

EAZA CONSERVATION FORUM

17 - 20 May 2022
Zagreb, Croatia



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ZAGREB ZOO WELCOMES YOU!

From the Zagreb Zoo we send you words of warm welcome to the EAZA Conservation Forum.

Help us join knowledge and experiences in designing and promoting conservation projects during this event.

Today, when the disastrous pressure on nature and the environment increases day by day, everyone realises that only changes in the way of thinking and way of living can direct us to a quality future. And here is also the niche for the zoos, aquariums and all other institutions and individuals that implement conservation work in their mission and made it an indispensable part of everyday life.

The question is how can we become more progressive, efficient, and better connected?

Come to Zagreb, explore Zagreb Zoo and Croatia. Get better insight in our projects of autochthonic fauna and meet present and future partners ready to share capacities and inspiration!

We are sure that this conference will generate new partnerships and empower existing and future conservation projects.

Let's join the forces, generate new ideas and have fruitful event!

Your Zoo Zagreb team



SUPPORTERS OF THE CONFERENCE



The Scout Association of Croatia is a national scouting organization and the largest organization for children and youth in Croatia.



Boranka is the largest ever voluntary post-fire reforestation organized in Croatia.



PROGRAMME

Tuesday • 17 May 2022

8.30 – 9.30 **EAZA ACADEMY COURSE: An Introduction to Collaborative Conservation Planning**

Zagreb Zoo – Education Centre, Green Venue

19.00 – 22.00 **ICEBREAKER & REGISTRATION**

Zagreb Zoo – Restaurant

Wednesday • 18 May 2022

7.30 – 16.00 **REGISTRATION**

Hotel International – Banquet Lobby

8.30 – 9.30 **OPENING AND INTRODUCTION**

Hotel International – Grand Salon

● **Welcome by Director Zagreb Zoo**

Damir Skok • Zagreb Zoo (Croatia)

● **Welcome by Mayor of Zagreb**

Tomislav Tomašević • City of Zagreb (Croatia)

● **Introduction by Executive Director EAZA Executive Office**

Myfanwy Griffith • EAZA Executive Office (The Netherlands)

● **Introduction by EAZA Conservation Committee Chair**

Eric Bairrao Ruivo • Beauval Zoo (France)

9.30 – 10.30 **SAVING SPECIES TOGETHER WITH YOU 1**

Hotel International – Grand Salon

● **Saving species together with you – Action, Evidence and Influencing for species conservation**

Simon Bursland • Marlow Birdpark (Germany)

● **PICA – a support project for Pallas’s cat conservation, strategic planning and research**

Emma Nygren • Nordens Ark (Sweden)

● **Action Indonesia: A global collaboration to conserve anoa, banteng and babirusa**

Corinne Bailey, Stuart Young • IUCN SSC Asian Wild Cattle Specialist Group, Chester Zoo (United Kingdom)

● **An approach to conservation education to act for a sustainable future**

Tomislav Krizmanić • Zagreb Zoo (Croatia)

10.30 – 11.00 **Coffee / tea break**

Hotel International – Banquet Lobby

11.00 – 12.30 **SAVING SPECIES TOGETHER WITH YOU 1 (continued)**

Hotel International – Grand Salon

● **Evidencing Species Conservation**

Merel Zimmermann • EAZA Executive Office (The Netherlands)

● **Influencing action through collaborative species conservation planning**

Jamie Copsey • IUCN SSC Conservation Planning Specialist Group (United Kingdom)

● **Eco-friendly livelihoods in exchange for safe wildlife in Sumatra: a conservation story, that modern zoos made possible**

Frantisek Pribrsky • Ostrava Zoo / The Kukang Rescue Program (Czech Republic)

● **Outside the Scheme: Reintroduction of the endangered Northern Bald Ibis (*Geronticus eremita*) in Europe in the light of the International Action Plan**

Johannes Fritz • Waldrappteam Conservation & Research (Austria)

12.30 – 13.30 **Lunch**

Hotel International – Adriatic Salon

13.30 – 15.30 **NEW INITIATIVES, THOUGHTS, AND TOOLS FOR SPECIES CONSERVATION**

Hotel International – Grand Salon

● **New zoo-based international initiative fighting wildlife traffickers in Southeast Asia. Reaction on an ongoing trade shift from monitorable animal markets to the online trade with a focus on small mammals especially pangolins, small primates and songbirds**

Tomas Ouhel, Frantisek Pribrsky • Zoo Liberec/ Palacky University, Ostrava Zoo / The Kukang Rescue Program (Czech Republic)

● **Presenting the ornamental species knowledge initiative: A tool to highlight ornamental fish for ex-situ management**

Jacqueline Juergens • Species360, University of Southern Denmark (Denmark)

● **Collaborative approach to the development of novel technology: Using a safari park for the development of unobtrusive biodiversity monitoring utilising artificial intelligence and camera technology**

Naomi Davies Walsh • Knowsley Safari, Liverpool John Moores University (United Kingdom)

● **Under the lens of the EU Zoos Directive: Assessing the conservation potential of zoos and aquariums for threatened species in the European Union**

Johanna Staerk • Species360, University of Southern Denmark (Denmark)

● **Collaborating for conservation – The value of local community knowledge**

Rebecca Biddle • Twycross Zoo (United Kingdom)

15.30 – 16.00 Coffee / tea break

Hotel International – Banquet Lobby

16.00 – 18.00 MOVIES & POSTERS

Hotel International – Grand Salon followed by poster session in Mediteran Salon

● **Great efforts for a small beetle – a conservation project for the Noble chafer (*Gnorimus nobilis*)**

Eddie Bach • Copenhagen Zoo (Denmark)

● **Local conservation efforts – Copenhagen Zoos amphibian projects in Denmark**

Lene Rasmussen • Copenhagen Zoo (Denmark)

● **Time flies (*Vrijeme leti, hoću li i ja?*)**

Marko Modrić, Tomislav Anić • Priroda Public Institution and partners (Croatia)

● **On the wings of the Bura wind (*Na krilima bure*)**

Marko Modrić, Tomislav Anić • Priroda Public Institution and partners (Croatia)

● **Reintroduction of the endangered Northern Bald Ibis (*Geronticus eremita*) in Europe**

Johannes Fritz • Waldrappteam Conservation & Research (Austria)

● **IUCN SSC Conservation Planning Specialist Group – Tools and training**

Jamie Copsey • IUCN SSC Conservation Planning Specialist Group (United Kingdom)

participants to arrange own dinner

19.00 Departure for Zagreb City tour

Meeting point: in front of the Hotel International
Transport is arranged.

19.30 – 21.15 ZAGREB CITY TOUR

Thursday • 19 May 2022

8.30 – 10.30 MEASURING IMPACT OF CONSERVATION

Hotel International – Grand Salon

KEYNOTE SPEAKER – MOLLY GRACE

● **The IUCN Green Status of Species – identifying past and potential future conservation impact**

Molly Grace • University of Oxford and Co-Chair, IUCN Green Status of Species Working Group (United Kingdom)

● **A pragmatist's guide to measuring impact! Why measuring conservation impact is a challenge, exploring practical approaches in the zoo sector, and applying performance management principles for the Chester Zoo Conservation Masterplan Strategy**
Scott Wilson • Chester Zoo (United Kingdom)

10.30 – 11.00 Coffee / tea break

Hotel International – Banquet Lobby

11.00 – 13.00 CONSERVATION IN SOUTH-EAST EUROPE

Hotel International – Grand Salon

KEYNOTE SPEAKER – DUŠAN JELIĆ

● **Conservation in South East Europe – opportunities and challenges**

Dušan Jelić • President of the Croatian Institute for Biodiversity (Croatia)

● **Balkan stripe-necked Terrapin (*Mauremys rivulata*) task force in Croatia**

Dragica Šalamon • University of Zagreb, Faculty of agriculture (Croatia)

● **The example of multisectoral cooperation in protection of endangered the species *Proteus anguinus* in Croatia**

Ivan Cizelj • Zagreb Zoo (Croatia)

● **Conservation work and activities of Beli Visitor Centre and Rescue Centre for Griffon Vultures in Croatia**

Marko Modrić • Priroda Public Institution (Croatia)

● **Collaboration on ex situ methodology development for in situ monitoring of Balkan snow vole**

Dijana Beneta • Zagreb Zoo (Croatia)

13.00 – 14.00 Lunch
Hotel International – Adriatic Salon

14.45 **Departure for Zagreb Zoo visit**
Meeting point: in front of the Hotel International
Transport to the Zoo is arranged.

16.00 **Zagreb Zoo visit**
Snacks and drinks are provided.

Friday • 20 May 2022

8.30 – 11.00 **WORKSHOPS / DISCUSSIONS**
Hotel International – Grand Salon, Adriatic Salon I, Adriatic Salon II

GRAND SALON ● **Developing an institutional Conservation Strategy – challenges and opportunities**

Merel Zimmermann, Tomasz Rusek, Alice Albertini • EAZA Executive Office (The Netherlands)

ADRIATIC I ● **Large Carnivores in the Dinarides: Management, Monitoring, Threats and Conflicts Establishing a transnational exchange (discussion) platform for the management of large carnivores in the Dinaric region – Background Report**

Andrea Solić • Carnivora Magna (Croatia)

ADRIATIC II ● **It begins with an Abstract – Showcasing ex- and in-situ conservation work at talks, seminars, workshops and conferences**

Carl Treholt • Copenhagen Zoo (Denmark)

11.00 – 11.30 **Coffee / tea break**
Hotel International – Banquet Lobby

11.30 – 13.30 **SAVING SPECIES TOGETHER WITH YOU 2**
Hotel International – Grand Salon

● **The link between Andean bears & honey in Chaparri Ecological Reserve in Peru with Bioparc Zoo de Doué-la-Fontaine support**
Tatiana Beuchat • Bioparc Zoo de Doué-la-Fontaine (France)

● **Saving species together: How zoos are contributing to wild tiger and Amur leopard conservation through the initiative WildCats Conservation Alliance**

Esther Conway • WildCats Conservation Alliance (United Kingdom)

● **“Together We Protect” – because, in Conservation, collectively, we can, we should, and we must**

Élio Vicente • Zoomarine Algarve (Portugal)

● **Using ex situ expertise for in situ conservation of critically endangered wild camel**

Jaroslav Simek, Bridget Johnson • Prague Zoo, Knowsley Safari (Czech Republic, United Kingdom)

● **Oriental tree frog (*Hyla orientalis*) (Bedriaga, 1890) in Latvia: success of Riga Zoo's reintroduction project**

Alessandro Di Marzio • Riga Zoo (Latvia)

● **Reintroduction Program and Conservation Efforts of The Endangered Persian Fallow Deer in the Judean Mountains**

Nili Avni-Magen • Jerusalem Zoo (Israel)

● **West African Primate Conservation Action – the One Plan Approach to primate conservation**

Andrea Dempsey • Heidelberg Zoo (Germany)

13.30 – 14.30 Lunch
Hotel International – Adriatic Salon

14.30 – 16.30 **FROM THE FIELD**
Hotel International – Grand Salon

● **Red colobus conservation initiative and collaboration possibilities (pre-recorded)**

Florence Aghomo • Red Colobus Conservation Network (RCCN) (Cameroon)

● **Update from Saola Foundation for Annamite Mountains Conservation**

William Robichaud • Saola Foundation for Annamite Mountains Conservation (USA)

● **Imported deforestation and sustainable agriculture in Europe**

Catherine Barton • Chester Zoo (United Kingdom)

● **Savannah in peril: Baluran National Park is fighting to survive**

Hariyawan Agung Wahyudi • Copenhagen Zoo (Denmark)

● **Trenggiling Conservation Program - Protection of Sunda pangolin in Indonesia using various methods**

Lucie Cizmarova • Olomouc Zoo (Czech Republic)

● **A holistic approach in the protection of Bangkaru Treasure Island in Sumatra: the role of zoos in conservation and research**
Tomas Ouhel, Pavel Zoubek • Palacky University, Liberec Zoo (Czech Republic)

16.30 – 17.00 CLOSING
Hotel International – Grand Salon

17.00 END OF CONFERENCE PROGRAMME

18.30 Arranged transport from Hotel International to Medvedgrad Castle (return as well)
Meeting point: in front of the Hotel International

19.30 – 1.00 FAREWELL DINNER
Castle Medvedgrad
Special castle tour is included.

Return buses are leaving to the Hotel International at:

- 22.00 hrs.**
- 23.30 hrs.**
- 01.00 hrs.**



Zagreb Zoo: African lion enclosure – Lions Rock Kidepo

Zagreb Zoo: capuchin monkeys and coatis enclosure



PICA – a support project for Pallas’s cat conservation, strategic planning, and research



Emma Nygren

Emma Nygren¹, David Barclay², Helen Senn²,
Katarzyna Ruta², Gustaf Samelius³

¹Nordens Ark, Sweden. ²Royal Zoological Society of Scotland., United Kingdom. ³Snow Leopard Trust, USA

Abstract

In 2016 a new global partnership project was founded by Nordens Ark, the Royal Zoological Society of Scotland, and Snow Leopard Trust. The project

called the Pallas’s cat International Conservation Alliance (PICA) was started with funding from Fondation Segre and is the first global conservation project for the species. During the first three year we set out to deliver several objectives ranging from education & awareness across range countries, species specific research to capacity building and global strategic planning. It goes without saying that with the Pallas’s cat range covering 16 countries, from Iran in the west through central Asia to China in the east, delivering all these objectives would be challenging. However, what the PICA team lack in numbers (we have only 5 staff) we like to think we make up for in passion, dedication, and the ability to form new relationships and collaborative approach.

One of PICA’s main aims is to enhance global collaborations between Pallas’s cat stakeholders to help develop global conservation efforts. To do this we engaged extensively with the Manul Working Group, IUCN Cat Specialist Group, field researchers, field projects, zoo collections and a range of small cat specialist. From camera trapping research and analysis, threat surveys, education campaigns to strategic conservation planning, PICA has a multi-functional approach toward conservation and research. Working collectively with this extensive network, PICA has played a significant role in the coordination and delivery of the first Status Review and Global Conservation Strategy for the species. The Status Review and the Global Conservation Strategy is the most extensive assessment of the species to date and covers key topics such as ecology, regional status assessments, legal status, trade, ex-situ conservation and management, threats, and diseases. With over 40 authors and co-authors from all range countries this has been the largest single

publication for the species to date.

PICA aims to continue its efforts in implementing effective conservation measures for the species and following the success shown in this project, with regards to our collaborative approach with other stakeholders, we intend to utilize the new conservation strategy and use this to focus and prioritize the best next steps in Pallas’s cat conservation.

Expected outcomes for participants

Collaboration is a critical component of conservation success, Zoos can make a big difference for a small cat, Importance of a one plan approach.

Action Indonesia: A global collaboration to conserve anoa, banteng and babirusa

Corinne Bailey^{1,2}, Stuart Young²

¹IUCN SSC Asian Wild Cattle Specialist Group, United Kingdom. ²Chester Zoo, United Kingdom.

