



NEWS

Highlights from the
75th WAZA Annual
Conference

EAZA's Which Fish
Campaign

Global Impact of Elephant
Endotheliotropic
Herpesvirus



WAZA

*World Association
of Zoos and Aquariums*

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poison dart frog from Houston Zoo's
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WAZA Membership

WAZA members as of 7 December 2020

Affiliates	10
Associations	23
Corporates	20
Institutions	283

Future Events

- 2021:** Moscow Zoo, Moscow, Russia, 10-14 October
2022: Loro Parque, Tenerife, Spain
2023: San Diego Zoo Global, San Diego,
United States of America

President's Letter

Prof Theo B. Pagel

President of WAZA

Dear colleagues,

2020 has been an incredibly challenging year for all of us due to the COVID-19 pandemic. However, we remain optimistic, even though we have not yet overcome this crisis. WAZA strives to do the best we can to support you as our members, throughout this difficult year, and in the future.

In the end, it was not possible to meet in San Diego for the 75th WAZA Annual Conference as planned, but we were able to meet virtually for the first ever-online edition of the conference. I hope that the conference topics highlighted the importance of our zoo and aquarium community having a global voice – your WAZA.

We are happy that via the virtual annual conference we were able to welcome new people to the meeting, many of whom attended the WAZA conference for the first time. We will try to retain the virtual access element in the future, to ensure that the meeting is accessible for all our members, although we do hope to meet in person again in October 2021 in Moscow, Russia.

Additionally, I would like to mention our 2020 Award Winners. Congratulations once again to Georgia Aquarium, the recipient of the WAZA Conservation Award; Detroit Zoo, the recipient of the WAZA Environmental Sustainability Award, and finally to Prof Dr Jörg Junhold, Zoo Leipzig, Germany, for winning the Heini Hediger Award. All recipients are highly deserving of the awards, and as you know, all of the applicants were of a high calibre.

Following the success of what I believe was a very powerful conference, I would like to reiterate that we will continue to intensify our global cooperation efforts and to find new international partners to join forces in signing new Memorandums of Understanding (MoUs).

In this magazine, you will read, besides other interesting articles, about the two newly launched WAZA strategies on sustainability and conservation education. Thank you to the International Zoo Educators Association (IZE) for their work on the Conservation Education Strategy, and to everyone who was involved in preparing these two documents. They are both essential tools for all of us! Herewith WAZA has once again shown leadership and excellence.

In this edition, you can also read the impressive keynotes which were given at our conference by Elizabeth Mrema from the United Nations Convention on Biological Diversity (CBD), and Ivonne Higuero from the Convention on International Trade in Endangered Species of Wild



Fauna and Flora (CITES). Both talks underline very clearly how critical scientifically-run zoos and aquariums are for preserving wildlife/biodiversity.

I am pleased and proud that even under these difficult circumstances, such as reductions of staff and lack of income etc., we were still able to retain our high standards of animal husbandry. Ensuring positive animal welfare, enrichment and appropriate nutrition are essential aspects of our daily work. Our continued efforts to ensure that the animals we are entrusted with looking after receive the best possible care and that our various conservation projects are kept alive is a great compliment to all of you.

It is evident to me that that our collaborative efforts as members of WAZA will play an essential role in the post-2020 global biodiversity framework. Scientifically-run and organised zoological gardens and aquariums can make an impact in maintaining high animal welfare standards while also running conservation projects in the field. The roles of responsibly-managed zoos and aquariums are vital for biodiversity. This is the reason we are pushing the Reverse the Red movement so intensively. But we will also intensify, as mentioned above, cooperation with our global partners such as CITES, CBD, IUCN Conservation Planning Specialist Group (CPSG) and of course the IUCN Species Survival Commission (SSC), alongside others.

I wish you all a good end of the year and a much better year in 2021 than we have experienced in 2020. Stay safe!

Prof Theo B. Pagel

CEO's Letter

Martín Zordan

WAZA Chief Executive Officer

One of the most valuable professional conversations I have ever had was with a former WAZA President, Susan Hunt. She explained the use of the triangle perspective to deal with challenges. To move your triangle from point A to point B you need to have the right balance between each one of the three points of the triangle: resources, strategy and legitimacy (our much-appreciated social license which allows us to operate).

While reading Prof Theo Pagel's letter for this current issue, I thought of WAZA under the triangle approach and reflected upon how much the pandemic has changed the journey of our triangle toward a point where we have increased our conservation impact, and we have a renewed social recognition.

Despite being a year of significant loss, there have also been new lessons learnt. Difficult decisions had to be made, the lives of many colleagues and organisations have changed, and we have had to adapt to uncertainty. In that sense, our resources – the first point of the triangle – (knowledge, funds, and even motivations) have changed dramatically. Not only is the financial situation concerning, but there is also an increasing sense of responsibility and urgency after seeing how swiftly our world can change. As individual organisations, be reassured that support and guidance is available from your zoo and aquarium community – there is incredible value in collective knowledge.

Now, the second point in the triangle – Strategy. Conservation is one of the central tenets of WAZA. Reverse the Red, a global effort in partnership with the IUCN Species Survival Commission (SSC) and other leading conservation stakeholders to reverse the trend of species extinction, is steadily growing. And what is in it for zoos and aquariums? The opportunity to scale up our conservation work by helping governments to reach species conservation goals through the Assess, Plan, Act methodology. This year we ensured that the IUCN Presidential Candidates were familiar with and understood the intrinsic value of the Reverse the Red movement by inviting the three of them to share their contributions to reversing the trend in a series of virtual presentations.

Also essential for WAZA is the 2023 Animal Welfare goal. While the pandemic affected the capacity of many WAZA members national and regional efforts toward this goal, we remain committed to ensuring that by 2023 all WAZA national and regional associations will have an animal welfare evaluation process in place which contains specific elements approved by WAZA. We expect all WAZA institutional members to be compliant with this



process, and we are committed to exploring ways of supporting them to achieve this. A newly introduced element of our strategy is to keep our members connected during the pandemic by communicating with your national and regional zoos and aquariums associations who are in the right place to represent you on a national/regional level and provide access to potential resources that might be available.

And finally, legitimacy – the last triangle point. In terms of internal support, the 2019 WAZA Bylaws allowed us to increase the number of seats for under-represented regions on the WAZA Council, thereby giving voting rights to the elected regional associations' representatives in an effort to better position WAZA as a global representative. Through Reverse the Red, we are also aiming to increase our relevance and credibility in the eyes of key international conservation bodies (CITES, IUCN, CBD). Additionally, through the implementation of the 2023 Animal Welfare Goal we are cementing WAZA's legitimacy from the perspective of other sectors and broader society.

This year has seen a profound change in the world and we have had to adapt to be resilient but our commitment to move forward remains steadfast. Just like the biodiversity we are working together to protect, WAZA is a diverse community, and in that wide range of worlds, we can hatch global solutions.

I hope you enjoy this issue of our magazine and take a look at the journey we are on, enjoy the recaps of WAZA Conference highlights, and take a moment to celebrate five years since the launch of both the WAZA Animal Welfare and Conservation strategies.

A stylized handwritten signature in black ink, appearing to read 'M Zordan'.

Dr Martín Zordan



Sahil Merchant



Elizabeth Maruma Mrema



Highlights from the 75th WAZA Virtual Annual Conference



Ivonne Higuero

The 75th WAZA Annual Conference took place virtually from 12-15 October 2020 and welcomed over 700 people from 48 countries and regions around the world. While we were disappointed not to be able to meet you all in person this year, we were delighted to be able to welcome so many people to the virtual conference. We hope to ensure future conferences are as accessible for all of our members.

Over the four days of the conference, we heard from keynote speakers, Sahil Merchant, James Gomme, Elizabeth Maruma Mrema and Ivonne Higuero.

Sahil Merchant, a partner at the worldwide management consulting firm McKinsey & Company, was the opening keynote speaker on Monday 12 October. He gave an inspiring presentation on leading in a complex world and challenged people not to do more but to do things differently.

James Gomme, Director of Sustainable Development Goals from the World Business Council for Sustainable Development, discussed the importance of zoos and aquariums contributing to the Sustainable Development Goals (SDGs).

While, Elizabeth Maruma Mrema, Executive Secretary of the Convention on Biological Diversity (CBD) praised the valuable role of zoos and aquariums in conservation and conservation education, as well as how they have contributed to the goals of the CBD and

can help support the post-2020 global biodiversity framework. You can read more about her speech in this magazine.

Over the four days, we heard a variety of fantastic presentations and panel discussions on diverse topics. A global panel on COVID-19 saw panellists share their different approaches to overcoming and handling the crises presented by the pandemic in their respective countries, of India, Italy, Mexico, New Zealand, South Africa and the United States of America.

A panel on 'The Paths Towards Reducing Carbon Emissions in Zoos and Aquariums' examined decarbonisation, deforestation and reforestation, looking at examples from Wildlife Conservation Society (WCS), Helsinki Zoo and Taronga Zoo.

We heard the latest updates on Reverse the Red – a social movement to reverse the negative trends in species extinction, calling for strategic action and collaborative partnerships. Corina Newsome, from Georgia Audubon, gave a thought-provoking presentation on disrupting homogeneity and how zoos and aquariums can promote and achieve inclusion and equality.

Updates were shared on WAZA activities over the past 12 months, including progress towards the WAZA 2023 Animal Welfare Goal, the recently launched WAZA Animal-Visitor Interaction

Guidelines, Expedia's Animal Welfare Policy and WAZA's work with the International Air Transport Association (IATA). We also heard about progress on the WAZA sustainability commitments with the Forest Stewardship Council (FSC) and the Roundtable on Sustainable Palm Oil (RSPO), as well as more about the WAZA Short Guide on Single-Use Plastic.

Additionally, we launched two brand new global strategies which you can read more about in the following pages.

The conference came to an end on Thursday evening with the Annual General Meeting (AGM). WAZA President, Prof Theo Pagel, shared a detailed President's report on the past 12 months of WAZA, and members voted to approve the minutes of the 2019 WAZA Annual General Meeting, the 2019 finance report and the 2021 budget.

