for a brighter future

THE EU LIFE PROGRAMME IS ADAPTING TO THESE EXTRAORDINARY TIMES BY OFFERING FLEXIBILITY DURING THE COVID-19 CRISIS AND BEYOND.

Dalila Frasson, EAZA Funding Coordinator

As readers of *Zooquaria* already know, the LIFE programme is an EU fund supporting environmental, nature conservation and climate action projects throughout the EU. It is funded and administered by the European Commission.

The European Commission and many other government institutions all around the world have taken severe measures to slow down the spread of the Covid-19 virus and we are observing a strong negative impact on economic activity in many countries. The severity of this impact depends on how long these measures need to be upheld and the monetary and fiscal actions taken to overcome structural damage to economies.

We believe that the LIFE programme must adapt to meet the global challenge we all now face, so that funding contributes to lasting outcomes that can help prevent this kind of crisis in the future – an assessment that the Commission appears to share and which is leading to flexibility around the funds and the application process.

LIFE's key priorities are the environment and climate, but the link to human health is now unavoidable. With greater understanding of the interconnectedness of human and ecosystem health comes the potential to promote greater social and resource sustainability over the long term, which in turn could help reduce the risks of further pandemic outbreaks as well benefit species conservation.

In the light of the opportunities and challenges posed by the pandemic, the LIFE fund has been reviewed by the Commission to build some flexibility

into both the application process and the scope of projects eligible for funding. Modifications to the NGO Operational Grant are as follows:

- There is an extension of two months for submission of the final report, which can now be done electronically.
- Cost reimbursements related to cancellations have been made available if venues or other cost centres cannot provide reimbursement.
- It is permitted to include costs related to Covid-19 measures (e.g. webinar/ remote meeting IT, masks to continue work, etc.).
- It is permitted to adapt the work programme as long as the budget shift is <20%.

Regarding the 2020 LIFE calls, the European Commission has introduced several measures to lessen the impact of the restrictions we all have to live with. Amongst the various measures, some have addressed the submission process, while others opened up new possibilities in terms of project design. Some examples below:

- All submission deadlines are being extended by one month.
- First pre-financing payment has been increased (40% instead of 30%).
- There is increased flexibility for the 2% rule.
- No depreciation in case goods are used after the project for the same purpose.
- Priorities and topics remain, but ideas connected with pandemic management are welcome.
- A special section on start-up companies has been integrated into

the guidelines. Larger companies have been invited to consider their LIFE project as a potential incubator for start-ups.

If you would like to know more, a webinar about the Covid-19 flexibility measures for the LIFE 2020 call can be found at the following link: <https://eu-life-2020.b2match.io/>

Last but not least, flexibility in the next LIFE (2021–2027) stream of funds will be as follows:

- to launch specific calls for proposals or other actions to target specific issues or topics;
- to extend the scope of the strategic integrated projects;
- to extend the scope of the Strategic Nature Projects (SNaPs) beyond Prioritised Action Frameworks;
- to finance capacity-building projects for upscaling or replicating the project results;
- to finance other actions such as prizes or contests;
- to define the priority topics on an annual basis; and
- to have cumulative financing with other programmes.

To wrap up, we would like to give some tips to all beneficiaries of LIFE projects during this pandemic and for the next few months.

- Take a new approach: the rules have changed.
- Be flexible: although life could return to normal in the short or medium term, it may not, and you must be prepared to operate in the new context well into the future.
- Be very clear in communicating the benefits of your offer, especially to vulnerable groups.
- Be humane and help those in need!



# A walk in the food forest

APENHEUL ZOO IN THE NETHERLANDS IS ON A MISSION TO INSPIRE VISITORS AND STIMULATE NATURAL FORAGING BEHAVIOUR IN PRIMATES THROUGH SMART DESIGN FOR LOCAL BIODIVERSITY



Thomas Bionda, Zoological Manager, and Laura de Kruijs, Head of Strategic Project Management, Apeneul Primate Park, the Netherlands

Ever since it opened in 1971, Apeneul has always been a primate-focused zoo, well known for our free-roaming primates, the large and naturalistic exhibits and our unique primate collection. We are constantly looking for innovative ideas and progressive ways of housing primates. Recently, we have been faced with three challenges;

- How can we stimulate natural foraging behaviour in primates?
- How can we boost our local biodiversity?
- How can we inspire and educate visitors to stimulate biodiversity in their own backyard?