Abstract

Anoa, banteng, and babirusa are amongst Indonesia's most threatened large ungulates. The Action Indonesia Global Species Management Plans (GSMPs) for anoa, banteng and babirusa have partnered since 2016 developing holistic conservation strategies for the three taxa using IUCN CPSG's One Plan Approach. Action Indonesia GSMP partners with the Sumatran tiger GSMP to align activities where possible. This international collaboration of over 50 implementing partners including IUCN SSC, regional zoo associations for Europe, North America and Indonesia (EAZA, AZA and PKBSI), NGOs, universities and government are working towards the vision of safe and stable in situ and ex situ populations of these species. Achievements include developing a global cooperative breeding approach to build stable ex situ populations, with particular focus in Indonesia. Capacity building from global zoo experts has trained over 250 Indonesian practitioners in husbandry methods and education. The collaboration established Action Indonesia Day, an annual global awareness-raising initiative to maximise education about these species' conservation. In 2021, more than 49 zoos celebrated Action Indonesia Day through participative activities and social media.

Further collaborative activities in 2021 include working with Indonesian Zoos and Aquariums Association (PKBSI), National Research and Innovation Agency, and Ministry of Environment and Forestry (KKH) to conduct sampling and genetic assessment of founder anoa, banteng and babirusa in Indonesian zoos, and to provide training to Indonesian researchers. Assessment of founder animals is particularly important, as their genetics are underrepresented in the global zoo populations.

In-situ, the GSMPs, PKBSI and Alas Purwo National Park – a priority location for banteng conservation in East Java – conducted a camera trap survey for Javan banteng in 2021. Data analysis is being conducted by park staff with technical support and training from the GSMP. Effective population monitoring of in situ

populations is essential to increasing knowledge of population sizes and trends, identifying potential threats and informing conservation actions.

In 2022, the GSMP working groups, PKBSI, KKH and Action Indonesia partner institutions are planning activities for the next masterplan period 2022-2025. The considerable awareness of the GSMP framework in the Indonesian conservation community provides a strong opportunity to expand to include other Indonesian species in future.

Expected outcomes for participants

Knowledge of how large scale, multi-partner collaborations like GSMPs work, Overview of GSMPs in Indonesia (and relevance to other species), Highlights of the potential for zoos to join the collaboration or offer support.

An approach to conservation education to act for a sustainable future

Antonieta Costa¹, Tomislav Krizmanić²

¹Lisbon Zoo, Portugal. ²Zagreb Zoo, Croatia.



Antonieta Costa



Tomislav Krizmanić

Abstract

Zoos and aquariums are unique learning environments and play a crucial role in advancing conservation through education and scientific research to meet the UN Sustainable Development Goals. This role includes ensuring higher levels of biological literacy and promoting sustainable behaviour, engaging in active citizenship, support and empowering our audiences to take positive actions towards species and habitat conservation. Zoos and aquariums have an incredible power to engage the public with their ability to create emotions, attracting new audiences and through them amplifying species and habitats conservation awareness.

By fostering emotional connections, zoos and aquariums encourage individuals and communities to take positive conservation actions and engage in more sustainable consumer behaviours. Long term non-formal Environmental Education programmes can foster the progressive transformation of values, attitudes and conscious behaviours about biodiversity conservation through new strategies and tools to respond to different levels of interest and needs.

The EAZA Conservation Education Committee is supporting EAZA Members in implementing a holistic and integrated approach to conservation education through the use of the Conservation Education Standards, which focus on taking a strategic approach to providing effective biodiversity-focused education that connects visitors to nature and empowers them to take positive action to contribute to conservation.

The committee also encourages a cohesive approach to education across the EAZA membership by collaborating with other conservation focused EAZA groups and engaging with EAZA educators from across our region through networking events and social media.

This presentation will explore effective strategies for communicating conservation through education activities, and how these approaches can be applied by zoos and aquariums across the EAZA region and beyond.

Expected outcomes for participants

Empowering audiences to take positive actions towards species and habitat conservation, Conservation Education can foster the progressive transformation of values, attitudes and conscious behaviours about biodiversity conservation, Conservation Education Standards, Collaboration with other conservation focused EAZA groups.

Influencing action through collaborative species conservation planning

Jamie Copsey

IUCN SSC Conservation Planning Specialist Group

Abstract

Few of us have the influence or expertise to ensure that priority actions identified for threatened species recovery are implemented on our own; it is a collaborative process. Such collaboration brings with it complexity as different views are expressed, conflicting information is shared, and diverse values are brought together. The Conservation Planning Specialist Group (CPSG) of the IUCN Species Survival Commission has been working in this complex space for more than 40 years, helping zoos, aquaria, governments and non-governmental organisations to develop shared plans for species of concern. This short talk will introduce you to some of the [Principles and Steps](#) to collaborative species conservation planning, highlighting how through careful process design and facilitation it is possible to develop plans that unite stakeholders and ensure that species recovery is achieved.

Eco-friendly livelihoods in exchange for safe wildlife in Sumatra: a conservation story, that modern zoos made possible

Frantisek Pribrsky^{1,2}, Lucie Cizmarova^{3,2}, Jennie Simanjuntak²

¹Ostrava Zoological Garden and Botanical Park, Czech Republic. ²The Kukang Rescue Program (Yayasan Peduli Kelestarian Satwa Liar), Indonesia. ³Olomouc Zoo, Czech Republic.



Frantisek Pribrsky



Lucie Cizmarova



Jennie Simanjuntak

Abstract

Modern zoological gardens play a key role in biodiversity preservation around the world thanks to the fact that they breed species in human care (ex situ) and at the same time realize or support field conservation projects in the species' natural areas (in situ). Thanks to the long-term support by numerous Czech and other European zoological gardens, The Kukang Rescue Program fighting the illegal trade in slow lorises on the Indonesian island of Sumatra started engaging local communities in wildlife conservation while at the same time supporting their sustainable livelihoods. Within the new "Kukang Coffee" project, in cooperation with coffee farmers of established "Kukang Coffee Community", representatives of the rescue program introduced a methodology for cultivation and processing of high-quality eco-friendly coffee. As part of their membership, the farmers receive proper advice and training in the harvesting and processing of coffee beans that the program consequently buys from them at a price that is higher than on the local market. In return, individual members of the Kukang Coffee Community are required to make a legally binding promise that they and their families will protect endangered and protected animals and abide by the ban on their hunting. In addition, those farmers receive advice from a team consisting of a coordinator and two assistants who used to be poachers. However, those ex-poachers now control not only the processing of coffee according to the set methodology, but also compliance with the ban on hunting endangered

animals. Since 2020, more than 50 farmers from three villages have been cooperating with the Kukang Coffee project. Thanks to the established coffee community, local people benefit more from their coffee and at the same time have greater motivation and understanding to protect local endangered species. It has therefore been possible for farmers to make a significant profit from nature conservation and same time actively protect slow lorises, pangolins and other threatened wild animals in the forest around the village. Thanks to the project the area around Kuta Male village has become such a small paradise for these animals.

Expected outcomes for participants

A way of close cooperation between the zoos, NGOs and local communities on the field in situ project, Linking the method of sustainable development aid with the protection of endangered species, Systematic method of long-term community engagement, Alternative subsistence method for poachers, Use of field research as a method of evaluating and measuring impact of conservation, Fundraising opportunities through development aid grants, Way of cooperation with the embassies in developing countries.

SAVING SPECIES TOGETHER WITH YOU 1

Outside the Scheme: Reintroduction of the endangered Northern Bald Ibis (*Geronticus eremita*) in Europe in the light of the International Action Plan

Johannes Fritz^{1,2}, Markus UNsöld³

¹Waldrappteam Conservation & Research, Austria.

²University of Vienna, Department of Behavioral and Cognitive Biology, Austria. ³Bavarian State Collection of Zoology; Munich, Germany.



Johannes Fritz

Abstract

Two populations of the endangered Northern Bald Ibis (*Geronticus eremita*) are currently established in Europe, a sedentary population in Andalusia and a migratory one in Central Europe. Demographic parameters and a population viability analysis indicate that at least the migrating population is close to self-sustainability. In addition, habitat analysis and distribution models identify generous suitable feeding habitats along the northern Alpine foothills. Both projects are being implemented with substantial support from European zoos.

In 2015, AEWA published an International Action Plan (IAP) which defines eight Principal Range States in the Middle East and Northern Africa, “where the species recently occurred, and which have the major responsibility for the implementation”. The two ongoing translocation projects in Europe, where the species went extinct already 400 years ago, are considered in the IAP but primarily regarded as experimental to develop methodology needed for future releases within the Principal Range States. Accordingly, some conservationists propose “targeted lobbying and gentle pressure from international nature conservation organizations” in the Middle East or reallocation of fund from the European projects to Morocco, both rather polemical approaches. Six years after implementation of the IAP, the situation for the species has improved considerably, although the species is extinct in seven of the eight Principal Range States and unlikely to return to the wild there for a variety of reasons. But fortunately, the projects in Europe, largely outside the scheme but with major support by zoo associations, provide positive prospects for the conservation of the species.

The Northern Bald Ibis is thus a prominent example for the controversy between different approaches to the conservation of endangered species. IAPs, as in the case of this species, are sometimes appearing to be more ideologically shaped than factually based. Zoo institutions, on the other hand, tend to act pragmatic and empirically based in their conservation efforts, as in the case of their support for the successful European Northern Bald Ibis projects.

Expected outcomes for participants

Facts about the European Northern Bald Ibis reintroduction program, Involvement of zoo institutions in bird translocation and conservation, Northern Bald Ibis conservation in the frame of an International Action Plan, Controversy between ideologically shaped and factually based conservation approaches.

NEW INITIATIVES, THOUGHTS AND TOOLS FOR SPECIES CONSERVATION

New zoo-based international initiative fighting wildlife traffickers in Southeast Asia. Reaction on an ongoing trade shift from monitorable animal markets to the online trade with a focus on small mammals especially pangolins, small primates and songbirds.

Tomas Ouhel^{1,2}, Frantisek Pribrsky^{3,4}, Pavel Zoubek¹, Lucie Cizmarova⁵, Adela Hemelikova^{1,6}, Martin Schlossarek²

¹Zoo Liberec, Czech Republic. ²Palacky University, Czech Republic. ³Zoo Ostrava, Czech Republic. ⁴The Kukang Rescue Program, Indonesia. ⁵Zoo Olomouc, Czech Republic. ⁶Czech University of Life Sciences Prague, Czech Republic.



Tomas Ouhel



Frantisek Pribrsky

Abstract

Southeast Asia has become one of the most threatened biodiversity hotspots in the world over the past decades. Due to extensive agricultural land conversion, population growth, and exploitation of its natural resources, both the general biodiversity (gamma diversity) as well as the unique island ecosystems in the Sunda region, rich in endemism, are facing the fastest decline of biodiversity than ever before in human history. International conservation and scientific authorities recognize this fact and have acted by launching various multistakeholder initiatives such as IUCN -ASAP (Asian Species Action Partnership), etc. Our new initiative in Southeast Asia is aimed at decreasing the wildlife trade. This project, which will be our first Southeast Asian team, is based on discussions with EAGLE Network experts and their advisory support. The EAGLE Network (Eco Activists for Governance and Law Enforcement) based in Central Africa, has jailed more than 2,000 noteworthy wildlife traffickers in the past few years by fighting corruption to break complicity and ensure justice. Our team will be using their example and molding it to fit

Southeast Asia's specific issues.

Thanks to the support of Zoo Liberec, Zoo Ostrava, Zoo Olomouc, and Zoo Wroclaw we were able to create an international team of conservationists, cyber security experts, and lawyers to start collecting data of illegal online trading of wildlife, with a focus on small mammals, in particular pangolins, small primates, and songbirds. The songbird trade is a natural follow-up on the EAZA Silent Forest conservation campaign.

The results from the six-month data collection showed the horrifying volume and capacity of the trade. The majority of the illegal wildlife trade is happening online, with traffickers executing deals within close groups. To our benefit, most traffickers have a lack of experience and understanding of cyber security so they leave an unerasable trace of their deals in the online space, which we can use to identify all parties involved. The second phase of this team's project will be to create a set of law enforcement actions focused on newly discovered pangolin scales traffickers and songbird traders.

Our initiative will be launched and presented during the EAZA conservation forum 2022 and conference participants will have a chance to talk to our members and be informed of ways they can actively participate in upcoming projects.

Expected outcomes for participants

Chance to change, Partnership in mitigation of illegal wildlife trade, Zoos working together, Cyber security.

NEW INITIATIVES, THOUGHTS AND TOOLS FOR SPECIES CONSERVATION

Presenting the Ornamental Species Knowledge Initiative: A tool to highlight ornamental fish for ex-situ management

Jacqueline Juergens^{1,2}, Rikke Oegelund Nielsen^{1,2}, Morgane Tidiere^{1,2}, Dalia Conde^{1,2}

¹Species360, USA. ²University of Southern Denmark, Denmark.

Abstract

The ornamental aquarium business is a multi-million-dollar industry that has been largely unmonitored and unregulated, leading to potential overexploitation of the species involved. Ornamental fish include both freshwater and marine species most from the class Actinopterygii which includes over 40 thousand species. Due to the sheer number of species, but also the fact that this group is largely understudied, and species-level data is missing, prioritization for ex-situ management has been difficult.

Here we developed the Ornamental Species Knowledge Initiative collecting available data from online databases and publications on human use, convention & treaties, extinction risk, management opportunities, and biological information on ornamental fish. The collected data makes it possible to narrow down species from this huge group in need of protection and highlight the unique opportunities for zoos and aquariums to support species conservation.

Based on data from Species360's Zoological Management System we found that zoos and aquariums hold 1 072 598 individuals of 3581 Actinopterygii species. This includes 343 threatened species (12 % of all threatened Actinopterygii) and 147 data deficient species (3% of all data deficient Actinopterygii). Additionally, zoos and aquariums hold many highly traded species such as the Blue green Chromis *Chromis viridis*, Blue demoiselle *Chrysiptera cynea*, and the endangered Banggai Cardinalfish *Pterapogon kauderni*, with tens of thousands of imports into the EU and US every year.

By highlighting such species, the data and analysis of the Ornamental SKI can support management decisions for zoos and aquariums for this speciose group of fish



Jacqueline Juergens

Expected outcomes for participants

Participants will have gotten to know a tool to identify species in need of ex situ management for their collections, participants will be sensitised to threat of relying on wild sourced specimen for aquarium collections, the data presented may help the relevant TAGs to develop their EEPs, the talk may also serve as an introduction to ornamental fish conservation.