The conference recordings are all available to view. If you did not register for the conference but would like to view the recordings, please contact the WAZA Executive Office on conference@waza.com

The recordings are available for all WAZA members; registration fees will be charged for non-members.

We look forward to hopefully seeing you in 2021 for the 76th WAZA Annual Conference, hosted by Moscow Zoo in Russia.

Special thanks to A-BLOK for sponsoring the opening and closing videos for the WAZA Virtual Conference, as well as the interactive games



And finally, we would like to thank our generous conference sponsors, exhibitors and donors for helping make the conference possible.

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Photo: Clouded Leopard. © Jonathan Ross/Nashville Zoo.

Conservation, Awareness, and Knowledge: Zoos and Aquariums in Support of the Biodiversity Agenda



ELIZABETH MARUMA MREMA

Executive Secretary, Convention on Biological Diversity

This is an abridged version of Elizabeth Maruma Mrema's keynote address at the 75th WAZA Annual Conference.

Zoos and aquariums are important bridging institutions that connect several domains. Their work in support of *ex situ* conservation demonstrates their role as the proverbial “ark” from Biblical tales that provides shelter and protection for vulnerable populations that would otherwise suffer extinction. Your institutions are also an important part of the knowledge base of the species and genetic diversity of our world – providing opportunities to build taxonomic and species information that is shared across the regions. And, finally, zoos and aquariums represent the place where urban dwellers, otherwise alienated from nature and biodiversity, can meet the wondrous variety of life and learn in a very direct way. In this latter aspect, zoos and aquariums are also a central part of the economies of cities, tourism and entertainment, which has a significant monetary value. You are key partners in so many aspects of the agenda.

I want us to talk about our current conjuncture – the pandemic and the state of biodiversity, and the challenges and opportunities it provides to us. In so doing, I would touch upon the role that you all play in the protection of life on Earth through zoos and aquariums, and the ways in which we can work together to further conserve and enhance awareness and knowledge on the biodiversity agenda. I would also like us to think forward beyond 2020 – to the work of the decades ahead of us.

We stand here approaching the end of the year 2020... and we need to take stock of where we are now, after a decade of action in support of biodiversity.

Ten years ago, the Parties to the Convention on Biological Diversity gathered together in Nagoya and adopted the Strategic Plan for Biodiversity 2011-2020 and its 20 Aichi Biodiversity Targets. Since then, governments and actors around the world have taken significant action to address our present biodiversity crisis. Many of these actions have had meaningful impacts, and the world's biodiversity would be in much worse shape were it not for these efforts.

However, it has not been enough. The world has not achieved the Aichi Biodiversity Targets. According to the fifth edition of the Global Biodiversity Outlook, published last month, none of the 20 Targets have been fully achieved, though six Targets have been partially achieved.

Biodiversity is still declining at an unprecedented rate, and the pressures driving this decline are intensifying. This threatens the achievement of the Sustainable Development Goals, 14 of which depend on biodiversity contribution; it equally undermines efforts to address climate change mitigation and adaptation, as well as land degradation, and, thus, clearly threatens human well-being and the planet.

We all need to play our different roles and act, and ACT NOW. This call includes actions to be undertaken by zoos and aquariums. When I say this, I want to be clear that, to date, all of you and your institutions have already played a strong role.

For decades now, zoos and aquariums have played an important role in addressing *ex situ* conservation as per Article 9 of the Convention.

Zoos and aquariums contribute towards conservation of the components of biological diversity in countries of origin of those elements while also having collections outside those countries. In many cases, you are serving as the source of additional genetic diversity. This often helps to support and even make possible many reintroduction programmes all over the world. The Global Species Management Plans that you introduced at the beginning of the century represent an important way to coordinate important regional efforts organised around the world. These are part of the efforts that show that conservation works – when governments and other organisations collaborate.

The results from the recently published fifth edition of the Global Biodiversity Outlook demonstrate the value of working together, including with zoos and aquariums. Where conservation management policies have been put in place and enforced, extinctions have been prevented – the number of extinctions of birds and mammals would likely have been at least two to four times higher without conservation actions over the past decade.

Zoos and aquariums have also provided support in terms of resource mobilisation in support of conservation. Many zoos and aquariums that are members of WAZA have established foundations and charities which provide financial support for species and habitat conservation processes globally. We should further encourage both the Convention's national focal points and zoos and aquariums to collaborate to ensure that those efforts are well recognised and accounted for, including through national reporting under the Convention. Currently, national reports do not take these efforts into account.

It is also important to acknowledge the important role that zoos and aquariums play in raising awareness and connecting people with nature. I note with appreciation the excellent WAZA initiative 'Biodiversity is Us' developed in support of Aichi Target 1 and timed to support the United Nations Decade on Biodiversity

2011–2020. The campaign provided an important boost to raising awareness. We know this because of the important measurement of public awareness taken by WAZA before and after.

A global survey of visitors to zoos and aquariums, initiated by WAZA in association with Chester Zoo and the University of Warwick, provided an evaluation of the impact of visiting a zoo or an aquarium on biodiversity literacy. This study, perhaps the largest and most international study of zoo and aquarium visitors ever conducted, provided compelling evidence that visiting zoos and aquariums can have a positive and lasting impact on biodiversity literacy.

These initiatives and actions that you have already undertaken have made a difference. They reflect the feeling that we are now seeing around the world, including among Heads of State and Government, that there is a need to build on these successes.

In this grand project, [the 2050 Vision of the Strategic Plan for Biodiversity] there is a key role for you all to play, to engage and contribute tremendously to the future success we want. Zoos and aquariums cannot be left behind but should be ahead and contribute in several ways. You work at the nexus of conservation, knowledge development and public awareness. In all these ways, you have already contributed to the implementation of the Strategic Plan for Biodiversity. In all these modes, your contribution will be key to the implementation of the upcoming post-2020 global biodiversity framework.

As the Secretariat of the Convention on Biological Diversity, supporting and facilitating negotiations on an ambitious post-2020 global biodiversity framework, we expect active contributions from zoos and aquariums in its development and later active engagement in its implementation through an array of multiple streams far beyond immediate *ex situ* conservation measures.



Based on the current draft of the framework, I would like to briefly mention some key areas for specific contributions. I would start with specific examples and elements currently on the updated draft 2030 targets.

Mobilisation of sufficient resources essential

for implementing the post-2020 global biodiversity framework by generating additional financial and non-financial resources from various sources, including the private sector and general public. Zoos and aquariums may directly contribute to increase new, additional and effective financial resources to support ambitions of the targets of the framework.

Capacity development to support enabling evidence-based implementation as well as building capacities at the individual and organisational levels to facilitate implementation of the framework. The networks for global and regional collaboration created for species protection show the role that zoos and aquariums have in capacity development at the subnational, national and regional levels.

Knowledge generation, management and sharing

for effective biodiversity planning, policy development, decision-making, implementation and transparency and responsibility, including through promotion of biodiversity science and education, and organisational learning. Zoos and aquariums traditionally produce new quality scientific information and support multiple research activities. This information may continue to be available for decision makers and the public and may inform effective management of biodiversity both *ex situ* and *in situ*.

Technical and scientific cooperation, technology transfer and innovation:

As an example, the research programmes of zoos and aquariums may contribute to informing elements of spatial planning to address land/sea use change. This research can also inform us all on the existing intact and wilderness areas which may be a priority for conservation. This will be extremely important as we move to further develop an extensive system of global protected areas that is both representative and effective. We will need research and the information in zoo and aquaria collections for active management actions in the future. Only by tapping this information can we enable recovery and rehabilitation of threatened wild species of fauna and flora, including reintroduction into their natural habitats.

Partnerships with a variety of stakeholders to leverage activities and programmes at the local, national and regional levels, including through engagement of the private sector, academic institutions and the general public. As zoos and aquariums are usually located in cities, they have special opportunities to involve subnational governments, cities and other local authorities.

I also want to point out that, through their education and awareness programmes, zoos and aquariums may support actions to eliminate unsustainable consumption patterns and help people understand and appreciate the value of biodiversity. Education programmes of zoos and aquariums will contribute to the design and promotion of responsible choices commensurate with the 2050 biodiversity Vision of living in harmony with nature.

Let me speak about the importance of outreach, awareness and uptake of the post-2020 global biodiversity framework by all stakeholders. It is clear that this is essential to effective implementation of the framework. And this is a traditional area of strength for zoos and aquariums. We expect zoos and aquariums to further increase understanding, awareness and appreciation of the values of biodiversity, including the associated knowledge.

Zoos and aquariums can support the Secretariat of the Convention and our partners in promoting or developing platforms and partnerships, including with the media and civil society, to share information on successes, lessons learned and experiences in acting for biodiversity. I stress this because a growing body of evidence consistently demonstrates that, in addition to awareness, meaningful experiences and connection with nature are key to engendering stronger valuation, support and action for biodiversity conservation across generations, sectors, and societies.

Many human beings are living with little direct and conscious experience of the beauty and complexity of the Earth's living systems.

The post-2020 biodiversity framework will recognise the growing societal disconnect from nature as an important indirect driver of biodiversity loss. It will include strategies for addressing this disconnect in order to bring about the transformations necessary to halt biodiversity loss.

The success we all need, we all strive for, demands transformational change.

It demands new pro-environmental behaviours. It demands partnerships and information exchange. It demands financial resources and capacity development and enhancement.

– Elizabeth Maruma Mrema

It can only be built and strengthened if the whole of society works together. Zoos and aquariums stand poised to be an important part of the post-2020 global biodiversity framework over the next 10 years. Your work with national Governments as well as local and subnational governments is equally crucial.

Your ability to pull people and societies to work together is likewise imperative. You may exist in certain cities and national contexts, but you bring the world together in your conservation work, and in your exhibitions to many visitors. You can bring us all together to connect with nature in all its splendour. All these efforts are a sine qua non for our biodiversity agenda to halt and reverse biodiversity loss. On my own behalf and that of the Secretariat as well as the global community, I offer sincere thanks and appreciation for all the splendid work and engagement undertaken by the zoos and aquariums for the benefit of biodiversity conservation. Results and impacts are vividly clear and seen.