The knowledge that zoos and aquariums have regarding animal husbandry is continuously increasing. Exhibits become larger and more naturalistic, while our nutritionists design well-balanced diets that resemble our primates' natural diets as much as possible. There is, however, one big difference, especially for primates, that still remains a challenge: naturalistic foraging behaviour. Despite our best efforts in feeding enrichment and increasing the number of feeding times, we don't always succeed in recreating their natural situation.

## FEEDING VS. FORAGING

In the wild, primates spend around eight to 12 hours a day foraging, but in zoos we often feed them only four to six times a day. Their dietary needs are largely met in zoos, and their diet is sometimes even better compared to that of their wild conspecifics. However, the lack of time spent on this important foraging behaviour may

result in unwanted behaviours such as boredom, stereotypical behaviour and/or abnormal behaviour. Simply meeting their nutritional requirements does not automatically mean that their behavioural needs are met as well.

## BIODIVERSITY LOSS

Of course, their wild counterparts also face a lot of challenges. Nature is declining globally at rates unprecedented in human history – and the rate of species extinctions is accelerating<sup>1</sup>. This is also visible on a more regional level. Current data suggest an overall pattern of decline in insect diversity and abundance: for flying insects in Germany up to 76% - 82% decline in biomass over the 27 years of study<sup>2</sup>. As conservation organisations, both *ex situ* and *in situ*, we feel responsible for all living creatures, large and small. This is also mentioned in EAZA's mission statement: *To facilitate co-operation within the European zoo and aquarium community with the aim of furthering its professional quality in keeping animals and presenting them for the education of the public, and of contributing to scientific research and to the conservation of global biodiversity.*

## MULTI-TASKING FOR MONKEYS

To address these various issues, we wanted to create a new free-roaming monkey exhibit, where visitors can walk freely through this mixed exhibit with several callithrichids and other small New World monkeys. But since we already have various free-roaming primate exhibits in Apeneul, we wanted to push ourselves to be

innovative and to stimulate natural foraging behaviour as much as possible. At the same time, we wanted to boost our local biodiversity by carefully selecting a large variety of native flowers, plants and trees. And, perhaps needless to say, we wanted to tell a story about the importance and complexity of biodiversity and to provide tools and information for visitors on how they could contribute to increasing biodiversity themselves. Last but not least, the whole project had to be built in the most sustainable way possible.

At first, improving local biodiversity, both quantitative and qualitative, and stimulating natural foraging behaviour for (partly) insectivorous primates seemed to be two separate design principles. Almost a *contradictio in terminis*. However, we soon discovered that these principles are strongly interconnected and can complement each other.

## LANDSCAPE AND EXHIBIT DESIGN

We set out to design and build an environment that adds value for foraging primates and our native inhabitants. The first step was to attract more insects and other small invertebrates to the area; this stimulates foraging, as more potential food is present for the primates to look for. So we created a better home for our local inhabitants by:

- building an exhibit barrier in the shape of an insect hotel wall (this is described in more detail below);
- adding a moat as an exhibit barrier and using it as the beginning of an ecological succession (see above);



SCHEMATIC ILLUSTRATION OF AN ECOLOGICAL SUCCESSION, AS DESIGNED FOR THE NEW FREE-ROAMING MONKEY EXHIBIT

- adding new species of native flowers, plants, bushes and deciduous trees and fruit trees; and
- replacing invasive tree species with native deciduous trees.

Secondly, we took several steps to stimulate primate foraging time, as follows:

- We planted wild fruit and nut trees and plants, which, in addition to the native animals, are also part of the primates' diet.
- The indoor exhibit is provided with continuous 'fresh' tree stumps and other enrichment from the outdoors (containing insects).
- Both the outdoor and indoor areas have special dispensers containing such things as mealworms and gum, which requires the primates to make an effort to find food. For example, an extra layer of bark is attached on top of the dispensers, simulating an actual branch.
- The increased consumption of nuts, fruits and insects in the outdoor exhibit will be closely monitored by our zookeepers and nutritionist. When required, the primates' diet will be adapted accordingly; for example, to take account of seasonal dietary variations.