NEW INITIATIVES, THOUGHTS AND TOOLS FOR SPECIES CONSERVATION

Collaborative approach to the development of novel technology: Using a safari park for the development of unobtrusive biodiversity monitoring utilising artificial intelligence and camera technology

Naomi Davies Walsh^{1,2}, Carl Chalmers², Paul Fergus², Steven Longmore², Bridget Johnson¹, Serge Wich²

¹Knowsley Safari, United Kingdom. ²Liverpool John Moores University, United Kingdom



Naomi Davies Walsh



Carl Chalmers



Paul Fergus



Steven Longmore



Bridget Johnson



Serge Wich

Abstract

Human activities such as poaching, the illegal wildlife trade, and habitat loss due to urbanisation are driving the extinction of species with cascading consequences on economies, international security, and the natural world itself. As a result, there is an urgent need to rapidly deploy scalable and cost-effective monitoring technologies to reduce illegal activities, monitor animal populations, and better understand both wildlife and the environments they inhabit.

Traditional conservation approaches require observers to be in the field to conduct surveys which are expensive, difficult to deploy and manage and often struggle to facilitate early intervention or help to stop or mitigate emerging threats.

Conservationists have developed and continue to explore ways to overcome these barriers, using automated data collection equipment such as camera traps, drones, and acoustic recording units. This results in vast amounts of sensor data such as images and audio which are typically processed manually. Usually, the data itself only provides a snapshot in time and is often centred around a single data source. Analysing the acquired data is both time and resource intensive, consequently leading to reactive interventions. It is therefore difficult to gather adequate data to further our understanding of animals, their behaviour, population dynamics, and mitigate current and emerging threats, all of which are critical for understanding both short and long-term risks to our ecosystems.

To combat this, there is a unique opportunity to capitalise on the many advances Artificial Intelligence (AI) already provides in other sectors. AI technology utilising edge devices such as camera traps and drones can lead to near real-time detection and classification of animals, humans and man-made objects indicative of threats such as poaching (cars, fires etc.), which in turn can lead to proactive conservation interventions. However, accessing remote field locations to test and further develop this technology is impractical, costly, and time consuming. Collaboration between Knowsley Safari and Liverpool John Moores University has allowed this technology to be trialled and developed in a convenient and accessible location.

To date, the technology archives over 90% accuracy for classification. It is possible to obtain thousands of images of animals within the safari park, bringing the system to a point where in-situ field trials are viable. Deploying AI technology in this way has significant potential for field conservation, in addition to aiding captive animal management. Furthermore, this collaboration highlights the importance of zoological collections as test sites for novel conservation techniques.

Expected outcomes for participants

New understanding of how zoos can contribute to the development of novel conservation technology, To further consider how zoos and aquariums can be used as a test site for the development of field conservation research.

NEW INITIATIVES, THOUGHTS AND TOOLS FOR SPECIES CONSERVATION

Under the lens of the EU Zoos Directive: Assessing the conservation potential of zoos and aquariums for threatened species in the European Union

Johanna Staerk^{1,2}, Fernando Colchero^{1,2},
Melissa A. Kenney³, Kerrie A. Wilson⁴, Wendy B. Foden⁵,
Jamie A. Carr^{5,6}, Zjef Pereboom^{7,8}, Lucie Bland^{1,9},
Nate Flesness¹, Tara Martin¹⁰, Luigi Maiorano¹¹,
Julia E. Fa¹², Hugh P. Possingham¹³, Dalia A. Conde^{1,2}



Johanna Staerk

¹Species360, USA. ²University of Southern Denmark, Denmark. ³University of Minnesota, USA. ⁴Queensland University of Technology, Australia. ⁵Species Survival Commission, Switzerland. ⁶IUCN Global Species Programme, United Kingdom. ⁷Royal Zoological Society of Antwerp, Netherlands. ⁸Antwerp University, Netherlands. ⁹Eureka Publishing, Australia. ¹⁰University of British Columbia, Canada. ¹¹University of Rome, Italy. ¹²Manchester Metropolitan University, United Kingdom. ¹³The University of Queensland, Australia.

Abstract

Nearly a fifth of all terrestrial vertebrates within the European Union (EU) are threatened with extinction. To curtail further biodiversity losses, zoos and aquariums are actively contributing to their conservation, e.g., through conservation captive breeding, reintroduction programs, or by providing expertise and funding to conservation projects in the wild. To increase the effectiveness of their conservation efforts, zoos and aquariums are increasingly adopting an integrated approach to species conservation in which ex-situ and in-situ measures are closely linked and align with current EU conservation legislations, such as the EU Birds and Habitats Directive. This approach has also recently been highlighted in the “EU Zoos Directive Good Practices Document”, which aims to support EU member states to ensure best practices across zoos. To support the EU Zoos Directive, we assessed EU species composition and population sizes in EU zoos and their representation in different regional and global conservation assessment schemes and legislations. We found that EU zoos currently keep 44% of EU threatened species, 56% of species protected under the EU Birds or Habitats Directive, 66% of EU species vulnerable to climate change, 25% of EU species listed by the Alliance for Zero Extinction (AZE), 30% of Evolutionary Distinct and Globally Endangered (EDGE) EU species, while 5% are subject to ex-situ conservation. We further developed a cost-effectiveness

framework to rank species and conservation recommendations for additional ex-situ and in-situ interventions for 277 at-risk EU species. We combined extinction risk, zoo population sizes, habitat protection levels under the Natura2000 framework, evolutionary distinctiveness and conservation management costs to assess additional investments in captive breeding and habitat protection. This framework provides a first step to facilitate integrated, data-driven conservation management decisions under EU legislation and policies to prioritize conservation actions for threatened species as recommended in the EU Zoos Directive.

Expected outcomes for participants

The value of EU zoos and aquariums in keeping locally threatened species, Opportunities and priorities for EU species conservation, Species prioritisation methods to support conservation management decisions for EU threatened species.

NEW INITIATIVES, THOUGHTS AND TOOLS FOR SPECIES CONSERVATION

Collaborating for conservation – The value of local community knowledge

Rebecca Biddle¹, Ivette Solis-Ponce², Martin Jones³, Stuart Marsden³, Mark Pilgrim⁴, Christian Devenish³

¹Twycross Zoo, United Kingdom. ²Amazona Lilacina Conservation Project, Ecuador. ³Manchester Metropolitan University, United Kingdom. ⁴Werribee Open Range Zoo, Australia.



Rebecca Biddle

Abstract

An understanding of species distribution is essential for conservation planning. Species distribution models and their outputs can be particularly useful, and are widely used in conservation planning, however, obtaining the necessary occurrence data for these can be challenging, particularly for species that are rare, sparsely distributed, and inconspicuous. Equally an understanding of the attitudes and behaviours of communities living alongside animal species, can help to identify ways to support their future conservation.

To understand the distribution of the newly described and Critically Endangered Amazona lilacina, we used a collaborative approach, gathering data from multiple sources including NGOs, ornithologists, online databases, and local community members. We combined this with environmental variables to create species distribution models which predict the remaining suitable habitat for this parrot species. We then conducted interviews to record local peoples' attitudes towards this species, and to quantify any behaviours that could have a possible negative effect on the population.

We found a high level of overlap between distribution models based on local community information compared to those built using data from ornithologist observations and online databases. Furthermore, we found if local community members were able to answer a number of questions about the species in order to confirm their observations, the resulting distribution models outperformed all others.

We found that the vast majority of people living alongside *A. lilacina*, believe that wild parrots are important for nature and that they themselves have a responsibility to protect them. But we also found evidence of pet parrot keeping and parrot trapping throughout the species range, with 66% of all communities having pet parrots and 31% having pet *A. lilacina*. Attitudes towards pet keeping and trapping differed amongst communities with 20–52% believing it was acceptable to keep pet parrots, and 32–74% believing it was acceptable to catch parrots to sell.

In conclusion, we suggest that local community knowledge offers a cost-efficient and accurate method for obtaining data for species distribution modelling and show that understanding attitudes and behaviour can help to inform conservation need and engage communities in species conservation

Expected outcomes for participants

The value of local community knowledge and how this can be used to inform conservation planning for any species, Knowledge regarding a novel approach to scientific methodology useful for conservation planning - i.e. specifically species distribution modelling, How community surveys can be used to inform conservation action and encourage community engagement.

MOVIES

MOVIE - Great efforts for a small beetle - a conservation project for the Noble chafer (*Gnorimus nobilis*)

Eddie Bach

Copenhagen Zoo, Denmark

Abstract

Copenhagen Zoo has made a conservation project to save one of last known strongholds in Denmark for the Noble chafer. This have included setting up a breeding programme, habitat restoration and reintroductions. During this project a lot of new skills, tools and techniques had to be developed to succeed with conservation of a saproxylic beetle in a fragmented landscape. A lot of local community involvement and landowner coordination as well as funding was needed to secure a long-lasting positive impact.

Expected outcomes for participants

new tools and techniques on insect conservation, conservation is not all about cute, furry animals.

MOVIE - Local conservation efforts - Copenhagen Zoos Amphibian projects in Denmark

Lene Rasmussen

Copenhagen zoo, Denmark

Abstract

Since 2001, Copenhagen Zoo have been involved with conservation projects of several threatened amphibian species such as Natterjack toads, Fire-bellied toad and Green toads.

Conservation breeding and habitat restoration has been part of the solutions as well as a strong local community work has played a vital role of the success. Project coordinator and keeper, Lene V. Rasmussen is presenting the background of the projects and shearing her experiences through a movie, done on the projects

Expected outcomes for participants

Know how on conservation breeding, the importance of local community work, shared enthusiasm.

ADDITIONAL MOVIES WITHOUT ABSTRACT

Time flies (Vrijeme leti, hoću li i ja?)

Marko Modrić/Tomislav Anić

Priroda Public Institution and partners, Croatia

On the wings of the Bura wind (Na krilima bure)

Marko Modrić/Tomislav Anić

Priroda Public Institution and partners, Croatia

Reintroduction of the endangered Northern Bald Ibis (*Geronticus eremita*) in Europe

Johannes Fritz

Waldrappteam Conservation & Research, Austria

IUCN SSC Conservation Planning Specialist Group | Tools and training

Jamie Copsey

IUCN SSC Conservation Planning Specialist Group

POSTERS

Collaboration for conservation of endangered bird species between Sofia Zoo and Bulgarian NGO's

Dobromir Borislavov, Katerina Zareva-Simeonova, Emilia Toncheva

Sofia Zoo, Bulgaria

Abstract

Sofia Zoo has a long-term cooperation with Bulgarian NGOs and participates in programs for breeding and reintroduction of endangered birds of prey (Griffon vultures and Egyptian vultures) since 2000. In the period 2020-2021 this cooperation was particularly intensive and covered two new endangered bird species of Bulgarian nature - Black vulture (*Aegypius monachus*) and Lesser kestrel (*Falco naumanni*). In 2020, the breeding of 3 pairs of Lesser kestrels, locally endangered and rare species in Bulgarian, started at the Birds sector. The specimens were provided for the purpose of a breeding program by NGO Green Balkans as a part of the project "Greater chance for the Lesser Kestrel in Bulgaria - Restoration of the Lesser Kestrel" (LIFE11 NAT / BG / 360). In 2020 and 2021, 9 chicks were hatched in Sofia Zoo. They were sent to the adaptation aviary of the Demonstration Center for the Lesser Kestrel in Sakar Protected Area for reintroduction to restore the wild population of the species in Bulgaria.

Sofia Zoo also supports the activities of the international project "Bright Future for the Black Vulture" - LIFE14 NAT / BG / 649, which is a joint initiative of partners Green Balkans, Wildlife Fund and fauna (FDFF) and the Society for the Protection of Birds of Prey from Bulgaria, the Vulture Conservation Foundation from the Netherlands, Junta de Extremadura from Spain and Euronatur from Germany. In 2021 a herd of 15 fallow deer was donated from Sofia Zoo to FDFF for breeding and reintroduction in natural habitat of the Black vulture in Bulgaria. At the end of 2021 as a follow up of this project, Sofia Zoo received a pair of Black vultures. The birds were not suitable for release in the wild, therefore, were provided for breeding in captivity. The Black Vulture is in category "Extinct" in the Red Data Book of the Republic of Bulgaria.

Sofia Zoo also collaborates on the international project "Egyptian Vulture New LIFE" (LIFE16 NAT / BG / 000874), coordinated by the Bulgarian Society for the Protection of Birds, providing 3 young Egyptian vultures for the restocking program of the project. The birds were released in a suitable habitat in Bulgarian nature with GPS data loggers.

Expected outcomes for participants

Sharing experience, Inspiration for conservation.

POSTERS

A glimpse of the behavior and activity of conservatively important species of small mammals at Sofia Zoo - the result of a successful collaboration with Sofia University "St. Kliment Ohridski"

Katerina Zareva-Simeonova¹, Venislava Spasova², Daniela Simeonovska-Nikoliov²

¹Sofia Zoo, Bulgaria. ²Faculty of Biology of Sofia University „St. Kliment Ohridski”, Bulgaria

Abstract

One of the biggest challenges in the 21st century is to prevent biodiversity loss. Universities with their scientific potential and zoos can play a key role in this process as centers for keeping and breeding rare and endangered species. Such a successful cooperation was built between a team from the Faculty of Biology of Sofia University „St. Kliment Ohridski” and Sofia Zoo within the project for implementation of pilot activities for keeping and breeding conservatively important species of small mammals.

The activities were related to field research as well as to the creation of conditions for breeding and behavioral studies and adaptation in captivity of species such as European souslik (*Spermophilus citellus*)-(EN), European hamster (*Cricetus cricetus*)-(CR), Romanian hamster (*Mesocricetus newtoni*)-(NT), Hazel dormouse (*Muscardinus avellanarius*)-(LC).

At the laboratory of the Ecological Research and Education Center in Sofia Zoo a special condition for the purpose of the project activities were created and were accommodated European sousliks (rescued from a colony whose habitat was damaged) and observations on their behaviour and adaptation were conducted. Additionally, 2 of them were housed in a specially created educational exhibit. It was opened in June 2021 and is the first exhibit about this emblematic and endangered species in Bulgaria. In the future, it may also house other species of conservatively important small mammals. The aim is to create a basis for conservation education for the public and rise their awareness for endangered species and the existing threats for them.

The implementation of this project is an example of strengthening the interaction between a scientific community as Sofia University and an institution such as Sofia Zoo, orientated toward application of scientific achievements and their practical use in conservation. That partnership provides sustainable results and opportunities for development of future reintroduction programs.

Expected outcomes for participants

Partnership for sustainable results and opportunities for development of future reintroduction programs., Example for interaction between a scientific community and zoos.

POSTERS

Reintroduction of Javan warty pig into Baluran National Park, East Java

Rudiar Anisa¹, Arif Pratiwi², Hariyawan Agung Wahyudi¹, Carl Traeholt³

¹Copenhagen Zoo, Indonesia. ²Baluran National Park, Indonesia. ³Copenhagen Zoo, Denmark.



Hariyawan Agung Wahyudi

Abstract

In 2004, a status review of the Endangered Javan warty pig (*Sus verrucosus*) revealed a significant decline of this species. It is endemic to Java and was once widespread across the island. In Baluran National Park, the latest reported sighting was in the 1980s after which no more records of the species exist. The results from an intensive camera trap surveys conducted by Copenhagen Zoo and Baluran NP from 2015 to 2020 found no warty pigs. As part of efforts to restore the ecosystem of Baluran NP, we developed a Javan warty pig reintroduction program in Baluran NP. A 2 hectares habituation enclosure was built in 2018. In the past 3 years, 4 individuals of wild piglets were rescued from poachers in the western part of East Java and raised in this facility.