CITES and WAZA: The Role of Zoos and Aquariums in Keeping Wildlife Trade Legal and Sustainable



IVONNE HIGUERO

Executive Secretary, Convention on Biological Diversity

This is an abridged version of Ivonne Higuero's keynote presentation at the 75th WAZA Annual Conference.

For nearly ten years now, with the signing of a Memorandum of Understanding in 2011, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Secretariat and WAZA have kept strong ties of collaboration in support of the implementation of the Convention and common conservation objectives.

During this period, WAZA has had a committed and beneficial involvement in many CITES meetings, workshops, decision-making processes and communications efforts, and published in 2015 its ambitious new conservation strategy.

Zoos and aquariums occupy a particularly interesting space within the global wildlife trade that is under the regulation of CITES.

CITES – a Dynamic Convention

Since CITES entered into force in 1975, the world has changed vastly. A growing global human population has only meant an increase in the trade in, and use and consumption of wildlife and biodiversity-related resources. The pressure on the earth's ecosystems has grown immensely, and the need to carefully and wisely use wild plants and animals to avoid conservation risks is probably now greater than ever.

Therefore, CITES remains as relevant today as it was 45 years go.

The Convention has continued to evolve and adapt to changing conditions and trends in the global wildlife trade and use.

This has been visible at every gathering of the Conference of the Parties – the supreme decision-making organ of the Convention. At each of its meetings, the Conference of the Parties to CITES considers problems of implementation of the Convention and its effectiveness.



CITES and WAZA

I think it goes without saying that WAZA can and should ensure that all its members trade in specimens of CITES-listed species in full compliance with CITES provisions.

We are nevertheless very fortunate that WAZA members are keen on bringing much more to CITES than the mere issue of correct implementation. The Convention can benefit greatly from your expertise, your vast influence among such a wide network, and your skill for practical solution-finding.

– Ivonne Higuero

To consolidate this mutually beneficial collaboration, the CITES Secretariat and WAZA signed a Memorandum of Understanding in December 2011.

This was aimed at facilitating access to expertise, the provision of training, and raising public awareness regarding the implementation of CITES.

Major fields of cooperation include:

- care and placement of confiscated live animals;
- transport of live animals, whether it be for commercial trade, breeding, research or conservation purposes;
- gathering and sharing information about current wildlife trade and conservation issues;
- knowledge and experiences in captive breeding;
- communication and awareness;
- and training and capacity-building.

Let's look at each of these areas and see what we have accomplished to date, and where we see a scope for new approaches or expansion.

Confiscated animals

In many countries, zoos and aquariums are, or could become, important rescue centres or temporary holding facilities for confiscated or seized animals. This role could be expanded, and WAZA members could advise on suitable solutions for confiscated live animals and share relevant information.

During the 17th meeting of the Conference of the Parties in 2016, CITES developed and adopted much-enhanced guidance for the disposal of confiscated live animals. WAZA members actively and significantly contributed to this renewed guidance. They could now assist in promoting its use, testing it on the ground, and bringing further improvements where needed.

The veterinary expertise of zoos and aquariums can be important when screening confiscated live animals for diseases, and possibly sourcing diseases. Such information could be shared with national health services, as well as CITES authorities, particularly Parties' Scientific Authorities.

Transport of live animals

WAZA members have an excellent understanding of and significant practical experience with the transportation of live animals, which is an important component of the CITES regulations.

For the transport of live animals, the Live Animals Regulations of the International Air Transport Association (IATA) are the guidelines that should be fully and effectively used by CITES authorities. Through its networks and interactions with IATA, WAZA can support in keeping CITES transport guidance pertinent and up to date.

One way could be for WAZA to participate in the reviews of this guidance by the CITES Standing Committee or Animals Committee, where they can discuss new developments and share their expertise.

Current wildlife trade issues

The WAZA network can liaise with CITES scientists and researchers from national Scientific and Management Authorities and provide assistance in the collection of data and information on the status of wild species.

This could greatly help in the process of making a Non-Detriment Finding, for example, but also in areas such as identification, taxonomy, marking and forensic sciences.

For some work, the contributions from the WAZA network in the coming years will be important not to say indispensable, and I know that in some areas, WAZA members are already providing hands-on assistance.

Let me give you a few examples.

Marking and monitoring of live Asian elephants [D. 18.222-18.227]

All Parties involved in the trade in Asian elephants and their parts and derivatives are encouraged to develop strategies to manage captive Asian elephant populations, and collaborate in the development and application of a regional system for registering, marking and tracing live Asian elephants. They should request as necessary assistance from experts, specialised agencies or the CITES Secretariat. At the moment, promising efforts are underway in this regard, led by AZA and the Columbus Zoo, and hopefully WAZA members will be key partners to help put in place such a system work.

Live ornamental fish trade [D. 18.296-18.298]

At CoP18, the Secretariat was instructed to convene a technical workshop to consider the conservation priorities and management needs related to the trade in non-CITES listed marine ornamental fishes worldwide. It is now organising workshop documents on marine ornamental fishes' biology; conservation status; trade and management; applicable trade regulations; and enforcement. Active participation in this undertaking, and inputs and expertise from WAZA members, would be highly appreciated.

Appropriate and acceptable destinations

WAZA previously participated in a working group that developed non-binding guidance for Parties to use when considering whether the proposed recipient of a living specimen is suitably equipped to house and care for it. This guidance was adopted at CoP18 and is currently being applied by CITES Parties. WAZA can continue to play an important role in this work by providing examples of best practice for housing and

caring for animals and by working with the Animals Committee to develop more specific guidance for living specimens of African elephants and southern white rhinoceros, and developing best practice guidance on how to determine whether "the trade would promote *in situ* conservation. This will be done through a formal working group on the definition of "appropriate and acceptable destinations", that was recently established by the Animals Committee and we are happy to see that WAZA has registered its interest in becoming a member of this working group.

Amphibian trade and breeding [D. 18.194 - 18.196]

We were instructed at CoP18 to conduct one or more interdisciplinary workshops for CITES Authorities and other stakeholders about CITES and non-CITES listed amphibians in international trade. Again, the WAZA community, with its vast experience in keeping and breeding amphibians, would be very well placed to contribute to these undertakings. Background research to feed into these workshops is being organised, and we would highly appreciate if we could reach out to WAZA for assistance in this regard.

Songbirds [D. 18.256 - 18.259]

WAZA members can assist by providing their knowledge and expertise to help determine the scale and scope of the trade in songbirds in order to establish the management and conservation needs of those species.

Zoonotic diseases

A novel field of collaboration that could be explored is sharing veterinary expertise and know-how about zoonotic diseases. We intend to collate and provide information to our Standing Committee on how COVID-19 measures are impacting the functioning of CITES, and how in turn CITES could contribute to reducing risks posed by zoonotic diseases.



Photo: Bilby joeys. © Perth Zoo.

Trade in live animals in accordance with CITES

Finally, the zoo and aquarium community can act a bit as the eyes and ears on the ground concerning live-animal trade that may be questionable or unusual, e.g., by sharing up-to-date information about suspected offers, prices, or trade developments. An example that occurred in recent years concerned offers to zoos of 'captive bred' great apes from a country that was known not to breed these species. Alerting the broader CITES community for such dubious business proposals can help investigations and prevent illegal transactions.

Captive breeding

We have observed a clear shift from trade in wild-caught animals to trade in ranched, captive-bred or aquaculture animals and their products. This brings new management and conservation challenges.

WAZA's conservation strategy can enrich the ongoing discussion in CITES on the relationship between *in situ* and *ex situ* conservation actions. There are many opportunities for WAZA to share its expertise.

Some recent practical areas of possible support and collaboration are the following:

New Captive Breeding Resolution

At CoP17, the Parties adopted a new resolution on Review of trade in animal specimens reported as produced in captivity (Resolution Conf. 17.7 (Rev. CoP18)). This resolution sets out a procedure to review biological, trade and other relevant information regarding animal species subject to significant levels of trade using source codes C, D, F or R, to identify problems associated with the implementation of the Convention and to develop solutions. At the first meeting of the Animals Committee after each CoP, a limited number of species-country combinations may be selected for review and the Animals Committee may commission reviews of the species concerned, in consultation with relevant countries and specialists. One of the aims of these reviews is to compile and summarise known information relating to the breeding biology and captive husbandry of the species, an area where the expertise of WAZA members would naturally be invaluable.

Inspecting breeding facilities

An area that is becoming increasingly important is the development and use of practical guidance for inspecting commercial captive breeding facilities. Such guidance has been prepared and is being rolled out by the Secretariat in recent years, and is also available on our website.

WAZA seems ideally placed for providing very pertinent practical examples, help us promote and update the guidance, or take part in training.



Photo: Tigers are listed in CITES Appendix 1.
© Andreas Kaufmann.



Photo: Children learning about tigers. © Zoos Victoria.

Tiger farms [D. 17.226 & 18.100 - 18.10]

In connection with the preceding, CoP18 directed the CITES Secretariat to undertake missions to seven Parties in whose territories are facilities which may be of concern in keeping very large numbers of Asian big cats – tigers – in captivity, with the purpose of gaining a better understanding of the operations and activities undertaken by these facilities. The Secretariat identified the countries and facilities with unusually high number of tigers by using WAZA information on ‘normal’ numbers of Asian big cats kept in reputable zoos.

Communication, training and capacity building

Raising awareness about trade in and sustainable use of wild species seems a natural role of WAZA-affiliated institutions. Could we perhaps develop joint WAZA-CITES information and education campaigns?

WAZA members from all parts of the world have leveraged their capacity to bring an increasingly urban global population closer to nature. Efforts like the WAZA Nature Connect Grants Programme and the Reverse the Red movement, are just some of the latest examples of your collective work in this respect.

These are aimed at both raising awareness of, and taking action in fields that are also critically important to CITES, and they could serve to promote our common objectives in terms of conservation and sustainable use.

Conversely, the CITES Secretariat has also worked to make tools, materials and information-sharing platforms available to Parties and their officials. These include detailed case-studies on livelihoods and sustainable use, and the online courses of the CITES Virtual college.