### THE STORY WE SHARE

We called the exhibit the Food Forest, to help our visitors understand the exhibit's function. Its meaning is twofold: it is a place where the foraging behaviour of our primates is highly stimulated and where native animals can themselves find food and, in that way, become part of the primates' natural diet. It tells the story of the natural food chain and stresses its vulnerability and beauty. We share this story in our park presentations, guided tours and educational displays,

which are aimed at different target audiences. We also offer practical tools to our visitors to help them to improve and increase biodiversity in their daily lives. To reinforce the importance of creating such areas, we intend to take various measurements of biodiversity increase and development in this specific area.

### A GREAT WALL FOR THE SMALL

To make sure that the insects and other small invertebrates that we want to attract are given adequate accommodation, we designed our own large insect hotel. It consists of two separate walls with a combined length of more than 100m. Although the insect hotel does not necessarily cause



THE INSECT WALL UNDER CONSTRUCTION, INCLUDING A SAND-BATH FOR THE NATIVE ANDRENA BEE (*ANDRENA SSP*)

### How to design an insect hotel

- Make sure larger insect hotels are built in compartments. This enables you to easily replace parts in the lower levels.
- Make sure the hotel is dry (create a roof).
- Variation in materials is essential, not only to facilitate the different species, but also to prevent a possible fungus outbreak.
- Consult an expert. These people can advise you on design effectiveness for the animals you are building it for. For example, some native bees require a very specific diameter and stem depth to nest in.
- One of the most enjoyable aspects of designing an insect hotel is creating different habitats in the wall; the upper parts are designed for all kinds of smaller insect such as bees and beetles, while the lower parts are focused on snakes, small mammals and larger insects and reptiles.
- You can use the insect hotel as a visual barrier, increasing its benefits.

a significant increase in biodiversity, it will definitely stimulate and support the species already present. Also, by carefully adding new species of plants and flowers, we may make the area even more attractive, which could boost biodiversity in the future. Think of an increase in native bees, beetles, caterpillars, grasshoppers and woodlice, but also reptiles, birds and small mammals. They can use the wall to spend the night, shelter, hibernate or reproduce. And yes, some of the invertebrates will end up in a different 'hotel'; the belly of a monkey. But most likely this won't have a substantial impact on a population level.

To create this exhibit, we went through a painstaking process of thinking and designing. Obviously, some ideas are perfect in theory, but can work differently in practice; this is all part of the process. If you have any questions or suggestions, please feel free to contact us. And if you are interested in seeing what the actual exhibit looks like, make sure to visit us!

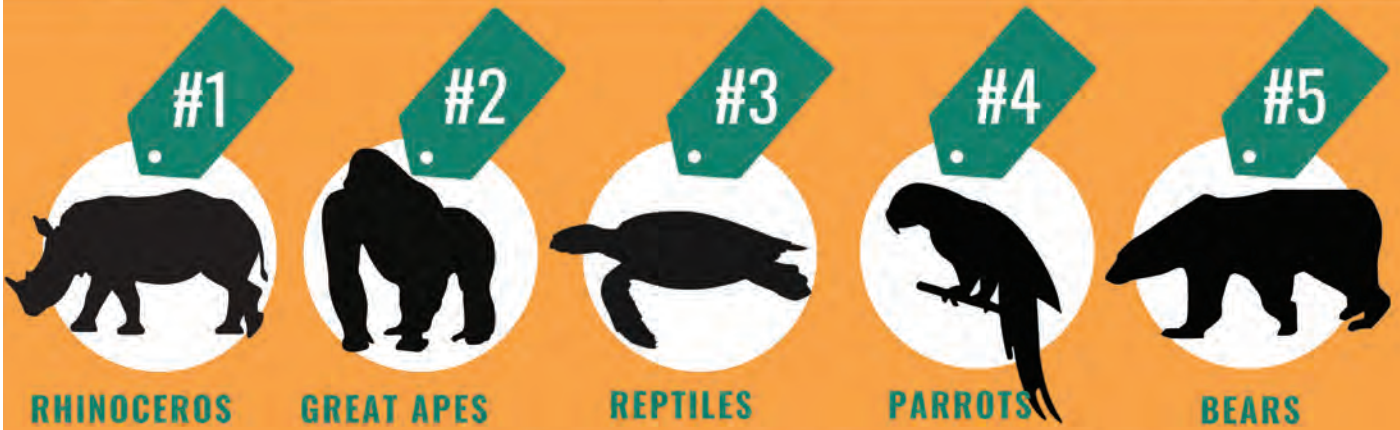
### REFERENCES

- <sup>1</sup> <https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>
- <sup>2</sup> <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0185809>