In 2019, 11 individuals from Cikananga WRC and Taman Safari Indonesia were translocated to Baluran. In late February 2022, 9 individuals were translocated from Cikananga WRC into Baluran. Observations to understand their behaviour, social structure and group formation were undertaken, Individuals were also group to maximise the genetic diversity. Behavioural observations were made (e.g feeding, social, moving, resting, sexual behaviour, wallowing, defecation, and urination). The results show that the average percentage of activities of 15 individuals of Javan warty pigs reveal that the dominant activities are resting 39.01%, moving 30.42%, feeding 25.08%, social 4.96%, wallowing 0.40%, defecation 0.07%, urination 0.05%, and sexual 0.00%.

We also face close genetic relationships between translocated individuals, making it a challenge to group and breed the animal. Breeding activities happened during the habituation process; however the mortality was high (70%) presumably due to the small size of birth canal in the young sows. More time is needed to rewild and

consolidate strong social groups before the pigs are ready to be released into the wild. Since pigs play an important role in savanna ecology, the success of this program will be an important component of the ecosystem restoration of Baluran Savanna

Expected outcomes for participants

Reintroduction, Fighting local extinction, Conservation breeding, Warty pig habituation.

POSTERS

GPS monitoring and ecotoxicological study of grey seals (*Halichoerus grypus*) from the Gulf of Riga (Latvia)

Alessandro Di Marzio^{1,2}, Emma Martínez-López^{2,3}

¹Riga National Zoo (Riga Zoo), Meza prospekts 1, 1014, Riga, Latvia. ²Area of Toxicology, Oceanosfera Group, Faculty of Veterinary Medicine, University of Murcia, 30100, Murcia, Spain. ³Toxicology and Risk Assessment Group, Biomedical Research Institute of Murcia (IMIB-Arrixaca), University of Murcia, 30100, Murcia, Spain



**Alessandro
Di Marzio**

Abstract

The grey seal (*Halichoerus grypus*) (Fabricius, 1791) population of the Baltic Sea is in a slow process of recovery after being driven to the brink of extinction by intense hunting activity during the 20th century. Even so, the species faces numerous threats such as low birth and fertility rates and conflicts with human activities (e.g. fishermen). Another problem for its conservation is the contamination of the Baltic Sea, one of the most polluted seas in the planet. At present, we have little data on the grey seals from the breeding area of the Gulf of Riga; moreover, this area is one of the least studied from the point of view of environmental pollution.

Since 2019 Riga Zoo has integrated the activity of stranded seal rehabilitation (in cooperation with the Nature Conservation Agency) with two research projects. The first, in collaboration with the Toxicology Area of the University of Murcia (Spain), focuses on the ecotoxicological study of grey seals. We are studying the levels of metal pollution in this specie using the biological samples obtained from seals in rehabilitation (alive and dead). Besides, we are evaluating the possible influence of metal contamination on the health status of seals using hematology and biochemical parameters, obtained for the first time in grey seals in this area. Pinnipeds are identified as good sentinels due to several characteristics and they are also considered an important indicator of the health of ecosystems so applying the "One Health" methodology, we can use the data for early detection of possible threats to human health. In 2021 we have also started a pilot monitoring project using 3 GPS (SPOT-293, Wildlife computer®). The data obtained have allowed us, for the first time, to evaluate the survival capacity of the seals rehabilitated by our team and to study their migratory routes. The first data seem to indicate a good adaptability of the released animals. The observed migratory routes seem to indicate that the

released animals do not remain in the release area. These data provide important information for the development of conservation strategies for the species, highlighting the areas of greatest relevance. The data on the movements of these animals also allow a better interpretation of the ecotoxicological study data.

Expected outcomes for participants

One Health approach, Multidisciplinary research.

POSTERS

InterMuc: a new research project on interactions among wild felids in Europe and Africa

Ruben Portas^{1,2}, Joerg Melzheimer³, Bettina Wachter³, Pavel Kvapil⁴, Barbara Mihelič⁴, Miha Krofel^{1,2}

¹Biotechnical faculty, Department for Forestry, University of Ljubljana, Slovenia ²Cheetah Research Project, Leibniz Institute for Zoo and Wildlife Research in Berlin, Germany, Slovenia. ³Cheetah Research Project, Leibniz Institute for Zoo and Wildlife Research in Berlin, Germany. ⁴ZOO Ljubljana, Slovenia

Abstract

Big cats, such as leopards and cheetahs have always aroused interest of general public, which makes them very effective flagship species for broader conservation efforts. At the same time, they have an important ecological role in the ecosystems around the world. However, relationships among these felid species, which often determine community structure, remain poorly understood, although often several species share the same habitat. To fill this knowledge gap, we recently launched a new research project “InterMuc”, which is dedicated to answer some of the open questions about the life of several secretive felid species in Eurasia and Africa. The main research methods we use are capturing and GPS-telemetry of several cat species sharing the same area and setting up camera traps at their scent-marking sites and fresh kill sites. So far, we collared six Eurasian lynx and four European wildcats in Slovenia, as well as six leopards and five cheetahs in Namibia. Besides, we are also using existing data on Iberian lynx and European wildcats from the Iberian Peninsula, snow leopard and Pallas’s cat in Mongolia, as well as Sumatran tiger and three other tropical cats in Indonesia. Preliminary analyses indicated that interactions generally were stronger and there was more avoidance among cat species of similar body sizes and ecological niches, compared to species with larger differences in their body sizes and ecological niches. In addition, smaller cat species are likely to be under risk of intraguild predation throughout the body size gradient. Besides inter-specific interactions, we are also studying intra-specific interactions, particularly the sharing of prey remains, which appear to be much more widespread than generally expected.

Expected outcomes for participants

Inter-specific interactions, intra-specific interactions, felid species.

POSTERS

Diving into the life expectancies for sharks under human care

Rikke Øgelund Nielsen^{1,2}, Dalia Conde^{1,2}, Fernando Colchero^{1,2}, Morgane Tidiere^{1,3}

¹Species360, USA. ²University of Southern Denmark, Denmark. ³University of Southern Denmark, Czech Republic

Abstract

A species' life expectancy is a key life-history trait for instance to understand its vulnerability to the current extinction crisis. Life expectancy is correlated with a K-selected life history that involves long life spans due to low fertility, long gestation periods, late maturity, and slow growth. To estimate the life expectancy for sharks under human care in Zoos and Aquariums worldwide we analyzed data from the Zoological Information Management System (ZIMS). We included species with a minimum sample size of 70 individuals including live and historical individuals (The threshold of 70 individuals is based on the minimum number of individuals to run the Bayesian Survival Trajectory Analysis from Colchero et al., 2012).

A total of 15 species had a sample size big enough to estimate their life expectancy. Our results from animals under human care reveal life expectancies ranging from 2.3 for the zebra shark (*Stegostoma fasciatum*) to 12.8 years for the nurse shark (*Ginglymostoma cirratum*). While the best fitting model was similar for species within the same genus, the life expectancies were not. Our results show that it is necessary to assess species individually since differences within the same genus occur, and by that management, planning may be made at the species level and not higher taxon's. We found that the life expectancy for these 15 shark species can be explained by their body weight, reproductive mode, and trophic level. We as well found some life-history traits were similar for several of all sharks represented in aquariums, such as being nocturnal. We suggest further analyses on life expectancy with data from both captive and wild populations, to inform which other shark species might need international protection due to slow life-history traits.

Expected outcomes for participants

The key role of zoos and aquariums for conservation, Introduction to state-of-the-art methods to estimate life expectancies, Ex situ populations of sharks worldwide, Knowledge on shark management.



Rikke Øgelund Nielsen

POSTERS

Repopulation of red squirrel (*Sciurus vulgaris*) in the area of Zrinski Park in Čakovec

Dijana Beneta, Tomislav Krizmanić

Zoological Garden of Zagreb, Croatia.

Abstract

Although the red squirrel is listed under the least concern category on the IUCN Red List of Threatened Species, their number is in decline. The main causes of endangerment are habitat loss and habitat fragmentation, as well as raising treat by indirect competition of invasive grey squirrel in Europe. The main goals of the project are the successful soft release of individuals into the Čakovec's city park and the maintenance of the presumed urban population, building the network of local partners as well as raising awareness and education of local community. Zagreb Zoo collaboration with local government, institutions and companies proved essential for success, integrating all segments of local community into a conservation project. The results of such a pilot project will be a good basis for further potential release projects of this or related species.

Expected outcomes for participants

Understanding the importance of collaboration between zoos and various partners on conservation project, Design and develop conservation project that includes different segments of local communities, Design and develop project on soft release basis.

Always be ready for networking – case of rehabilitation and reintroduction of lynx cub

Dijana Beneta, Jadranko Boras

Zoological Garden of Zagreb, Croatia.

Abstract

Building partnerships with different kind of organizations and involvement in various projects has shown crucial in unexpected situation of rehabilitation and reintroduction of subadult Eurasian lynx (*Lynx lynx*) in Croatia. Eurasian lynx is native medium-sized cat that is protected by national law. Croatian lynx population is small, isolated, and inbred as it is threatened by habitat loss, fragmentation, poaching and depletion of prey.

Croatian Wolf and Lynx Intervention Team, which acts in the field in emergency situations, found an abandoned 2 month old male lynx cub. It was rehabilitated in Zoological Garden of Zagreb for 3 months and then spent another 4 months into enclosure for adaptation in National Park Risnjak financed by Ministry of Environmental Protection and Energy. From there he was released in nature (soft release) and monitored with GPS tracking collar for several months afterwards. Developing collaborations with several institutions, which have specific knowledge and experience, often yields productive results in conservation projects. General aim of this presentation is to encourage zoos and/or aquarium to become actively involved in engaging with field experts to conduct effective integrated in-situ and ex-situ project no mater of its scale or financial funds.

Expected outcomes for participants

Identify various unplanned occurrences and act in more timely manner, suggest ways in which collaboration can be improved in similar cases, Contributing to development of the Nature conservation plan as well as its implementation and enforcement.

The conservation of the Greater capricorn beetle (*Cerambyx cerdo*) in Sweden

Jimmy Helgesson¹, Jonas Hedin², Annika Lydänge³, Emma Nygren¹

¹Nordens Ark, Sweden. ²Kalmar Länsstyrelse, Sweden. ³Länsstyrelsen Blekinge, Sweden

Abstract

In 2012, Nordens Ark was commissioned by Kalmar County administrative board to develop and implement a method of breeding the great capricorn beetle, *Cerambyx cerdo*. This beetle is Sweden's largest longhorn beetle and can grow up to 5cm long, not including the long antennae. The species is classed as Critically Endangered (CR) and remains in only a single site in Sweden: in the Halltorp nature reserve on the island of Öland. Nordens Ark has since then developed an effective breeding method and is now producing around 400-800 larvas a year. In 2018 the first reintroduction effort was done to the mainland of Sweden This was the first time in 50-100 years that the greater Capricorn beetle returned to the mainland. Reintroductions is ongoing and at the same time the project is developing different survey methods. We are working with SLU to develop an artificial pheromone which aims to attract beetles to live traps. We are also training a conservation detection dog to be able to search and identify trees that contain larvae of the greater Capricorn beetle at the reintroduction site. In 2022 the project will also launch a radio tracking study where approximately 50 beetles will be fitted with a radio transmitter. This study will allow us to track dispersal and survival of the released beetles.

Expected outcomes for participants

Knowledge on innovative insect conservation, inspiration.

POSTERS

Developing a breeding method for the clouded apollo (*Parnassius mnemosyne*)

Jimmy Helgesson¹, Emma Nygren¹, Annika Lydänge², Cecilia Käll³, Martin Elmestål⁴

¹Nordens Ark, Sweden. ²Länsstyrelsen Blekinge, Sweden. ³Uppsala Länsstyrelse, Sweden. ⁴Länsstyrelsen i Stockholm, Sweden

Abstract

The clouded apollo butterfly (*Parnassius mnemosyne*) is one of Sweden's most endangered butterfly species and is found only in small and fragmented populations in Blekinge, in the border areas between Uppsala and Stockholm County and in Västernorrland County. The species has declined severely since the 1960s. The cause is not fully understood, but probably it's mainly due to changes in the habitat. Nordens Ark has been commissioned by the County Administrative Board of Blekinge, Stockholm and Uppsala Counties to develop a breeding method the clouded apollo butterfly in order to eventually be able to contribute with animals for release on suitable areas. The work takes place within the framework of action plan for endangered species.

In order to build a captive population of this species on Nordens Ark, a number of eggs have been collected from the wild population in Blekinge, Uppsala and Stockholm. The collection is done without harming the existing wild population. The breeding takes place in a greenhouse in the breeding centre at Nordens Ark. The eggs hatch in March and then the delicate larvae must directly find leaves of corydalis to eat. A month later they pupate. At the beginning of June, the fully formed white butterflies hatch and soon begin to mate and lay eggs. The eggs remain at Nordens Ark until next spring.

Work is currently underway to build a breeding population at Nordens Ark. Hopefully we will be able to send animals for release within the next few years.

Expected outcomes for participants

Innovative butterfly Conservation, captive breeding insects, importance of collaboration.

POSTERS

INSOSTENIBILE per la NATURA – how wildlife exploitation endangers us and the planet: Awareness-raising and educational actions in Northern Italy's largest zoological garden

Tommy Sandri¹, Katia Dell'Aira², Federica Avesani Zaborra¹, Marta Tezza², Cesare Avesani Zaborra^{1,2}

¹Fondazione A.R.C.A., Italy. ²Parco Natura Viva, Italy.

Abstract

The arrival of COVID-19 in our lives, and the situation we've been enduring for over a year prompts us humans to question our relationship with nature and wildlife. Over-exploitation of wildlife can lead to an increased exposure to dangerous pathogens because of an increased likelihood of a spill over from wildlife to us humans, as so starkly demonstrated by SARS-Cov-2. The pandemic has forced many, both locally and globally, to question our relationship with the other species with which we share this planet, particularly when it comes to wildlife exploitation.

Fondazione A.R.C.A and Parco Natura Viva created an exhibition in summer 2021 on the topic of wildlife exploitation. The exhibition consists of a series of physical panels and media content available on the web, available here:

<https://www.fondazionearca.eu/progetti/progetti-educativi/insostenibile-per-la-natura/insostenibile-per-la-natura-en>

The aim of the exhibition is to raise awareness amongst the public on the topics of human-wildlife relationship and "nature consumption". We provide visitors with opportunities to discover and learn about the multiple ways in which humans benefit from wildlife, be it for mere sustenance or business, which could allow a better understanding of how connected our existence is to that of other species, and how a lack of such awareness can lead to disastrous consequences. Moreover, we developed educational activities for the kids and teens attending our summer camps, and these activities will be promoted among local schools too. Our poster will focus on the development and implementation of both the exhibition and the educational activities.