The platforms could greatly benefit from the collective expertise and inputs of WAZA’s membership, which could bring its knowledge on issues that are central to the work of national agencies, like customs. These could touch upon disposal of confiscated specimens, as mentioned before, but also on transportation of live animals, veterinarian care, identification, or conservation matters.

Conclusions

The success of CITES relies upon the contributions, ongoing commitment of, and collaboration between, multiple organisations and people coming from a wide range of disciplines and perspectives. The Convention benefits from the rich, diverse and constant level of interest it receives, whether from partners, staunch supporters or long-standing critics.

WAZA Members have expertise in animal breeding and care; marking and tracing animals; transport of live animals; *in situ* and *ex situ* conservation; sustainable use; education, training and research; and many, many more areas.

All of these areas are particularly pertinent to CITES, and our cooperation has borne fruit. But over the course of the last ten years, since our memorandum of understanding was first signed, new challenges have arisen.

The COVID-19 pandemic has made some throw into question our entire relationship with nature, including key aspects of it for both CITES and WAZA and its membership.

How do we deal with valuable species, essential for trade and human livelihoods, when it comes from a possible hotspot for diseases? How do we ensure that vital resources for, say the purpose of medical research, remain accessible to scientists without harming species or their environments? How can we best combat wildlife traffickers’ increasingly complex criminal arsenal and restore seized or retrieved specimens to their natural habitats?

These are just some of the issues where the CITES community would greatly benefit from an expanded partnership with WAZA and its global network of zoos and aquariums.

We look forward to continuing to explore avenues for cooperation. We have great hopes that, as we strive towards achieving our common objectives of conservation and education, we can make a genuine difference in tackling the immense challenges we are faced with today, and contribute to building practical solutions to conserving our planet’s most precious wildlife.



Photo: Dr Prof Jörg Junhold holding the Heini Hediger Award.
© Leipzig Zoo

Announcing the 2020 Award Winners

Gavrielle Kirk-Cohen

WAZA

The 2020 WAZA Awards were presented during the WAZA Virtual Conference in October.

The top honour of the year, the Heini Hediger Award was presented to Prof Dr Jörg Junhold, Director of the Leipzig Zoo, on the final day of the WAZA Conference. This award is given to individuals who have provided outstanding service and a lifelong commitment to the zoo and aquarium community.

Prof Theo Pagel, President of the World Association of Zoos and Aquariums (WAZA), said; "It is a great honour and joy to present WAZA's highest accolade to our esteemed colleague Jörg Junhold. He has transformed the Leipzig Zoo into a world-leading institution. He has been an incredibly active member of the zoo and aquarium community on a local, national and international level, representing his zoo in many associations and institutions worldwide. He served on the WAZA Council for ten years and also served as the WAZA President."

Junhold has over the past 23 years since he became CEO of the Leipzig Zoo in Germany, been one of the major driving forces in the zoo community, promoting the zoo and aquarium community's shared goals on species and habitat conservation, and animal welfare. He transformed the Leipzig Zoo from being

an antiquated struggling zoo, into one of the best zoos in the world. Under Junhold's leadership, Leipzig Zoo has become a world-leading zoo. As WAZA President in 2011-2013, he initiated the WAZA Animal Welfare Strategy.

"I am overwhelmed, I am thankful, I am proud, and I am deeply touched to have been awarded this honour. I had never expected to get the Heini Hediger Award, the most important award of our community. Such an award you cannot expect, it will probably only ever happen surprisingly, and it leaves you almost speechless."

– Dr Prof Jörg Junhold

"Thank you so much to WAZA, all its decision makers and members – especially the judging panel – for this sign of recognition and motivation. This gives 2020 a special and especially a positive moment." said Dr Prof Jörg Junhold.

The Detroit Zoological Society was presented with the WAZA Environmental Sustainability Award on the second day of the WAZA Annual Conference for their sustained efforts in reducing their ecological impact through their winning green programme. The programme set clear and achievable goals on waste reduction and avoidance and introduced a zero-waste initiative as part of their commitment to reducing landfill waste and greenhouse gas emissions. The institution has discontinued single-use water bottles, plastic gift bags and plastic straws in an effort to reduce plastic waste significantly and constructed an anaerobic digester to compost manure and food waste, making them the first institution in North America to build and implement this system.

"We are so appreciative of this wonderful recognition by our peers," said Ron Kagan, executive director and CEO for the Detroit Zoological Society. "The entire organisation has committed to this journey toward environmental sustainability."

The WAZA Conservation Award was awarded to Georgia Aquarium for its robust and holistic approach to whale shark conservation, balancing scientific learning, habitat protection, education, capacity building and advocacy to improve the outcomes for this charismatic species since 2004. The Aquarium works with researchers from local and global academic institutions to gain valuable knowledge on the growth, genetics, health and behaviour of whale sharks and sequenced the complete genome of the whale shark. Georgia Aquarium's programme involves *in situ* work and has created two marine protected areas focused on whale sharks. The aquarium has lobbied governments at the highest level, run extensive education campaigns and invested more than US\$2 million into whale shark field research.

"Georgia Aquarium is incredibly honored to be the recipient of the WAZA 2020 Conservation Award for our whale shark research and conservation programme," said Dr Brian Davis, president and CEO of Georgia Aquarium. "We are committed to inspiring awareness and preservation of aquatic species worldwide and with our robust research and

conservation initiatives, we stay true to that mission. Through our whale shark research programme, we hope to help the scientific community gain a deeper understanding of these gentle giants and ensure that they continue to flourish so future generations can learn from them and gain an appreciation of these magnificent animals"

"With the challenges we have faced this year, we feel it is especially important to recognise and celebrate the great work our members are doing to adopt sustainable best practices and to conserve threatened species," said Mike Barclay, Chair of the WAZA Conservation and Environmental Sustainability Committee. "We had many excellent submissions to choose from."

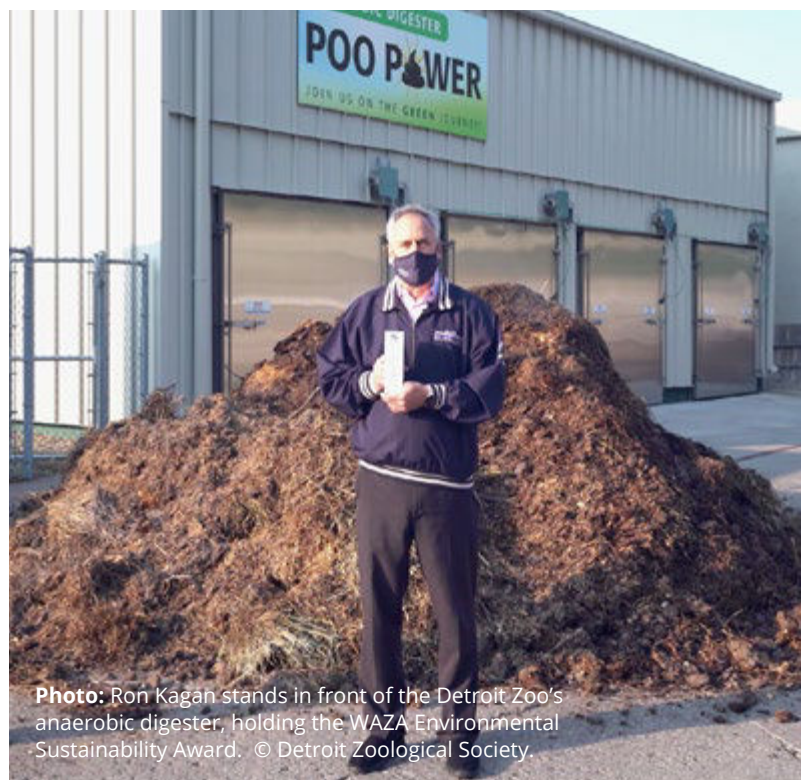


Photo: Ron Kagan stands in front of the Detroit Zoo's anaerobic digester, holding the WAZA Environmental Sustainability Award. © Detroit Zoological Society.



Photo: Dr Brian Davis, holds the WAZA Conservation Award in front of the whale shark exhibit. © Georgia Aquarium



Protecting Our Planet, the WAZA Sustainability Strategy 2020-2030

Karen Fifield MNZM

Editor of the Sustainability Strategy, Chair of the WAZA Ethics and Animal Welfare Committee, and Chief Executive of Wellington Zoo.

At the 75th WAZA Annual Conference, WAZA launched *Protecting our Planet: the WAZA Sustainability Strategy 2020-2030* – a guide for WAZA members to help achieve sustainability outcomes crucial to progressive conservation organisations.

Why does WAZA need the *Protecting Our Planet* Strategy?

Leading, progressive zoos and aquariums focus on conservation and rightly so. But are we doing enough in the sustainability space to really close the loop and join the dots? What initiatives in our zoos and aquariums are already walking the talk? If we want our communities to change behaviour for the benefit of the planet, then we should be modelling that behaviour.

In September 2015, all 193 Member States of the United Nations (UN) adopted a plan for achieving a better future for all – laying out a path over the next 15 years to end extreme poverty, fight inequality

and injustice, and protect our planet. At the heart of Transforming Our World: the 2030 Agenda for Sustainable Development are 17 Sustainable Development Goals (SDGs) which clearly define the world we should all want – applying to all nations and leaving no one behind.

The 17 UN Sustainable Development Goals

The SDGs provide a plan of action for people, planet and prosperity. The SDGs are a powerful aspiration for improving our world, and if we, as progressive zoos and aquariums, are serious about being part of a better planet then sustainability should be integral to how we think and act. Sustainability initiatives are growing across WAZA member organisations, and many members are making significant advances in this area. The Decade of Action for the UN Sustainable Development Goals is 2020-2030 and *Protecting Our Planet* reflects this need for action over the coming ten years to create a better future.

How is Protecting Our Planet designed, and how can members use it?