# Contributions to Conservation 2019

**i** Based on information available in the EAZA Conservation Database on 25 May 2020



## TOP 5 TAXA SPECIFIC SUPPORT

### TOTAL SUPPORT



**103**  
MEMBERS



**22.6 MILLION**  
FINANCIAL  
SUPPORT



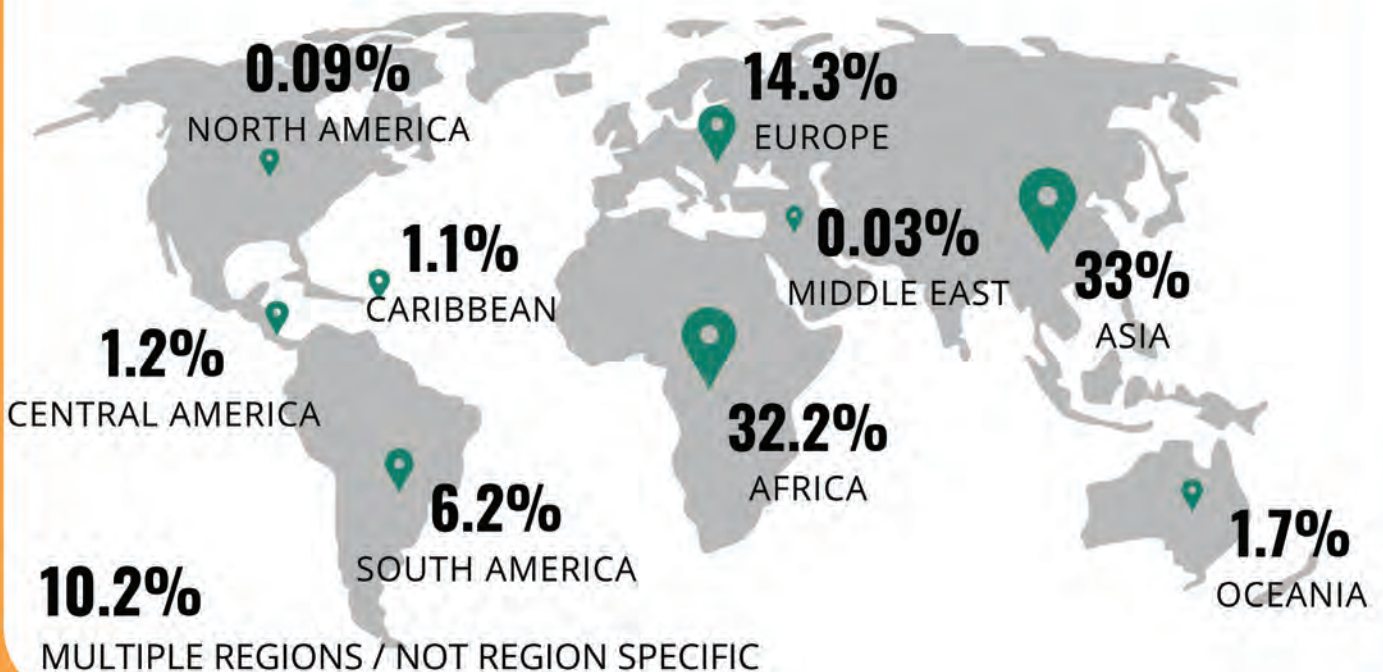
**109,027 HRS**  
STAFF TIME



**> 600**  
PARTNERS



**> 600**  
SPECIES



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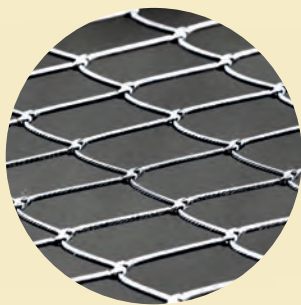


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1,6 mm	25 x 25 mm / 30 x 30 mm / 38 x 38 mm 51 x 51 mm / 76 x 76 mm
2 mm	38 x 38 mm / 51 x 51 mm / 60 x 60 mm 76 x 76 mm / 90 x 90 mm
2,4 mm	51 x 51 mm / 60 x 60 mm / 76 x 76 mm 90 x 90 mm / 102 x 102 mm / ...
3,2 mm	51 x 51 mm / 76 x 76 mm / 90 x 90 mm 102 x 102 mm / 120 x 120 mm / ...

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