KEYNOTE SPEAKER

The IUCN Green Status of Species – identifying past and potential future conservation impact

Molly Grace

Wadham College | Department of Zoology,
University of Oxford, United Kingdom | Co-Chair,
IUCN Green Status of Species Working Group



In 2021, the International Union for Conservation of Nature (IUCN) unveiled a new species recovery assessment: the IUCN Green Status of Species. Intended to complement the extinction risk assessment of the IUCN Red List, the Green Status introduces a standard definition of recovery and assesses species progress toward it, classifying species into new Species Recovery Categories. The Green Status also introduces four new Conservation Impact Metrics which evaluate the impact of past and future conservation actions on species recovery progress. This talk will provide a brief overview of the Green Status and highlight how it can be used to shine a spotlight on the contributions of ex-situ conservation efforts.

Molly Grace is a Research and Teaching Fellow at The University of Oxford (Wadham College and Department of Zoology). Since 2017, she has led the scientific development of the Green Status of Species and coordinated the IUCN Species Conservation Success Task Force. Since 2021, she has Co-Chaired IUCN Green Status of Species Working Group. Molly completed a PhD in Conservation Biology at the University of Central Florida in the US.

A pragmatist’s guide to measuring impact! Why measuring conservation impact is a challenge, exploring practical approaches in the zoo sector, and applying performance management principles for the Chester Zoo Conservation Masterplan Strategy

Scott Wilson

Chester Zoo, United Kingdom

Abstract

We all intrinsically recognise that measuring conservation impact is important. It helps us promote our success, attract funders and partners, but most importantly it provides a gauge. Measuring impact is to check that what we are doing is making a difference. If not, it should help us identify why and adaptively manage.

Conservation is complex though. A conservation project is not a simple production line. Projects are holistic with lots of stakeholders. We have challenges around attribution and causation, and project goals that may take several years to achieve. For zoos in particular we may have the added complexities of a portfolio of projects of varied shapes and sizes, and we may be funders, implementers or both.

A Master’s research project, finalised in 2021, explored these challenges to inform development of new impact measurement systems for Chester Zoo’s field conservation projects. The research ran parallel, and influenced, the development of the 10-year Chester Zoo Conservation Masterplan. It included a review of the current best practise and methods for measuring impact in the conservation sector. Additionally, secondary data research explored these same questions in the wider third sector. Was there anything there for zoos to learn from? The findings showed that the challenge of measuring impact is intrinsic across the third sector and identified common causes and barriers, many culturally embedded.

The second research component involved semi-structured interviews with conservation evaluation specialists. Here professional insights helped explore the topic of measuring conservation impact in much greater detail. Thematic analysis distilled these interviews into a number of key findings:

Context: Be clear why you want to measure impact. Infographics for an annual report should not be the primary aim! Measuring impact should be culturally embedded within organisations, measuring progress towards clear goals and targets.

Process: Measuring impact shouldn't be an add-on to the end of a project. It is a core project management component. Measuring impact needs clear indicator data. Indicators, and the actions needed to collect indicator data, should be 'baked in' at the design stage. They should be functional, facilitating adaptive management.

Sharing success: We can also use impact indicators to shout about our success. We should – it helps generate support and awareness. It shouldn't be the primary driver for measuring impact though. More importantly measures of impact can contribute to conservation evidence, helping us all to be more effective and efficient.

Expected outcomes for participants

Understanding of the basic principles as to why zoos should measure impact, Clearer understanding of the challenges and barriers to measuring impact for zoos, Guidance on pragmatic and practical approaches for how zoos can apply performance management principals to improve their conservation impact.

CONSERVATION IN SOUTH-EAST EUROPE

KEYNOTE SPEAKER

Conservation in Southeast Europe – opportunities and challenges

Dušan Jelić

President of Croatian Institute for Biodiversity, Croatia. BIOTA Ltd, Croatia.

My name is Dušan and I am a researcher and entrepreneur, but I started my conservation career as a fellow of Zoological Society of London in the EDGE programme. I want to tell you about some interesting conservation stories in South-eastern Europe. Some of them are already successful, some are a bit sad, and some are just great conservation opportunities. I worked in conservation of endangered Meadow Viper, elusive cave salamander – Proteus, scattered populations of rare European Snake-eyed skink and whole set of endemic semi-cave fish species unique to Dinaric Karst. My work has taken me across projects in Croatia, Bosnia and Herzegovina, Serbia, Montenegro and Macedonia, with additional international focus to Armenia, Georgia and Nepal. Conservation is not always straight forward and very often we do not see the whole picture from our narrow perspective. Some things that seem contra intuitive at first, end up being the better conservation strategies than the ones suggested by established facts. Therefore, I believe in science-based conservation and extensive publishing of gathered data. Great example is our cooperation with Zagreb ZOO and their long-term commitment to conservation and research.

Zoos give the general public amazing experiences with wild animals, providing a lifelong connection to wildlife that would otherwise not be developed. We are living in a world where we are growing detached from the animals and nature in general. Their role is to show each visitor the part that they can play in wildlife conservation.



Balkan stripe-necked terrapin (*Mauremys rivulata*) task force in Croatia

Dragica Šalamon¹, Ana Štih Koren²

¹University of Zagreb Faculty of Agriculture, Croatia. ²Association Hyla, Croatia.

Abstract

Over the past 18 years a student instigated aspiration to learn more about the Balkan Stripe-necked Terrapin population in Croatia gave rise to a number of NGO collaborations in smaller projects dealing with discovery of the species distribution, demographics and threats, reproduction biology, revitalization of habitats, and local awareness raising initiatives. This small avalanche of continuous local and regional activities, recognized and supported by the sector ministries, promoted the knowledge on the species from several ancient specimens in the museum to knowledge that enabled designating valuable habitats to Natura 2000 network, positioning this species as a target species in several of these sites and, more recently, to proclamation of the first herpetological reserve in Croatia (requested via local initiative), and the first management plan of a reptile species in Croatia.

To successfully manage the Balkan Stipe-necked Terrapin population and resolve the species conservation status in Croatia (Unfavorable – bad) the most common direct ties of the Association Hyla (NGO) naturally aggregated to form a task force and provide a jump-start to the formalized specie's action plan. First step was applying an ambitious 4-year project for funding through LIFE program.

LIFE for *Mauremys* proposed that the Zagreb ZOO transfers their knowledge to secure the turtle nesting sites from predators in situ and also conducts an assisted breeding programme for population reinforcement for the locality where the terrapins are on the brink of extinction. University of Zagreb Faculty of agriculture is providing genetic and breeding expertise for the breeding programme and additional experts dealing with fishing by-catch mortality, invasive alien species, and invasive agricultural practices through collaboration with landowners and The Public Institution for the Management of Protected Natural Areas of Dubrovnik-Neretva County across four Natura 2000 sites. Next to engaging the local community and creating a volunteer program, this institution is collaborating with Hrvatske vode, national authority for water management, in improving Mediterranean wetland habitats quality in short and long –term and with Association Hyla to provide connectivity between the four populations of terrapins.

In conclusion, this showcase for collaboration in nature protection emphasizes the role of the NGOs who enable integration of enthusiasm and youth with the power of diverse stakeholders and authorities across different sectors. Although the best ideas need maturation time and general conditions to be met to give rise to action and change, international collaboration can shorten this time interval.

Expected outcomes for participants

Enthusiasm is the key ingredient for long term sustainability, thorough solution requires different sectors, in nature protection in all levels involving local community is as important as monitoring endangered populations.

The example of multisectoral cooperation in protection of endangered species (*Proteus anguinus*) in Croatia

Maja Lukač¹, Ivan Cizelj², Dušan Jelić³, Susanne Holtze⁴, Thomas B. Hildebrandt⁴

¹Faculty of Veterinary Medicine, University of Zagreb, Croatia. ²Zagreb Zoo, Croatia.

³Croatian Institute for Biodiversity, Croatia. ⁴Leibniz Institute for Zoo and Wildlife Research, Germany.

Abstract

In a present world, the existence of many animal species are influenced by human impacts, correlated with globalization and spreading of urban areas as well as environmental and climate changes due to excessive pollution. There are many human mediated drivers able to push the species to extinction, particularly the one very sensitive to environmental changes, such as amphibians. Due to their specific anatomy and physiology, they are quite prone to climate change, pollution, habitat destruction, and devastating diseases. Owing all of these features in mind, it is obvious that protection of these animals should be based on multisector cooperation, including specialists with different expertise (biologists, veterinarians, zoologists and field workers), in order to incorporate all important factors in protection related to the animals, their environment and diseases.

As basis for this multisectoral approach, in 2012, we established PROTEUS project (“*Proteus anguinus* in Croatia – conservation research project”) and till present it remains the main driving factor. The project was briefly divided to field research carried on by biologists and speleodivers, and ex situ research carried on by zoologists, veterinarians, and biologists. The aim was to get as much as possible information from all aspects of olm’s elusive life, and here we will present our results gathered from different scientific fields regarding ecology, biology, diseases, and husbandry of this endangered amphibian species.

Expected outcomes for participants

New ideas, umbrella species.

Conservation work and activities of Beli Visitor Centre and Rescue Centre for Griffon vultures in Croatia

Marko Modrić, Elvis Vuleta, Tomislav Anić

Priroda Public Institution, Croatia.

Abstract

At the beginning of the 20th century, griffon vultures were widespread all over Croatia. Today, this species counts around 120 pairs and remains present only on the Kvarner islands of Cres, Krk, Prvić and Plavnik. Croatian griffon vulture population is unique in the world because these birds nest on the sea cliffs just above the sea level, while in other European regions they nest mostly in mountain areas. Priroda Public Institution manages Beli Visitor Centre and Rescue Centre for Griffon Vultures located on the Island of Cres, where majority of griffon vulture population exist. Beli Rescue Centre plays an important role in the conservation and care for this strictly protected species in Croatia and the need for a rescue centre is great, because every year on average ten griffon vultures get hurt and are brought to the Rescue Centre. These are mostly juvenile and inexperienced birds which fall out of their nests into the sea beneath the cliffs during their first flights in the summer months. After recovery in the Centre, the birds are released back into the wild. Every rescued and successfully recovered vulture is a significant effort in the endeavour to preserve griffon vultures in Croatia in the future. Before being released, the birds are ringed or tagged with a GPS transmitter, which helps to keep track of them in the wild. Beside rescue and recovery activities, Priroda Public Institution also runs a feeding site for griffon vultures in order to increase the number of breeding pairs in Croatia and their breeding success as well.

Expected outcomes for participants

Gain insight into griffon vulture status in Croatia., Describe the griffon vulture conservation work done in Croatia., Define the conservation role of Beli Rescue Centre for Griffon Vultures., Connect the conservation work carried out and possible cooperation options.

Collaboration on ex-situ methodology development for in situ monitoring of Balkan snow vole

Dijana Beneta¹, Duje Lisičić²

¹Zoological Garden of Zagreb, Croatia. ²Faculty of Science, Croatia.

Abstract

Balkan Snow Vole is endemic and relict species specific for the karst area of the Dinaric Alps. Due to poor knowledge of biology of this species, unknown population density as well as indirect competition with European Snow Vole and human intrusion which additionally isolate their population, it is described as VU (IUCN Red list) and DD (Red Book of Mammals of Croatia).

Because of the concealment of its habitat and neophobic species biology, the study of the Balkan Snow Vole in nature is very challenging. Zagreb Zoo in cooperation with several partners conducted ex situ research, development and evaluation of different observation methods of BSV applicable for in situ observation and research. Given that this is a rare mammal whose population status is not well known, the contribution of these research will be of great importance.

Expected outcomes for participants

Design and conduct an ex-situ methodology assessment applicable for in situ species monitoring research, Understanding the importance of collaboration between zoos and various partners on research project.

Developing an institutional conservation strategy

Merel Zimmermann, Tomasz Rusek, Alice Albertini

EAZA Executive Office, The Netherlands.



Merel Zimmermann



Tomasz Rusek



Alice Albertini

A conservation strategy for a zoo or aquarium should outline how the institution aims to create a positive impact on the conservation of biodiversity. How do you start developing one? When exploring our Membership's needs for support, one of the biggest wishes has been to receive guidance in developing a conservation strategy. The EAZA Membership and its partners form a network where knowledge and experiences can be shared. During this workshop you will have a chance to identify and discuss the main challenges encountered when developing a strategy and find out about the best solutions and approaches.

Outcomes of this workshop will be included in the conservation strategy toolkit which will provide guidance to EAZA Members as part of the EAZA 21+ Campaign.

Duration: 2 hours and 15 minutes

Large Carnivores in the Dinarides: Management, monitoring, threats and conflicts establishing a transnational exchange platform for the management of large carnivores in the Dinaric region – Background Report

Katrina Marsden¹, Andrea Solić², Đuro Huber², Christiane Röttger¹, Iven Froese¹, Julia Schmidt¹

¹Adelphi research gemeinnützige GmbH, Germany. ²Carnivora Magna, Croatia.

Abstract

The Dinaric region in the Western Balkans is one of the most biologically diverse regions in Europe. It is also home to the three large carnivore species: bear, wolf and lynx (Balkan and Eurasian lynx), shared between EU and non-EU member states. Given the extensive ranges of these species, transnational coordination for their management is desirable to enable a long-term basis for their conservation. To date, only few transboundary initiatives on the project topic exist between the governments concerned. This background report assesses the situation regarding the current status of large carnivores, their management and monitoring, threats and conflicts in the Dinaric region: Albania, Bosnia and Herzegovina, Croatia, Kosovo*, Montenegro, North Macedonia, Serbia and Slovenia.

The Dinarides are a mountain range along the Adriatic Sea connected to the Pindos Mountains in the south-east of the Balkans. Thanks to their location at the dividing line between several biogeographical regions (Mediterranean, Alpine and Continental) and their characteristic ecological, climatic, and geomorphological conditions, they are one of the most biodiverse regions in Europe. It is home to the three species of large carnivores: brown bear (*Ursus arctos*), grey wolf (*Canis lupus*) and Eurasian lynx (*Lynx lynx*) including its rare subspecies (*Lynx lynx balcanicus*).

It gives an overview of the current situation regarding large carnivore management in each country and compares different countries' approaches, as well as previous evaluations. This should help to identify the main themes for the platform's work and the potential for joint approaches for large carnivore management in the Dinarides. Small discussion will be organised on progressing the collaboration among partners in the region, discuss collaboration agreement and needs of urgent conservation measures

Expected outcomes for participants

Status of large carnivores, their management and monitoring, threats and conflicts in the Dinaric region, understanding the need of regional and cross-sectoral collaboration, opportunity to support or join Dinaric LC Platform / initiative.