- The 17 UN SDGs are used as the framework for the chapters.
- *Protecting Our Planet* is linked to other WAZA Sustainability Memorandums of Understanding (MoUs) like Plastics Reduction (with UN Environment Programme – UNEP), Sustainable Palm Oil (with the Roundtable on Sustainable Palm Oil – RSPO) and sustainable timber and paper use (with the Forest Stewardship Council – FSC).
- Chapters include information, recommendations and checklists.
- Case studies for each chapter are examples from WAZA members.
- The Resources chapter provides more information.
- *Protecting Our Planet* is an online document and will not be printed; however, if members would like to print it for their own use, they can download a printable version from the WAZA website.

The sustainability strategy provides information to assist WAZA members in integrating sustainability into their strategies and throughout their operations.

The SDG framework allows zoos and aquariums to make strategic decisions to tackle one or more of the SDGs at any given time. While some SDGs seem more relevant to our profession, there are links across almost all of them if addressed holistically.

All the SDGs are complementary, and some actions may address several SDGs. Creating more equitable conditions for people globally has spill over benefits for the environment and the wildlife and wild places we are tasked with protecting. More responsible consumption influences supply chains and promotes ethical purchasing. Certification for carbon neutrality and conservation efforts in zoos and aquariums creates a better environment for animals and people and equips us to deal with the effects of climate change.

By examining the SDGs as a whole, each zoo or aquarium can decide which of the 17 Goals are most applicable for their contexts. Members should choose the SDGs that are most relevant to their operations. These may change over time, and WAZA

members should evolve their SDG programme of work as they develop new organisational strategies and adjust their operations.

WAZA does not expect its members to achieve results in all 17 Goals, but to work towards better integration of sustainability across their organisation.

What is next for *Protecting Our Planet*?

Work is already underway to translate *Protecting Our Planet* into other languages. If members have any case studies they would like to share, please contact the WAZA Office and links to these can be included on the WAZA website alongside the strategy.


Aligning with the SDG goals and adopting their terminology will help members to report progress on the SDGs and provides a standardised communication tool. WAZA will be able to track member activity over the coming Decade of Action and provide voluntary reporting to the UN of member contributions to the delivery of the SDGs.



Photo: Orangutan. © Chester Zoo.

Please visit waza.org to download your copy of *Protecting our Planet: the WAZA Sustainability Strategy 2020-2030*.

Launching Social Change for Conservation: The World Zoo and Aquarium Conservation Education Strategy



Dr Sarah Thomas

Head of Conservation Advocacy and Engagement, Auckland Zoo, New Zealand.

Strategic development process

The project to create the first *World Zoo and Aquarium Conservation Education Strategy* (WZACES) was initiated by the International Zoo Educators Association (IZE) and developed in collaboration with WAZA. Consultations with diverse stakeholders and an online survey (n=239, 34 countries) gathered thoughts and ideas from a wide range of people. These, together with a literature review, identified conservation education strategic themes which were synthesised into the first draft of the strategy.

Following a series of edits and redrafts, an invited panel of over 50 global reviewers helped shape the final draft. Thanks and praise go to the hundreds of contributing individuals and organisations. More than 350 individuals from 180 institutions and 43 countries and regions shared their ideas, enthusiasm, and expertise to shape this innovative and inclusive global approach for conservation education in zoos and aquariums.

Building diverse and sustainable futures for people and nature

Rapidly changing environments, a global pandemic, and devastating biodiversity loss due to human activities make this role increasingly important. Urgent, effective, and collaborative action is therefore needed to change how people collectively think, feel, and act toward the natural world. This context presents a unique opportunity for zoos and aquariums to take a leadership position in contributing to this social change for conservation.

As the first unified global strategy on conservation education, *Social Change for Conservation: The World Zoo and Aquarium Conservation Education Strategy* signifies an extraordinary step-change for many zoos and aquariums. It affirms IZE's and WAZA's commitment to lead and support its members, colleagues, and the wider zoo and aquarium community to build expertise, leadership, and capacity in quality conservation education.

Through its set of 22 recommendations, *Social Change for Conservation* guides zoos and aquariums to achieve educational and social outcomes crucial to their organisational mission. It specifically calls on zoos and aquariums to:

- Build a culture of conservation education in their organisations.
- Create strategic conservation education plans with measurable learning outcomes for diverse audiences.
- Appreciate the range of authentic and relevant purposes of conservation education – such as creating connections to nature, fostering empathy for wildlife, capacity building, and motivating pro-environmental behaviours.
- Grow audience reach while being diverse, equitable, accessible, and inclusive.
- Design and deliver clear messages, compelling content, and innovative programming.
- Be optimistic and solution-focused to relevant conservation and environmental issues.
- Prioritise embedding principles of animal welfare into conservation education. Optimise conservation education training and professional development opportunities for staff, volunteers, and audiences.
- Strengthen the evidence of the contributions, value, and impacts of conservation education by zoos and aquariums.

An overview of the strategy

Each chapter in this strategy guides zoos and aquariums to achieve the recommendations. It gives an overview of the purpose of this strategy, and the scope of conservation education in zoos and aquariums.

Introduction: Describes the need to build a culture of quality conservation education within individual organisations and the wider global zoo and aquarium community.

Chapter 1: Recognises and describes the core purposes of conservation education.

Chapter 2: Motivates and mobilises audiences into active conservation advocates. The strategy acknowledges zoos and aquariums are in a unique position to reach large, diverse audiences while highlighting the importance of being diverse, equitable, accessible, and inclusive organisations.

Chapter 3: Emphasises how quality conservation education should be designed and delivered through innovative programming and compelling content.

Chapter 4: Considers critical factors that exemplify excellence in conservation education. It outlines how animal welfare should be prioritised in conservation education – first, concerning how animals are involved in activities and interactions with audiences; and second, how to communicate how zoos and aquariums care for their animals and their contributions to biodiversity conservation.

Chapter 5: The strategy recognises the range and complexity of conservation, environmental, and sustainability topics that can be woven throughout conservation education. It advocates for optimistic and solution-based approaches to catalyse social change for conservation.

Chapter 6: Briefly outlines the diverse development pathways and training opportunities that help to build capacity for success in staff, volunteers, and their audiences.

Chapter 7: Finally, the strategy focuses on research approaches that can strengthen the evidence of the contributions, value, and impacts of conservation education by zoos and aquariums.

Chapter 8: The appendices include a bibliography, glossary of terms and a WZACES recommendations self-evaluation checklist tool.

Next steps

We encourage all staff and volunteers in your organisation to read the strategy, so please share it widely; it is available to download from the WAZA website. Use the self-evaluation checklist to audit your organisation against the 22 WZACES recommendations. This can help identify and inform what next steps your organisation might take to improve and expand your conservation education practices. IZE and WAZA plan to roll out further training, resources, translations and support materials to enable all zoos and aquariums to meet the WZACES recommendations.

If you have any questions or are interested in participating in translating the document into your first language, please contact:

Dr Sarah Thomas (WZACES author)
sarah.thomas@aucklandzoo.co.nz

or Dr Judy Mann (IZE Board lead for WZACES)
jmann@saambr.org.za

Caring For Wildlife, Five Years of the WAZA Animal Welfare Strategy

Karen Fifield MNZM

Chief Executive of Wellington Zoo and Chair of the WAZA Ethics and Animal Welfare Committee.

In 2013, Prof Dr Jörg Junholdt, Director of Leipzig Zoo, former WAZA President and WAZA 2020 Heini Hediger Award Winner, had the vision to initiate *Caring for Wildlife – the World Zoo and Aquarium Animal Welfare Strategy*. Written over two years, *Caring for Wildlife* was published in 2015 with a leading role taken by Professor David Mellor of Massey University and a team of animal welfare experts involved in its development.

This year we celebrate the 5th Anniversary of the publication of *Caring for Wildlife*, the World Zoo and Aquarium Animal Welfare Strategy. As Professor David Fraser says in the foreword to this strategy; "Society has few institutions that make the welfare of wild animals a key concern." WAZA members are at the forefront of this important area by having animal welfare at the centre of their operations. *Caring For Wildlife* enables these zoos and aquariums to establish and maintain best practice welfare within the Five Domains of Animal Welfare framework. The Five Domains model addresses not only the basic survival needs of animals but goes beyond to enhance welfare through positive experiences.

By using the strategy, WAZA members approach animal welfare in a holistic and structured way through its evaluation, measurement of staff awareness, exhibit design, research and environmental enrichment. The strategy goes even further by providing references to breeding programmes, animal-visitor interactions, partnerships and conservation welfare.

Caring for Wildlife reflects and enhances the growing interest in animal welfare from various communities of interest such as animal welfare academics, animal rights groups, other animal welfare non-governmental organisations and the visitors to our organisations.

By providing quality, science-led guidance to WAZA members to achieve high standards of animal welfare in support of their conservation, education, recreational and research outcomes, it has raised the bar for animal care and welfare in WAZA member institutions.

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Like all WAZA strategies, the development of *Caring for Wildlife* was led by highly respected and renowned animal welfare experts, including scientists, academics and animal welfare professionals. Input was received from many WAZA members, the WAZA Executive Office, the WAZA Council and other animal welfare organisations such as the Royal Society for the Prevention of Cruelty to Animals (RSPCA), FOUR PAWS, World Animal Protection and Wild Welfare.

But the work with the Strategy was by no means complete after its publication. Since the Strategy was launched in 2015, the effort was made to disseminate it through not just WAZA members but also to the broader zoo and aquarium community, which led to the translation of this document into no less than ten languages. We would like to take this opportunity to thank WAZA members who contributed to this essential task.

The WAZA Animal Welfare Commitment Statement in the strategy highlights that world-leading zoos and aquariums should have a continuing commitment to animal welfare improvements.

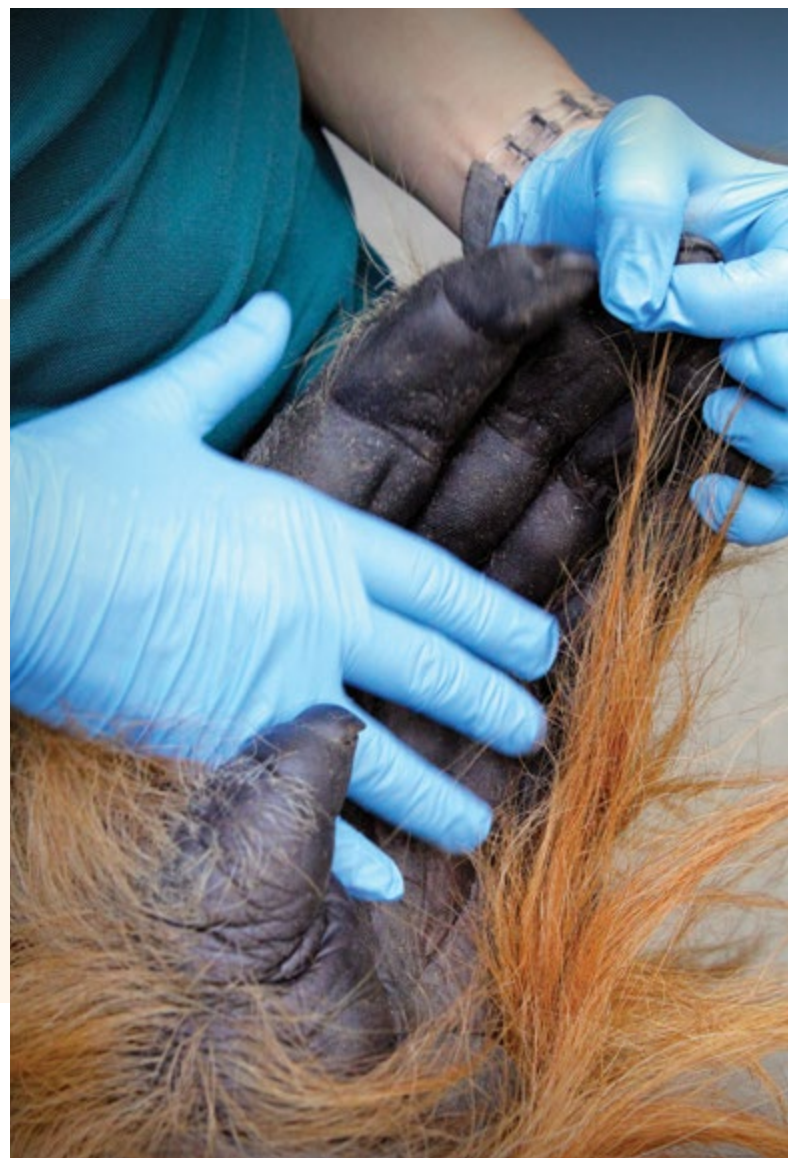
It states that our commitment as WAZA members is to:

- **Strive to achieve high welfare standards for animals in our care**
- **Be animal welfare leaders, advocates and authoritative advisers**
- **Provide enrichments that focus on the animals' physical and behavioural needs.**

Zoos and aquariums have a responsibility to achieve high standards of animal welfare in support of their goals as modern conservation organisations.

The WAZA membership survey in 2019 revealed that 85.63% of WAZA members respondents felt that the *Caring for Wildlife* Strategy was useful for their organisation, and that one major role for WAZA was to support regional and national associations in the animal welfare area (75.63% of respondents), which has been the case since the 2023 Animal Welfare Goal was set and approved by members. *Caring for Wildlife* was a significant keystone document which has led to further animal welfare work on Animal - Visitor Interactions Guidelines, and the WAZA 2023 Animal Welfare Goal suite of work.

WAZA continues to make strides in animal welfare outcomes for the animals in our care. The 2023 Goal will be momentous for WAZA members and will set up a clear mandate of WAZA members to allow them to act as the authoritative voice for animals. Five years after its publication, *Caring for Wildlife – the World Zoo and Aquarium Animal Welfare Strategy*, is still relevant and still provides insight and direction for ongoing animal welfare work at the global level and for individual WAZA member organisations. It is a seminal document in the WAZA ambition to be a global community of leading zoos and aquariums.





The WAZA Conservation Strategy, Five Years Later.

Photo: Martha Hiatt bottle feeding a Pacific walrus calf. © Julie Larsen Maher/Wildlife Conservation Society.

Rick Barongi

Co-editor of Committing to Conservation: The World Zoo and Aquarium Conservation Strategy.

In recognition of the fifth anniversary of the *WAZA Conservation Strategy, Committing to Conservation*, and to address the question of whether we need another updated edition, let's attempt to evaluate its impact on our zoological community worldwide. Surveys reveal that our members consider it to have been a helpful resource for many WAZA institutions.

The WAZA Conservation Strategy series (there have been three editions since 1993) was intended to complement and strengthen other conservation documents and initiatives. All three editions were living documents and a result of collaborative efforts involving hundreds of conservation colleagues. Each edition built upon the preceding edition, and evolved with the changing landscape of biodiversity conservation, especially within the scientific, business and political arenas.

The first WAZA Conservation Strategy was published 27 years ago and the world has changed exponentially since then. As a starting point, we have many more people on the planet, consuming

more natural resources at a much faster and unsustainable rate. Climate change is still not universally accepted outside of the scientific community, despite overwhelming evidence and catastrophic events becoming more pronounced each year. Social media has also played a considerable role in how information is shared, and support galvanised. Add to this a global pandemic and the recent preponderance of short-sighted political leaders, and we are left with a very complex and unpredictable future.

On the positive side, there are many more individual conservationists, conservation NGOs, private philanthropists, and zoo and aquarium-based conservation programmes than there were 27 years ago.

The very first WAZA Conservation Strategy (titled *The World Zoo Conservation Strategy*) was published in 1993 when WAZA was still called the International Union of Directors of Zoological Gardens (IUDZG). It was written under the guidance of the then

Conservation Breeding Specialist Group (CBSG) of the IUCN Species Survival Commission (SSC) and printed and published by the Brookfield Zoo. This original document was mostly a scientific “call to arms” that articulated a vision where everyone would work together to save nature and humanity. Its primary purpose was “to bring *ex situ* institutions into the mainstream of biodiversity conservation and sustainable development”. This was a ground-breaking declaration that WAZA zoos and aquariums were serious about conservation action outside of their gates.

The second Conservation Strategy was published in 2005 (*Building a Future for Wildlife*) and incorporated a separate resource manual to develop action plans to implement conservation strategies. The front cover showed a group of zoo-bred Przewalski’s horses being released into the Gobi National Park, Mongolia. It was written to appeal to a much broader and more general audience.

It also included summary recommendations at the end of each chapter. It was a powerful document that played a significant role in changing public perceptions of zoos and aquariums from being considered as primarily entertainment venues to centres of animal wellness and conservation. This edition backed up our conservation intent with active programmes and strategic plans to practice what we preached.

Finally, the third edition focused on the concept of full integration of a conservation mission at every level, rather than just maintaining a separate department of conservation. The title alone, “*Committing to Conservation*” reveals much of what the focus of this current edition strives to achieve. It adopted more of a cultural and business approach to implementing conservation initiatives. Realising that conservation action requires more than a ‘recipe book,’ we augmented scientific facts with behaviour change initiatives and battle-tested fundraising messages. We developed, *Seven Steps to Conservation Leadership*, a checklist for self-evaluating conservation programmes. It is a proactive document that was designed to help leaders evolve their leadership skills to become conservation ambassadors for their core mission.



Photo: Mar Alliance Belize, taken from the WAZA Conservation Strategy: *Committing to Conservation*.



Photo: Aquarium specialists provide assistance to a coral conservation project using their expertise in coral propagation.
© Coral Restoration Foundation.



Photo: Local communities participate in reforestation efforts in Madagascar to preserve lemur habitat. © Conservation Fusion, Madagascar

Personal Reflections and the Future

There is little doubt that these three Conservation Strategies were useful building blocks for developing zoo and aquarium-based conservation programmes. They also helped to strengthen our reputation as credible conservation organisations. It is gratifying to see that many survey participants used these strategies to develop and grow their conservation programmes.

The types of questions we should be asking now, are:

- What is the best approach to take, to ensure we continue to inspire and equip our member institutions to allow them to make meaningful advances in conservation initiatives?
- Are periodic updates to our Conservation Strategies enough, or should we be thinking on a grander scale?

WAZA is the umbrella organisation that is best suited to leading a global transformation that could change the very definition and public perception of zoos and aquariums. However, one could claim that none of the actions we have taken have stemmed the tide of the bio-destruction occurring on our planet. Therefore, it could be said that it is not worth the time and effort of producing a fourth edition of the WAZA Conservation Strategy. However, I doubt that any of the members of the zoo and aquarium community would agree with this premise.

We may not be reversing the decline, but there is evidence that we are definitely slowing it down in some places. A recent study (Bolam et al. 2020) concluded that 15 mammal and bird species went extinct since 1993. However, a greater number (28-48 mammal and bird species) of extinctions were prevented by active conservation intervention during this same period, and zoos played a significant role in these victories for nature. So, we can never give up hope.

Moving forward, we don't need validation as much as trust and collaboration. Where would our institutions be if the WAZA Conservation Strategy had never been published? This is like pondering what the world would be like if you were never born. Since we do not have a Guardian Angel to take us back in time, we can only hypothesise about this 'what if' scenario.

My preference is to thoughtfully consider the potential outcomes if zoos and aquariums took bigger risks, focused on the greater good and solidified their connections to the natural world in ways that really make a difference for people and wildlife. We can do this by transporting guests virtually to the front lines of conservation. If humans are less likely to be travelling around the globe, then let's bring the world to them. Our zoos and aquariums can powerfully demonstrate how saving wildlife and habitats is improving the lives of millions of people. Utilising our animal residents as Conservation Ambassadors to touch hearts and minds should be the catalyst for this change.

The suggestion to increase our conservation commitments while many institutions are currently fighting to survive the aftershocks of a global pandemic may sound a bit unrealistic. However, the pandemic has awoken an increased appreciation and utilisation of nature and the great outdoors as indoor venues and activities have been restricted or closed altogether. Perhaps we could amplify this unintentional outcome to address the pandemic-like nature deficit disorder inflicting so many in our society today?