It begins with an abstract – showcasing ex- and in-situ conservation work at talks, seminars, workshops, and conferences

Carl Traeholt

Copenhagen Zoo

One of the best ways to showcase the ex-situ communities' strengths, experiences, skills and responsibilities in species conservation is by representing your work at different meetings, seminars, workshops and events, within EAZA, online and beyond! At large international events, there is tremendous competition for talk-time and often 70-80% of all submitted abstracts are rejected. Therefore, to have an abstract successfully accepted into a programme, it must be clear, succinct and communicate new knowledge. It is not only scientists and academicians that can and should prepare excellent abstracts, but every person who wishes to share exciting experiences, news and showcase inventions. During this workshop we will focus on the general minimum framework for a quality abstract and the importance of a clear, succinct cohesive and informative narrative. Examples will be provided to help you on your way!

Duration: 1.5 -2 hrs.

Maximum capacity: 20 participants.

The link between Andean bears & honey in Chaparri Ecological Reserve in Peru with Bioparc Zoo de Doué-la-Fontaine support

Tatiana Beuchat

Bioparc Zoo De Doue la Fontaine, France.

Abstract

Chaparri is the name of a sacred mountain in the north-western part of Peru. Located in the heart of the dry forest ecosystem, this mountain, and the forest it dominates are home to remarkable biodiversity with a high rate of endemism. Since 2001, Bioparc de Doué-La-Fontaine support Tu Tierra and the local community, they wanted to protect this forest and therefore created the first private ecological reserve named Ecological Reserve of Chaparri. It covers 34.412 hectares (80% of the land) and it is managed by Tu Tierra and the community through the local association Acoturch.

Shelter for 2 emblematic species, among others, Andean bear & Andean condor, it has the objective of preserving and enhancing its biodiversity as well as becoming a model of community management leading to development.

225 bird's species with 39 endemics of the Tumbès region, the white-winged Guan is one example of the reserve purpose. Estimated extinct before its rediscovery in 1977, the bird, previously classified as Critically Endangered from 1994 to 2018, it is now classified as Endangered. There are two distinct micro populations, one is in Chaparri. Decimated by the destruction of its habitat and hunting, it returned to Chaparri thanks to forest protection and a reintroduction program. Between 2002 and 2006, captive-bred individuals were successfully reintroduced to Chaparri. Since then thanks to the plantation of fruit trees, to installed drinking troughs, awareness campaigns, the number of individuals is gradually increasing, and the species is spreading to neighbouring areas. In fact, back in 2006 the population was about 28 individuals (i.e., 10% of the global population estimated at 280). Thirteen years later, in 2019 it was about 112 (i.e., 35% of the global population, which was estimated at 320).

In Lambayeque area, the massive destruction of the forest has reached such a level that it compromises the survival of the entire ecosystem. To end this and limit the impact of human activities, Bioparc, its fund and Chapparri offer a productive and

sustainable alternative for forest conservation with communities of Tocmoche and Chongoyape through the supply, equipment and training of their members in breeding wild stingless honeybees. We also want to extend the reserve to restore the ecological balance, help natives' species to come back and thrive in this area, enable the local communities to improve their way of living & raise awareness among them to help us out in this long-term project!

Expected outcomes for participants

Long term & daily support, Sustainable financial support, NGO / Program led by local actors, Meet the needs of ecosystems & people, promote a positive and lasting cohabitation, Go to the field & meet them, Communicate around these projects: colleagues, visitors, social networks, professional network.

SAVING SPECIES TOGETHER WITH YOU 2

Saving species together: How zoos are contributing to wild tiger and Amur leopard conservation through the initiative WildCats Conservation Alliance

Esther Conway

Zoological Society of London/WildCats Conservation Alliance, United Kingdom

Abstract

WildCats Conservation Alliance is a successful funding mechanism for zoos to contribute to tiger and Amur leopard conservation projects. Run by zoos for zoos, WildCats has developed long-term collaborations with international and national conservation projects across Asia. Proposals comply with WildCats requirements for obtainable outcomes and measurable objectives. All proposals are peer-reviewed by external experts to promote best practice. They contribute to country-specific action plans and work with local and national governments.

This presentation shows that whilst big cat conservation is a costly undertaking for most zoos to make, the pooling of zoo contributions, large and small, is a positive win-win for both field conservation and zoos.

Zoo contributions of 3.5 million euros to WildCats have contributed to success in tiger and Amur leopard conservation. Examples include the long-term monitoring of Amur leopards and tigers in the Russian Far East and northeast China that show a steady upward trend in the study area.

In Indonesia, a successful reactive intelligence-led patrol strategy that increases snare detection by up to 40% is protecting an important source population of Sumatran tigers in Kerinci Seblat National Park. With Nepal's tiger population on the increase, conservation needs to manage and mitigate Human Wildlife Conflict (HWC). WildCats focuses on HWC in Parsa National Park, providing funding for 650 people to attend targeted HWC workshops. Results are showing that 40% of local people are positive towards tiger conservation initiatives.

This presentation showcases the support WildCats gives zoos to inspire, engage and educate visitors and inform staff. The current Year of the Tiger (YoT) is a prime example of this approach as WildCats informs zoos about YoT and its importance to tiger conservation. These will include online talks, podcasts, and interviews.

The WildCats model makes a great deal of sense for species conservation and could be used for other taxa, especially those for which alternative funding sources are difficult to find. Crucially this requires long-term financial backing for administration and operational costs and dedicated staff time.

Expected outcomes for participants

All zoos small or large can contribute to wild tiger and amur leopard conservation and don't need their own project to do so., Collaborations can be done in many different ways with different levels of involvement., Year of the Tiger gives zoos an ideal figure head to talk about wider issues.

SAVING SPECIES TOGETHER WITH YOU 2

“Together We Protect” – because, in Conservation, collectively, we can, we should, and we must

Élio Vicente, João Neves

Zoomarine, Portugal.

Abstract

Conservation has different strategies and distinct timelines. However, as progressive zoos discovered very early on, engaging our visitors and other stakeholders, either in situ or ex situ, is of paramount importance to such important and, frequently, urgent, and trans-border efforts.



Élio Vicente

With that in mind, and taking advantage of Zoomarine's history, regular media-presence, and 30 years-long prestigious environmental engagement, our team launched and runs a citizen-based conservation strategy with four axis [Land, Ocean, People, Animals], aiming at 'harnessing' the willingness and direct help of anonymous participants of all ages, in strategic dynamics aiming at improving habitats, increase environmental awareness, and incentive ever-growing pro-activity towards Nature's Conservation.

“Operação Montanha Verde” (‘Green Mountain Operation’) and “Operação Praia Limpa” (‘Clean Beach Operation’) are two examples of multi-level successes. The name ‘Operation’ tries to induce a logical sense of global cooperation, structure and reliable and applicable scale. ‘Green Mountain Operation’ began in 2016 and, since then, through Zoomarine, already offered 84'400+ saplings and trees (of 80+ species), of which 67'350+ were planted with the direct help/presence of 7'000+ volunteers. ‘Clean Beach Operation’ began in 2017 and, since then, already removed several tones of human-produced trash from 10 local beaches and sea floors (average 2,5 kilometers, each), with the direct help/presence of 670+ volunteers. All operations run on the underlying principle of ‘BioBlitz’: very fast, very effective, concentrated on just 2-3 hours/year. In the future, FALANGES (aiming at saving three endangered species of Portuguese endemic freshwater fish) should be included in this strategy, as well as “Operação Arca Viva” (‘Living Arch Operation’) and “Operação Sangue Azul” (‘Blue Blood Operation’).

Our experience shows that Conservation, as a global strategy, while engaging as much complementary stakeholders as possible, can be a huge challenge – but it can also be a tremendous success and a force for behavioral change. This multi-axis project is proof that, Together, we do protect.

Expected outcomes for participants

Power of Cooperation between complementary stakeholders, The power of Citizen engagement, The ex situ efficiency of progressive zoos.

SAVING SPECIES TOGETHER WITH YOU 2

Using ex situ expertise for in situ conservation of critically endangered Wild camel

Jaroslav Šimek¹, Miroslav Bobek¹, Adiya Yadamsuren², Jen Quayle^{3,4}, Bridget Johnson³

¹Prague Zoo, Czech Republic. ²Wild Camel Protection Foundation, Mongolia.

³Knowsley Safari, United Kingdom. ⁴Rose Cottage Veterinary Centre, United Kingdom



Jaroslav Šimek



Miroslav Bobek



Adiya Yadamsuren



Jen Quayle



Bridget Johnson

Abstract

The Critically Endangered wild camel (*Camelus ferus*) is completely genetically distinct from the domestic camel species, the Bactrian camel (*Camelus bactrianus*) and the dromedary camel (*Camelus dromedarius*). It is thought to be restricted to four subpopulations in the Gobi Desert across China and Mongolia, with a total population estimate of <1000, although work is ongoing to ascertain a more accurate estimate. Key threats to the species include degradation of habitat as a result of

grazing and illegal mining, hybridisation with domestic Bactrian camels and increased desertification due to climate change. A unique breeding centre is situated on the outskirts of the wild camel's Mongolian stronghold, the Great Gobi SPA 'A'. There are no wild camels living outside range countries.

Efforts to conserve the wild camel are a joint endeavour between a number of institutions including Knowsley Safari and Prague Zoo, all of whom are co-ordinated by the Wild Camel Protection Foundation (WCPF), who also operate the breeding centre. Collaboration between multiple organisations is the only way it is possible to have conservation impact for the benefit of the wild camel. Both Knowsley Safari and Prague Zoo signed Memorandum of Understandings with WCPF in 2018 to formalise their support, ensuring they would be able to share their expertise and contribute to wild camel conservation for years to come. WCPF Mongolia, ZSL, University of Kent and Vetmeduni Vienna are among the other key players.

Extensive work and various activities were supported by both zoos to date. A studbook has been created for the wild camels held at the breeding centre, which alongside the tagging of calves and production of identification guides for individuals is aiming for better population management. Veterinary support is safeguarding the health of the population. Re-development of husbandry routines and existing infrastructure at the breeding centre e.g. provision of hay racks and improved fencing has led to a safer and more functional environment for keepers and camels. A second breeding centre at an alternate location has been designed and funded to allow for greater flexibility in management of the captive wild camels and to reduce the risks associated with a single captive population. Support is also given to monitoring of the wild population via extensive camera trap study, providing the relevant local authorities with new equipment to increase the efficiency of their work and providing for veterinary training in-country staff to ensure the long-term success of the project.

Expected outcomes for participants

An understanding of how zoos can work together to make meaningful conservation impact, Improved knowledge of the conservation status of the Critically Endangered wild camel.

SAVING SPECIES TOGETHER WITH YOU 2

Oriental tree frog (*Hyla orientalis*) in Latvia: success of Riga Zoo's reintroduction project

Alessandro Di Marzio¹, Elza Birbele², Gunita Deksnė^{2,3}, Elina Gulbe¹

¹Riga National Zoo (Riga Zoo), Meza prospekts 1, 1014, Riga, Latvia. ²Faculty of Biology, University of Latvia, Jelgavas iela 1, 1004, Riga, Latvia. ³Institute of Food Safety, Animal Health and Environment "BIOR", Latvia.



**Alessandro
Di Marzio**

Abstract

The Oriental tree frog (*Hyla orientalis*) (Bedriaga, 1890) reintroduction project in Latvia represents a significant achievement of the Riga Zoo in the conservation of native fauna. The extinct Oriental tree frog species was included in a captive breeding program (breeders obtained from Belarus) in the late 1990s and was reintroduced in two localities in Latvia, where overall 5800 froglets were released. Thirty years after reintroduction, Riga Zoo continues to monitor recolonized species former territory. In 2019-2021 we carried out an extensive monitoring, using the technique of auditory transects with 607 listening points. As a result, we were able to define the new distribution limits of the species, which currently occupies an area of 7000 km², representing the northern limit of distribution of the species. Due to the geographical isolation of the population (the nearest population is 200 km away) we have started an ongoing study to evaluate the inbreeding of the Latvian Oriental tree frog population. The first step of the project was to determine the species of tree frog present in Latvia. Most of the tree frog populations in Europe were included in the *Hyla arborea* species complex and only recent research has shown the presence of several species, including *Hyla orientalis*. For this reason, although we now know that the species present in Belarus is *Hyla orientalis*, the original project was about the reintroduction of *Hyla arborea* in Latvia and the species of the breeders was not verified. We sampled 46 frogs (32 males, 9 females, 5 juveniles) at 14 locations. The preliminary data provide, for the first time, the evidence that the *Hyla* population presents in Latvia is *Hyla orientalis*, studying gene mitochondrial cytochrome oxidase subunit I COI. Although this is an expected result, this is an important data for our project. The next step of our study foresees the analysis of the inbreeding level of the wild population, evaluating the possibility of releasing new animals of the same species with fresh genetics. The closest wild populations of *Hyla orientalis* to Latvia

(excluding Belarus) are located on the border between Lithuania and Poland, where *Hyla arborea* has also been detected. Knowing the species present in Latvia will prevent the introduction of animals of another species, ensuring the long-term success of the successful reintroduction projects of this species in Latvia.

Expected outcomes for participants

In-situ/ex-situ conservation, multidisciplinary research.

SAVING SPECIES TOGETHER WITH YOU 2

Reintroduction program and conservation efforts of the endangered Persian fallow deer in the Judean mountains

Nadav Ganot, Nili Avni-Magen, Yishai Weissman, Shahar Kara

The Tisch Family Zoological Gardens, Israel

Abstract

The Persian fallow deer (*Dama mesopotamica*), once common throughout the Levant, was brought to extinction in the early 20th century. After the discovery of a small population in Iran during the 1950s, and the formation of a breeding program in Israel in the early 1980s, the Persian fallow deer was reintroduced to forests in the Western Galilee and the Judean Mountains.

Since 2005, the Jerusalem Biblical Zoo (JBZ) in cooperation with the Israeli Nature and Parks Authority (INPA), has been managing a reintroduction program in the Judean Mountains which benefits from the expertise of both organizations.

Until recently, the reintroduced deer population was monitored infrequently, with surveys relying mostly on field observations and radio telemetry. Lacking sufficient information regarding the population status has led the JBZ to invest in both manpower and technologies, which saw increasing monitoring and survey efforts in the past four years. Using advanced GPS tracking devices, trail cameras, and citizen science, surveys are now conducted annually on a monthly basis. The project received a three-year financial support from Fondation Segré, which allowed the recruitment of a project coordinator and acquisitions of important data-collecting technologies such as GPS tracking devices and trail cameras.

Trail camera surveys, conducted between 2018-2021, show an annual increase in fallow deer photo events since 2018 of adults, yearlings, and fawns. In addition, the surveys allowed for positive identification in the field of 65% of the deer reintroduced since 2010 (n = 103). Population size is currently estimated to average 110 ± 10 individuals, and Population Viability Analysis (PVA) predicts long-term survivability of the reintroduced population, reaching 144 ± 50 individuals in the future, under several different scenarios.

Spatial analyses indicate that most of the fallow deer population inhabits the eastern part of the Soreq nature reserve. Movement data and home range calculations show

similar trends – reintroduced deer establish their home range approximately 3 to 4 km in diameter from the release site.