The next edition of the WAZA Conservation Strategy should plot a path to recovery that leverages positive, proactive, strategies focusing on networking and mentorship programmes that enhance personal connections to people, animals and nature. Building on the increased awareness of the importance of the natural world as people have relied on it more heavily for their recreational, social and mental health needs, now is perhaps the perfect time to encourage action, nurture goodwill and feed optimism about how we can build a better future for ourselves and our children by safeguarding the future of our planet.

Instead of an updated set of documents or manuals, perhaps we need more of a rallying cry – a call to action that promotes a renewed sense of purpose and a shared mindset to work together more effectively. A 'One-Team Approach' is the most powerful change agent we have in our human arsenal. In the end, it always comes down to leadership and culture if you want to advance from good to great. Imagine how much more could be accomplished if we put aside minor squabbles (and inflated egos) and focused on the big picture and started now, because later is too late.

Acknowledgements

I want to acknowledge and thank the primary editors and writers for each edition of the WAZA Conservation Strategies:

1993 First Edition:

Bert de Boer, Roger Wheeler, Peter Karsten, Ulie Seal, William Conway, George Rabb, Michael Brambell, Jeremy Mallinson, Gunther Nogge, Lorena Calvo, Murray Newman, Willie Labuschagne, Fred Daman and Bernard Harrison.

2005 Second Edition:

Jo Gipps, Peter Olney, Onnie Byers, Miranda Stevenson, Peter Dollinger, Bert de Boer, Bill Conway, Ulie Seal, Gunther Nogge, Mark Reed, Ed McAlister and Chris West.

2015 Third Edition:

Fiona Fiskén, Martha Parker, Markus Gusset, Steve Burns, Peter Riger, Renee Bumpus, Megan Farias, Lee Ehmke, Onnie Byers, Jenny Gray, Suzanne Gendron, Sonja Luz, Heribert Hofer, Susan Hunt, Lesley Dickie, Jeff Bonner, Peter Riger, Paul Boyle and Gerald Dick.

Photo: All three editions of the WAZA Conservation Strategies.





It is time to Ask Which Fish?

Laura Myers

European Association of Zoos and Aquaria (EAZA) Academy Manager and Which Fish?

Photo: Landing sardines at El Muro, Spain
© César Quián

The European Association of Zoos and Aquaria (EAZA) began its latest two-year conservation campaign, Which Fish?, at the start of 2020, in partnership with the European Union of Aquarium Curators (EUAC) and the European Association for Aquatic Mammals (EAAM). The goal of the campaign is to facilitate positive behaviour change to sustainable consumption of marine products.

The campaign team chose to focus on marine products because oceans make up the majority of the Earth's surface, are vital to maintaining healthy ecosystems as well as being essential for our own survival. Ocean ecosystems are increasingly under pressure from unsustainable harvesting practices. The Food and Agriculture Organisation of the United Nations (FAO) estimates that a third of marine stocks are currently overfished, and just seven per cent are underfished. At EAZA, we wanted to create a unified effort to address some of these issues and designed a campaign that is (for the first time in EAZA history) led by aquariums, but accessible for everyone.



The campaign team identified three major issues linked to the consumption of marine products where zoos and aquariums can make changes and also encourage their visitors to take action:

- Sustainable consumption of fish and aquatic invertebrates by humans
- Sustainable consumption of fish and aquatic invertebrates by animals in human care
- Sustainable collection planning for fish and aquatic invertebrates housed in zoos and aquariums

These issues all link to the United Nations Sustainable Development Goal (SDG) 14 – Life Under Water, and are also well aligned with the SDG 14 recommendations in the WAZA Sustainability Strategy 2020-2030.

There are several campaign resources available to help participants, such as a green list of sustainable fish choices, information about fishing methods, species fact sheets and access to the EUAC Guidelines for Acquisition to support sustainable collection planning. All of the resources are designed to empower participating institutions and their visitors to ask pertinent questions and receive the information they need to make informed, sustainable choices about the marine products they use. This is the reason the campaign title is posed as a question – Which Fish? We wanted to draw attention to the fact that when it comes to sustainability and biodiversity conservation, very often there is no perfect choice or solution – we all need to keep asking questions to help us make the most informed decisions that we can.

It's hard to design a campaign that is relevant for a whole range of different institutions, so the Which Fish? campaign is designed to be flexible and allow participants to focus on the issues that are most relevant for their institution. We created a list of 14 different commitments linked to the three campaign topics, so participants can choose where they want to focus.

While the aim of the campaign is to encourage behaviour change, this is often challenging to measure when it comes to zoo and aquarium visitors. The campaign team, therefore, decided to focus on institutional behaviour change as well, which is being measured primarily through the use of self-report surveys. We hope to see some positive changes by the end of the campaign period, and also to be able to follow up with participants in the longer term as well.

Like so many other things in this unprecedented year, it has been very challenging to keep the campaign active during a pandemic. Our campaign participants have proved to be extremely resourceful, engaging with the public through videos, social media, exhibitions and signage, and (when safe to do so) at face-to-face events. The campaign team has many more exciting ideas to share for the second year of the campaign in 2021.



Photo: Pescatori 2 © Merlofotografia.com

While the campaign is centred on Europe, we welcome participants from across the world, and you do not have to be affiliated with one of the three campaign partner associations. All WAZA members are eligible to join the campaign – we hope many of you will join us for the second year of the campaign and help us make some meaningful changes to patterns of seafood consumption.

For more information about the campaign or to sign up your institution, please visit our website at whichfish.eu, and don't forget to follow us on Facebook @whichfishcampaign.

We welcome participants from across the world and all WAZA members are eligible to join the Which Fish? campaign.

Unlocking the Power of the 'Like' Button – Leveraging the Science of Social Media to Support WAZA Members

Dr Vincent Jeffries

Director of Marketing and Public Relations, Akron Zoo.

Photo: A social media poll by Akron Zoo found that people showed a preference for images showing animal connections.
© Akron Zoo.

According to Pew Research Center, social media usage has increased 67 percent from 2005 to 2018 and is continuing to grow exponentially. Now more than ever, social media is the tool guests use to connect with WAZA institutions from a distance. While these digital platforms help to create awareness and drive gate attendance, they are becoming an extension of the zoo and aquarium experience and serve a much greater role as a digital mirror for our institutions' and WAZA's culture, mission and vision.

WAZA's commitment to encourage and support the zoos, aquariums and like-minded organisations of the world in animal care and welfare, environmental education and global conservation, can be leveraged by the power of its members' digital channels. However, trying to effectively and consistently maximise this power of engagement for the benefit of the animals in our care and their native counterparts is more than just a hit or miss process. The key to effective engagement requires understanding the

consumer behaviour responses to social media imagery and messaging. What engages those that follow WAZA member zoo and aquarium social media channels? What images and messaging illicit a positive reaction?

To answer these questions, we need to take a deep dive to uncover what causes us to feel a certain way about animal imagery. According to anthrozoologist Hal Herzog, "The ways that we think about animals are often determined by species characteristics – how attractive the creatures are, their size, the shape of their head, whether they are furry or slimy, and how closely they resemble humans." We can accept that information at face value. However, to understand how we can increase the power of social media to benefit WAZA institutions, we need to peel away the layers of four human and animal associations as well as the composition of social media images. These associations lead us to impose particular values or meanings on social media imagery.

Phylogenetic Scale

According to social ecology professor, Stephen Kellert, phylogenetic relatedness to humans is described as “the closer the biological relation of the endangered animal to human beings, the greater the likelihood of public support for the species.” As humans, we relate to animals with varying degrees. For example, we might relate more strongly to a charismatic mega vertebrate, like a tiger, more than we would perhaps, a pigeon. We would relate more to a pigeon than perhaps, a centipede. The more a particular animal replicates our own behaviours (e.g., mammal – gorillas), the higher the animal is ranked on the phylogenetic scale in our ability to relate to them. The lower the animal is ranked on the phylogenetic scale, the farther removed an animal’s ability to mirror human behaviour (e.g., amphibian – salamander).



Social Media Takeaway #1

Zoo and aquarium communication departments may find it beneficial to strategically post a larger percentage of mammal images, especially centred on attendance-driving events or posts that contain an important call to action.

Neoteny

In neoteny, juvenile attributes are retained in an adult animal. For example, adult pandas look very much like their juvenile counterparts as do axolotls compared to other salamanders. Their kinder schema is an ethnologic concept that defines cuteness which is associated with juvenile features. According to zoologist and ethologist Konrad Lorenz, as we associate these characteristics with babies, we are drawn to animals that have large eyes, big foreheads, round faces, short limbs and a dopey gait. We desire, on an instinctual level to care for babies as a means to propagate the human race. According to research investigator Daniel Kruger and psychology professor Steven Miller, one is more likely to show compassion and conservation actions to species with kinder schema features.



Social Media Takeaway #2

It may be beneficial for communication professionals to define a posting strategy that includes an increased percentage of infant animals or animals with neotenic features.



Photo: Spotted hyena mother and cubs.
© Leipzig Zoo Akron Zoo.

Biophilia

According to biologist E.O. Wilson, biophilia is our “innate tendency” to desire a connection with living things. As humans we have a desire to be close to nature. When we see a campfire, wade in water, hike a trail or view a large natural expanse, we feel a connection to the earth. To that end, we have an intimate connection to the animal kingdom. Many people profess their love of pets and appreciation and wonder at wildlife in the natural world. From pets, to service animals, to exotics in zoos or their native habitat, to farm animals, people all over the world express their love and genuine connection to animals.



Social Media Takeaway #3

It can be beneficial to intersperse images that demonstrate the human/animal relationship, such as a zookeeper interacting with an animal in a caring way or guests having a meaningful interaction with an animal.



Photo: Children stare in wonder as they meet an echidna. ©Perth Zoo.

Anthropomorphism

As humans we create connections with animals when we impart human characteristics on them. By viewing animal behaviours through a human action lens, we find commonality with the animal. When a lion stretches out on his back, legs extended in a human pose, we could anthropomorphise that behaviour by relating to the pose we may make after being tired from a long day at the office. We could also say to ourselves, “He’s resting up for the basketball game on TV tonight.” According to psychology professor John Archer, humans treat animals like humans and attempt to form human-like relationships. Because mammalian emotions appear human-like, it makes it easier for humans to treat animals like part of their human family. Thus, while there is a great disparity between animals and humans regarding language and thought process, humans are able to fill the divide by attributing mental states, human emotions and cognisance to the animal, forming a relationship.