The close relationship between the JBZ and the INPA has proven to be an important element not only in the reintroduction program of the endangered Persian fallow deer but also in other conservation programs led by the zoo (i.e., Griffon vultures and Diving ducks). The success of the ongoing long-term reintroduction of the Persian fallow deer, emphasizes the importance and benefits of a joint effort between zoos and nature authorities to wildlife conservation

Expected outcomes for participants

Zoo and nature authorities' cooperation, Endangered species reintroduction program management, Reintroduction program successes and challenges.

SAVING SPECIES TOGETHER WITH YOU 2

West African Primate Conservation Action – the One Plan Approach to primate conservation

Andrea Dempsey

Heidelberg Zoo, Germany. Paradise Wildlife Park, United Kingdom

Abstract

West African Primate Conservation Action (WAPCA) is a non-government organisation working in Ghana and Cote d'Ivoire. Spearheaded by Heidelberg Zoo, with a membership of 18 EAZA members, WAPCA defines its mission to safeguard the future of endangered primates and their habitat in West Africa through a sustainable One Plan Approach to species conservation: the development of management strategies, and conservation actions by all responsible parties for all populations of a species, whether inside or outside their natural range.

According to Conservation Planning, Specialist Group species conservation planning traditionally followed two parallel but separate tracks. Field biologists, wildlife managers, and conservationists monitor wild populations, developing conservation strategies and actions to conserve threatened species. Meanwhile, the zoo and aquarium community develop long-term goals for sustaining ex situ populations. WAPCA has cemented these two entities together in their action through EEP participation, field conservation, research, and education, bringing communities, local government, zoos, other NGOs as well as the public/private sector into the approach.

WAPCA has committed to this through its four pillars – discover, protect, reinforce, and connect. To protect wild populations and their habitats through holistic conservation action, empowering communities to sustainably manage and protect natural resources. Maintain a genetically healthy reserve population as part of the EAZA Ex situ Programme. Undertake collaborative and cohesive research to better understand the primate landscape and identify conservation actions required across it, to evaluate conservation actions currently in place and to provide the highest level of welfare to our reserve populations. To engage, inspire and empower all generations to better care for the planet that we live on, that we share not own. To investigate conservation translocation as a viable conservation tool for West African primates.

Through the OPA, WAPCA demonstrates the important role zoos play in conservation beyond financial aid, but through multiple incarnations from keeper support, genetic management, research, advice, and support.

Promoting the OPA could not be timelier as we all need to acknowledge our collective responsibility to take action to preserve biodiversity, compounded by the constant easy criticism of zoos and speculation of how much zoos really do for conservation. Without any doubt, were it not for zoos, Ghanaian primate species would be closer to extinction, and local people be living in poverty, left without options, having to unsustainably extract their natural resources in order to survive

Expected outcomes for participants

Zoos of any size can support in-situ conservation beyond financial aid, Participants can gain knowledge on how to apply due diligence to the conservation projects they support, Participants can learn the importance of sustainability and innovative ways that can be achieved, Participants will learn how important progressive zoos are to conservation, Participants will gain knowledge on the importance of benefit sharing mechanisms and local empowerment, Participants will take away skills to avoid historical colonial actions., Participants will be inspired to support smaller NGOs and fund operational costs as well as the sexy stuff.

FROM THE FIELD

Red colobus conservation initiative and collaboration possibilities

Florence Aghomo

Red Colobus Conservation Network (RCCN), Cameroon

Abstract

There are 18 taxa of red colobus monkeys (*Piliocolobus spp.*) across the forested belt of Africa. All are threatened with extinction and 12 are either Endangered or Critically Endangered. Red colobus is the ideal flagship primate species group for Africa because:

- the genus *Piliocolobus* is the most threatened primate genus in Africa receiving insufficient conservation attention.
- their distribution covers over 85% of Africa's primate species.
- each forested bioregion of Africa is represented by its endemic red colobus;
- they are the preverbal canary in the coalmine, being the first large mammal to be extirpated from an area due to hunting as they are slow, large-bodied and conspicuous; therefore, can be monitored to serve as an early warning indicator, and;
- they are a 'Cinderella species' i.e. are physically attractive to humans yet not promoted as a flagship species.

For these reasons, the African Primatological Society (APS) and IUCN SSC Primate Specialist Group have prioritized their energy to launch a global effort to catalyse conservation for the genus. More than 100 experts representing 20 different countries have collaboratively published a Red Colobus Conservation Action Plan (ReCAP) - the first such document developed for any group of African monkeys. The plan details myriad actions needed to improve their conservation status before 2026 and raise these monkeys to a flagship. Implementation of the newly published ReCAP remains challenging and continuous coordination and management of actions is critical. A red colobus conservation network is overseeing the implementation of this plan. This network is group of members/partners such as: Red colobus conservationists/experts/researchers, Wildlife conservationists working in red colobus sites, Education and awareness experts, government institutions, NGOs, foundations... We are presently looking for Old world primate husbandry and ex-situ conservation experts willing to join our initiative because having all stakeholder groups is crucial to increase and enrich the RCCN with members/partners who will be working around specific thematic to improve the range-wide efforts, consolidate the

impact of conservation actors, monitor these species, fundraise or finance for species activities at site level, taxon-level and range-wide level. The EAZA Conservation Forum is an opportunity to raise awareness on these special species, on the newly published Red colobus Conservation Action Plan (ReCAP) and getting new RCCN members/partners willing to contribute technically and financially to achieve the vision of raising the red colobus to a flagship species by improved range-wide conservation status of all red colobus taxa.

Expected outcomes for participants

Participants will learn more about red colobus monkeys and the Red colobus Conservation Action Plan (ReCAP), Participants will get more information on collaboration possibilities with the Red Colobus Conservation Network (RCCN).

FROM THE FIELD

Conservation opportunities in an oil palm plantation

Muhammad Silmi¹, Ali Amran¹, Mahfud Huda¹, Aldino Fauzil¹, Muhammad Ikhsan¹, Fila Istina¹, Ventie Angela¹, Prima Anggara², Carl Traeholt³

¹United Plantations Berhad / PT Surya Sawit Sejati, Kalimantan Tengah, Indonesia. ²Orangutan Foundation International, Pangkalan Bun, Kalimantan Tengah, Indonesia. ³Copenhagen Zoo, Research and Conservation Division, Copenhagen, Denmark



Muhammad Silmi

Abstract

Oil palm plantation expansion has accelerated habitat loss and contributed to pushing many species to the edge of extinction. To minimize the environmental impact of plantation development, United Plantations Bhd, with support from Copenhagen Zoo, began using its oil palm plantation as “research laboratories” for: a) biological pest management, b) trophic studies in a “simplified” ecosystem and c) species adaptation in a changing landscape.

The work started in Kalimantan, Indonesian Borneo, in 2011, where 125 native trees species were collected, propagated, and out planted for forest rehabilitation. This area has since been monitored in relation to species regeneration and to date, we have documented a positive increase from 13 to 35 species of understory birds that use the rehabilitation area. Since 2014, a total of 12 king cobras, 11 individuals of Sumatran cobras, 2 individuals of Blood Pythons and 11 individuals Leopard cats have been captured and fitted with radio transmitters to understand their habitat use and potential use as natural pest controllers of rats in an oil palm plantation. This work has been complemented by setting up 272 camera trap station points accounting for more than 37.000 trap days to date. The camera trap data also revealed orangutans live in the area and since 2012 have given birth to an average one baby every year in the company’s conservation areas. Finally, ecological censuses have been undertaken regularly in the conservation areas since 2012, recording 492 vertebrate species in the plantation landscape to date. The results presented here are important to better understand biodiversity management challenges in a changing landscape and demonstrates how conservation bodies and the private landowners can work together to create more environmentally friendly palm oil production and species management. Beyond United Plantations Bhd’s properties, there is potential for

exploring active meta population management of, particularly orangutan, together with several other companies as well as the local conservation authorities.

Expected outcomes for participants

Conservation biodiversity in plantation landscape, Conservation in private landowners.

FROM THE FIELD

Imported deforestation and sustainable agriculture in Europe

Catherine Barton

Chester Zoo, United Kingdom

Abstract

There is not one action alone which can help to solve the deforestation and forest risk commodity challenge. A combination of work on the ground with smallholders and large multi-national stakeholders, government policy (in both producer and consumer countries) and stronger certification schemes are needed jointly. Government policy changes took a major step forward in 2021 in Europe, with consumer and producer countries stepping up on forest risk commodities. Join this workshop for a discussion on current activities and help to brainstorm next steps for EAZA.

Expected outcomes for participants

Understand the current forest risk commodity situation in Europe, Understand the work of the EAZA working group and how to input/engage, Share knowledge on individual country Government policies on forest risk commodities.

FROM THE FIELD

Savannah in peril: Baluran National Park is fighting to survive

Hariyawan Agung Wahyudi¹, Carl Traeholt²,
Sutadi Sutadi³, Mochammad Iqbal³

¹Copenhagen Zoo, Indonesia. ²Copenhagen Zoo, Denmark. ³Baluran National Park, Indonesia.

Abstract

Few are aware that Indonesia contains SE Asia's most extensive savannah landscapes. Unfortunately, Indonesia's savannahs are yet to be thoroughly mapped and are often considered merely "grassland" suitable for agriculture and/or livestock grazing. To date, Indonesia has no specific legal framework or guideline aimed at protecting and managing this unique habitat type. Baluran National Park (BNP), is Indonesia's only national park that is gazetted primarily for its savannah. Despite its small size (25,000 ha), large herds of Javan deer, water buffalo and banteng graze Baluran's savannahs and share the park with more than 200 species of birds. Park's main predators are critically endangered Javan leopard and Javan dhole. BNP constitutes one of Indonesia's most unique national parks and a window to Pleistocene's vast "Sundaland"; yet, it is fighting to survive. In the 1960s, *Acacia nilotica*, was introduced as fire breaks, but without any natural predators, this species spread to all of the park's approx. 12,000 ha of savannah. Dramatic ecological take-over caused a drastic change to tropic wildlife cascades. Since 2012, Copenhagen Zoo has collaborated with the Government of Indonesia to restore and maintain ecological balance and develop wildlife-based tourism in BNP. This collaboration included restoration of savannah landscapes by eradicating invasive *A. nilotica*, followed by intensive suppression of acacia re-growth in the following years. Once acacia has been removed, native grass species is being planted, as well as to promote the recovering of ungulate populations and other endangered species. This collaboration has produced in a number of promising results. More than 300 hectares of *A. nilotica* have been eradicated, annual systematic camera trap surveys and monitoring using 200 cameras have been undertaken and are ongoing. It has provided management with first-hand evidence of population density of endangered species such as banteng, leopard, dhole, and other species. A joint team from BNP and Zoo became the first ever to sedate and radio-collar wild Javan banteng and Javan leopard. These studies are currently active and continue to monitor dispersal, food and feeding behaviour as well as risk of disease transfer with a large number of



**Hariyawan Agung
Wahyudi**

domestic cattle entering the park daily. Most constitute merely a beginning towards ensuring BNP's magnificent habitat and species diversity continue to persist in long-term future. Strong commitment from both parties to continue the collaboration is needed to achieve the vision of BNP: to restore BNP to pre-60-s ecological conditions

Expected outcomes for participants

Collaboration, Fieldworks, Wildlife of Java, Multi-approach.

Trenggiling Conservation Program - Protection of Sunda pangolin in Indonesia using various methods

Lucie Cizmarova¹, Stanislav Lhota², John Kartasima Gurusinga³

¹Olomouc Zoo, Czech Republic. ²Usti nad Labem Zoo, Czech Republic. ³PATRON Foundation, Indonesia.



Lucie Cizmarova



Stanislav Lhota



John Kartasima
Gurusinga

Abstract

Although all species of pangolins have been reclassified to CITES Appendix I, and therefore, international trade in pangolins or parts of their bodies is now prohibited, they are currently considered the most trafficked mammals in the world. It is estimated that over a million pangolins have been poached in the past 10 years. Indonesia plays an important role in the pangolin trade. According to the latest TRAFFIC report, 117 seizures took place in Indonesia between years 2015 and 2021, which ranks it fourth among Asian countries with the highest numbers of seizures. Therefore, Trenggiling Conservation Program aiming to protect pangolins has been established in North Sumatra, where trade in wildlife occurs in high numbers. The main purpose of the program is to reduce the rate of illegal trade in Sunda pangolins and thus protect wild populations of these critically endangered animals. To do it effectively, we focus on community engagement and raising awareness about pangolins. We have employed former poachers of slow lorises and pangolins so they would become conservationists. With their assistance, we conduct regular monitoring of wildlife in our field area. Several transects have been delimited to assess the abundance of nocturnal animals at a particular location. To make a confident status assessment of any Asian pangolin species is challenging because decades of targeted, sustained overexploitation have resulted in very low population densities. Nevertheless, after years of our educational activities and employing local

people (besides the employment of former poachers, we also produce conservation coffee with local farmers), we have significant data about an increase in population of nocturnal animals in that area as well as observations of Sunda pangolins during the night monitoring. Another method used to detect pangolins are camera traps, installed in locations with traces of pangolins foraging on trees or close to their sleeping places where the presence of pangolins is the most likely. In addition to detecting the presence of these animals, this method can also help to better understand their ecology and behaviour. Another important aspect of conservation is cooperation with government agencies on the enforcement of laws on pangolin protection. Because the approach to traffickers has to be different than to poachers, our team investigates trafficking in pangolins especially in the area of Sumatra, detects the routes of trade, and tracks online trafficking which is very common nowadays. All these methods help to decrease smuggling of these unique animals.

Expected outcomes for participants

The way to successfully cooperate on conservation with local people – make them become a part of conservation activities, Combination of methods in conservation, how to effectively protect some areas, Field activities to assess and measure the impact of conservation in chosen areas, Impact of community engagement on conservation.

A holistic approach in the protection of Bangkaru Treasure Island in Sumatra: the role of zoos in conservation and research

Adela Hemelikova^{1,2}, Tomas Ouhel^{1,3}, Pavel Zoubek¹

¹Liberec Zoo, Czech Republic. ²Czech University of Life Sciences, Czech Republic.

³Palacky University, Czech Republic



Adela Hemelikova



Tomas Ouhel



Pavel Zoubek

Abstract

Bangkaru Island (Pulau Bangkaru) is located 75 kilometres west of the Island of Sumatra. It is part of Aceh Province, the westernmost province of Indonesia. Bangkaru maintains 60 sq. km of uninhabited, intact primary old-growth rainforest and is one of the largest remaining primary-rainforest islands in Indonesia.

Thanks to its wilderness, Bangkaru Island is inhabited by many rare species. Bangkaru is one of Indonesia's most significant nesting sites of endangered green turtles (*Chelonia mydas*). Leatherback turtles (*Dermochelys coriacea*), whose Indian Ocean subpopulations are considered critically endangered, nest on the local beach during November-January. Hawksbill turtles (*Eretmochelys imbricata*) do not nest on Bangkaru's beach but inhabit local coral reefs. Sea turtles have become an umbrella species for Bangkaru's protection. Protecting sea turtles makes it possible to protect ecosystems and other species on the island, including primary rainforest, mangroves, and pristine coral reefs with a high diversity of coral and fish species. Several birds inhabit the rainforest, e.g., silvery pigeon (CR, *Columba argentina*), nias hill myna (CR, *Gracula robusta*), white-rumped shama (*Copsychus malabaricus*), oriental magpie-robin (*Copsychus saularis*), black-naped monarch (*Hypothymis azure*).

During the EAZA Silent Forest campaign (2017-2019), Bangkaru Island has become internationally known for its biodiversity. Since then, the bird species have been regularly monitored, and the nesting site on Bangkaru is partly protected. The turtle egg poaching currently does not present a severe threat. The cooperation of zoos and other partners significantly helped preserve Bangkaru's nature.

However, the project still faces many challenges that have to be tackled to increase the overall conservation effectiveness and management. A unique collaboration of zoos, NGOs, and universities is coming with a holistic approach for the protection of the island and proves that the end of the campaign does not mean the end of conservation efforts. Bangkaru's project starts incorporating research elements. The increased focus also involves the capacity-building of rangers, government stakeholders, and local communities. The holistic approach in protection through collaboration aims to open a new era on Bangkaru island, reveal missing yet important information on ecology and genetics, and shape ongoing conservation strategies. The presentation will show a practical example of how zoos play an important role in biodiversity conservation.

Expected outcomes for participants

Get acquainted with the potential and role of modern zoos in conservation and research, get ideas and inspiration for similar collaborations, Understanding the importance of research in conservation, Highlight a zoo's expertise and contributions in field conservation.

KARTA ZOO VRTA / ZOO MAP

A **EAZA ACADEMY**
Education centre
- Green Venue

R **ZOO RESTAURANT**
- EAZA Cons. Com.
meeting
- Icebreaker
- Zoo visit
refreshments

- VIVARIJ VIVARIUM
- IZLOŽBA "ZMIJE HRVATSKE" "SNAKES OF CROATIA" EXHIBITION
- MADAGASKAR MADAGASCAR
- AUSTRALIJA AUSTRALIA
- LABUDI OTOK SWAN ISLAND
- INFO KUĆICA INFO CENTRE
- BLAGAJNA / ULAZ CASH DESK / ENTRANCE
- SUVENIRNICA GIFT SHOP
- DJEČJE IGRALIŠTE CHILDREN'S PLAYGROUND
- ODMORIŠTE RESTING PLACE

- KINA SICHUAN CHINA SICHUAN
- LAVLJA STUJENA KIDEPO KIDEPO LION ROCK
- AFRIČKO SELO AFRICAN VILLAGE
- TRAPERSKA KOLIBA TRAPPER'S CABIN
- DONACIJA "ZLATIĆ" "ZLATIĆ" DONATION
- RESTORAN RESTAURANT
- PRVA POMOĆ FIRST AID
- EDUKACIJSKI CENTAR EDUCATION CENTRE
- WC TOILET
- KOLNI ULAZ CAR ENTRANCE

- TROPSKA KUĆA TROPICAL HOUSE
- ZONA SUMRAKA TWILIGHT ZONE
- DUH MONSUNSKIH ŠUMA SPIRIT OF MONSOON FORESTS
- KOŠNA AFRIKA RAINY AFRICA
- STAZA SAVJESTI CONSCIENCE PATH

- DJEČJI ZOO PETTING ZOO
- PAVILJON ZA MAJMUNE MONKEY HOUSE
- MIKRO SVIJET MAKSMIRSKE ŠUME - MIKRO ZOO MICRO WORLD OF MAKSMIR FOREST - MICRO ZOO
- VOLJERA ZA AFRIČKE PTICE FREE-FLIGHT AVIARY FOR AFRICAN BIRDS
- DOMAĆA HIŽA OLD HOUSE

IC INTERPRETACIJSKI CENTAR ZAŠTIĆENE FAUNE HRVATSKE INTERPRETATION CENTRE FOR PROTECTED CROATIAN FAUNA



EASTERN ENTRANCE
from street
Maksimirska cesta

MAIN ENTRANCE
trough park Maksimir

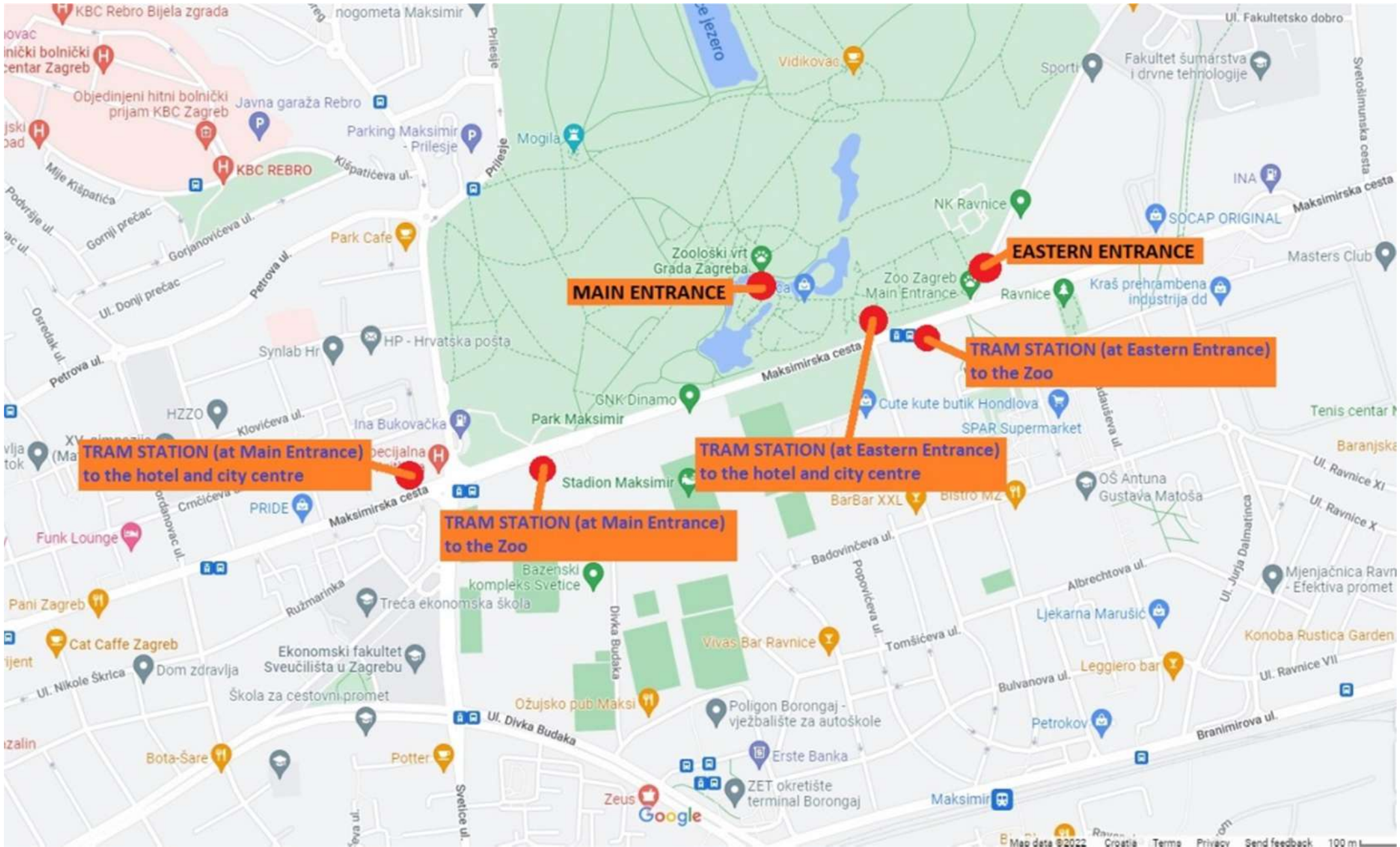
POVIJESNO VAŽNI OBJEKTI
HISTORICAL LOCATIONS

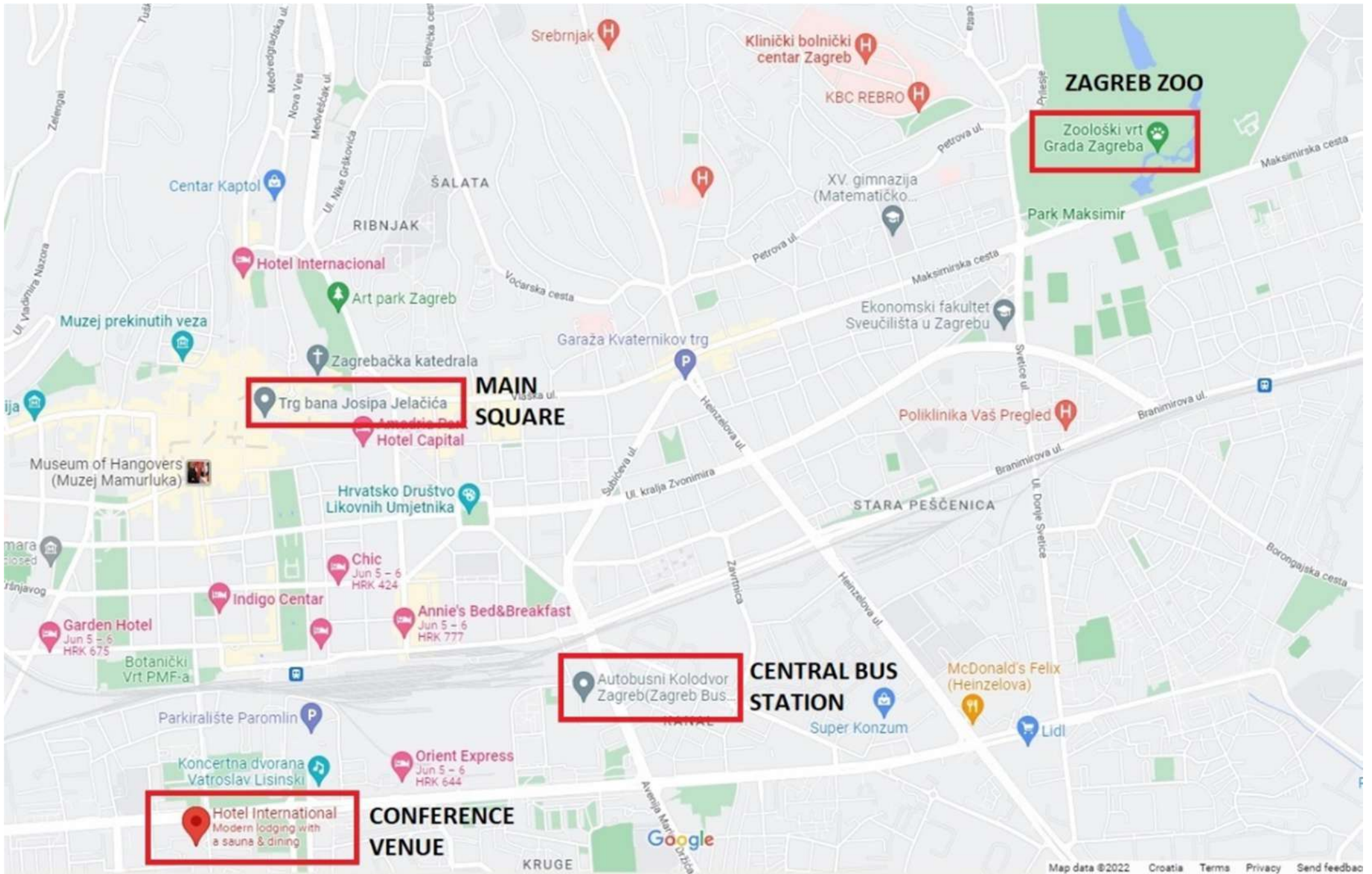
- 1** KULA TOWER
- 2** STUJENA ZA SUPOVE VULTURE'S CLIFF
- 3** OBJEKT U ARAPSKOM STILU ARABIAN STYLE OBJECT
- 4** EGIPĆANI (KIPAR JOZA TURKALJ) EGYPTIANS
- 5** LAVLJI MOST (KIPAR JOZA TURKALJ) LION'S BRIDGE
- 6** NAPULJSKI RIBAR (KIPAR JOSEPH KÄSCHMANN) NEAPOLITAN FISHERMAN
- 7** PAVILJON ZA MAJMUNE NEAPOLITAN FISHERMAN

NASTAMBE U KOJE SE MOŽE UČI
WALK IN ENCLOSURES

- 1** LEMURI LEMURS
- 2** VOLJERA ZA AFRIČKE PTICE AVIARY FOR AFRICAN BIRDS
- 3** DJEČJI ZOO PETTING ZOO

PREPORUČENI SMJER KRETANJA
RECOMMENDED DIRECTION





PRACTICAL INFORMATION

Registration

You will be able to register for EAZA Conservation Forum 2022:

- on **Tuesday 17 May at Icebreaker (Zagreb Zoo) 19.00 – 22.00**
- on **Wednesday 18 May at conference (Hotel International) 7.30 – 16.00**

In the case that you miss to register please contact anyone from Zagreb Zoo team at any time.

The venue

The Forum venue is at the [Hotel International](#) (Visiting address: Miramarska Cesta 24, 10000, Zagreb, Croatia). The pre-conference Academy course (separate registration), the Conservation Committee Meeting (invitation only) and the Icebreaker will take place at Zagreb Zoo. For details of these gatherings [please click here](#).

Zagreb Zoo

All Conservation Forum delegates are most welcome to visit Zagreb Zoo on any day before, during, and after the Forum. To enter the Zoo you just need to show your name badge. If you will visit the Zoo before registration, just mention at the entrance you are attending the EAZA Conservation Forum. On Thursday 19 May a visit to the zoo is part of the programme, at 15:00 we will meet in front of the conference venue.

Farewell dinner

On Friday, 20 May, 2022 the farewell dinner will be held at the Medvedgrad Castle, on the southern slope of Mount Medvednica with beautiful views on the City of Zagreb. Transport from Hotel International to Medvedgrad, as well as return will be organized. More information about the farewell dinner location [can be found here](#).

Travel

All the relevant information about travelling to Zagreb and within Zagreb has been condensed into an overview especially put together by the team of Zoo Zagreb. Information about travel between the venue and the zoo can also be found in the same document. [Click here to download the Zagreb travel document](#), or visit the [event website](#).

Covid measures

Travel requires all visitors to comply with current health and safety guidelines. Please ensure that you review the current travel measures, as well as guidelines in effect both nationally and regionally. [This site](#) contains information regarding the conditions of entry into the Republic of Croatia considering temporary bans, i.e. restrictions in place to prevent the spread of COVID-19. For more detailed information about the Corona virus situation in Croatia [please click here](#).

St. Mark's church, Zagreb