Social Media Takeaway #4

Zoo and aquarium communication departments may find it beneficial to create ad copy that imbues the animal subject with human cognisance “Tamarr is a very curious lion, and he is wondering if you are going to visit him on this beautiful day.” We understand that Tamarr is not capable of this human cognisance, so this expresses a healthy form of anthropomorphism. (This is not to be confused with unhealthy forms of anthropomorphism that stereotype, marginalise, or misrepresent animal behaviours or their contributions as unique individuals.)

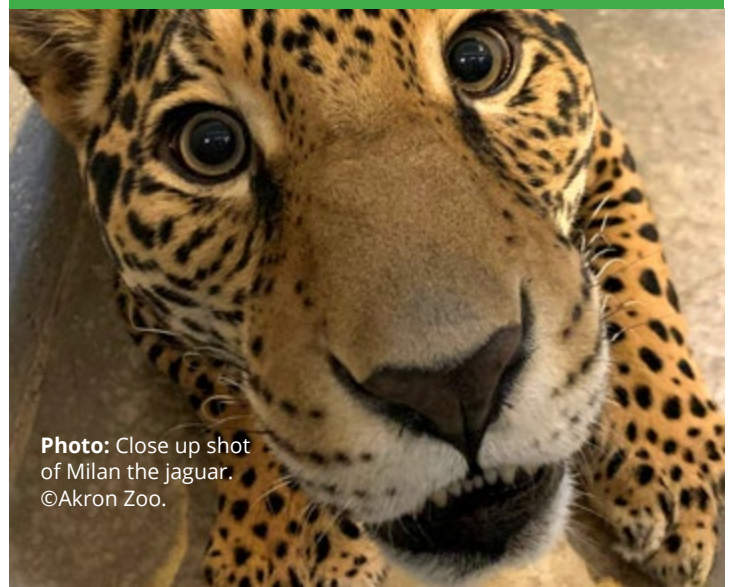


Photo: Close up shot of Milan the jaguar. ©Akron Zoo.

Image Composition

The human and animal associations in this article provide a framework for establishing effective posts that will support individual institutions. However, there is another important matter of defining a posts' composition. The visibility of the animal's face, the size of its pupils and the direction the animal is looking are critical to increasing audience engagement. According to experts Bakhshi, Shamma and Gilbert, social engagement increases exponentially when a face is present in a social media image. Anthrozoologist Hal Herzog and Professor Albert King correlate increased eye/pupil size and eye direction to positive attitudes toward the message sender and the appeal and effectiveness of the image. Similarly, psychology professors Pitch Sajjacholapunt and Linden Ball conducted research demonstrating that mutual gaze (the subject of the image looking directly at the viewer of the image) causes the viewer to look at the image for longer.

Final Thoughts

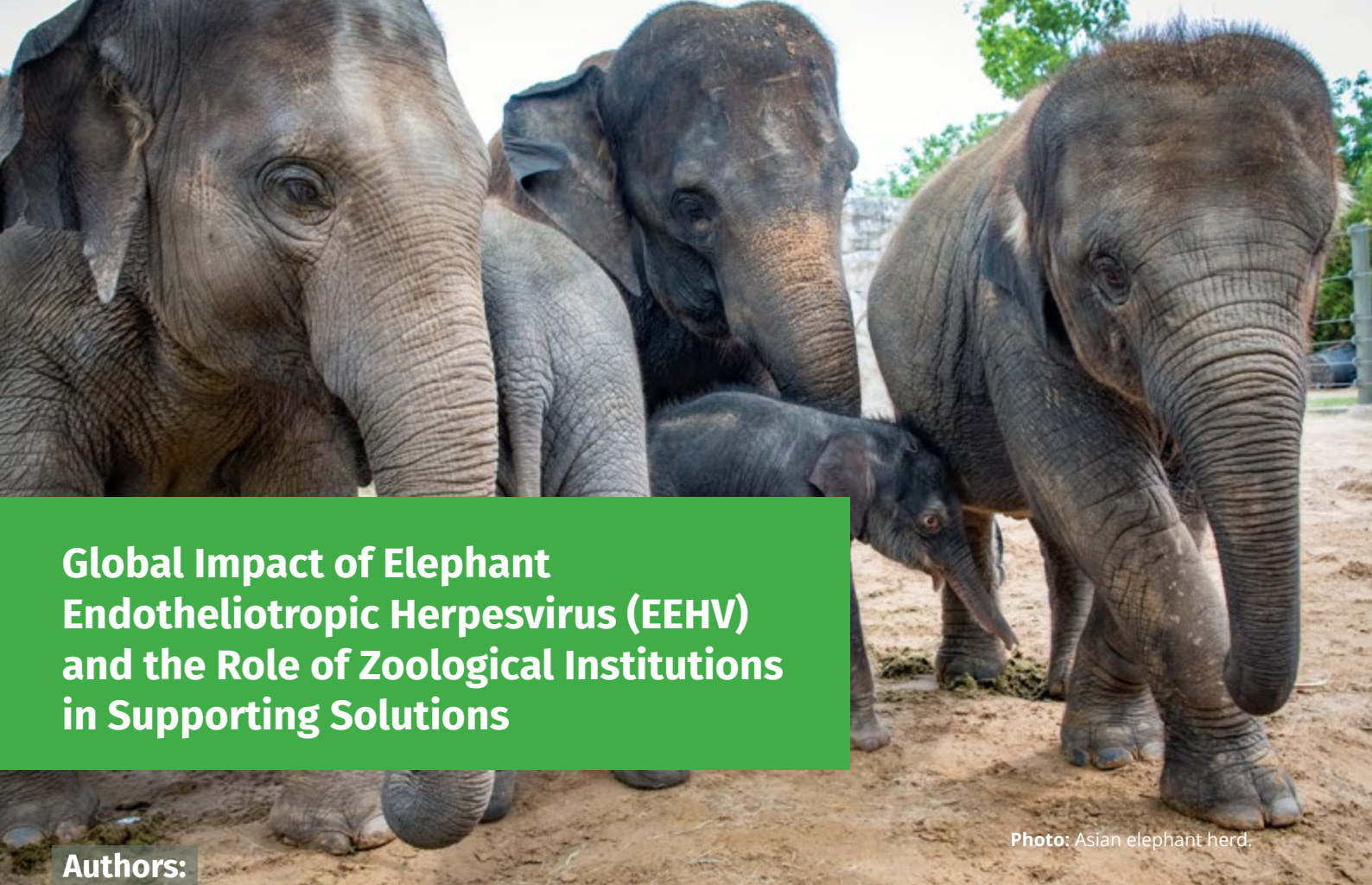
While it is beneficial, for a multitude of reasons, to highlight the diversity of a zoo's entire collection on its social media platforms, research has distilled for us that images featuring the following will have a propensity to garner higher audience engagement:

- **Baby animals**
- **Animals engaged in a human interaction**
- **Wording that hints at healthy anthropomorphism**
- **Increased pupil size**
- **Prominence of an animal face in the image**
- **Mutual gaze with the viewer**
- **Mammals**

Communication professionals at WAZA institutions will continue to be tasked with creating copious amounts of content for an ever-growing list of social media platforms. Leveraging the science behind social media can support WAZA institutions by utilising this knowledge when planning important posts that necessitate strong engagement.



Photo: Gelada baboon.
© Yorkshire Wildlife Park.



Global Impact of Elephant Endotheliotropic Herpesvirus (EEHV) and the Role of Zoological Institutions in Supporting Solutions

Authors:

Christine Molter, Houston Zoo, **Lauren Howard**, San Diego Zoo, **Sonja Luz**, Wildlife Reserves Singapore, **Kathryn Perrin**, Copenhagen Zoo, **Chatchote Thitaram**, Chiang Mai University.

Photo: Asian elephant herd.

The single greatest viral threat to Asian and African elephants worldwide is Elephant Endotheliotropic herpesvirus (EEHV). Although this virus is a normal part of elephant biology, having evolved with both species for millions of years, it also causes fatal internal hemorrhagic disease. Elephant Endotheliotropic Herpesvirus Hemorrhagic Disease (EEHV-HD) has devastated the sustainability of elephant herds in zoological institutions and impacted wild populations. However, due to heartbreaking losses caused by EEHV-HD, zoological institutions around the globe have answered the call to action by establishing advanced diagnostic and treatment protocols, supporting virus research and vaccine development, and collaborating to form international multi-disciplinary EEHV Working Groups.

Impact of EEHV-HD on Asian Elephants in North America and Europe

In North America, EEHV-HD is the leading cause of death in Asian elephants born since 1980. In Europe, at least 31 calves have died from EEHV-HD since 1988. Increased EEHV-HD survival in recent years is due to advances in early diagnosis and comprehensive treatment protocols developed in zoological institutions, which have served as a framework for EEHV management worldwide through the North American based EEHV Advisory Group (eehvinfo.org).

Partnerships between zoos that provide funding and biomaterials and research institutions that offer virology expertise and laboratory capacity have directly led to life-saving diagnostic tests and disease understanding. For example, the long-term collaboration between Houston Zoo and Baylor College of Medicine has not only enhanced diagnostic testing capabilities for EEHV through PCR and serology, but also expanded the knowledge of disease biology, epidemiology, and elephant immunology, which is

laying the groundwork for the development of an EEHV vaccine. In Europe, crowdfunding, research grants, and individual, institutional funding have resulted in the creation of seven PhD and post-doctoral positions dedicated to investigating how we can better manage and prevent this devastating disease. This research and clinical experience has generated a vast library of literature on EEHV. Nearly all the knowledge and research existing on EEHV, and advances in managing EEHV-HD were learned from elephants under human care and are gains funded almost exclusively by zoological institutions.

Impact of EEHV-HD on Asian Elephants in Range Countries and Challenges Associated with Diagnosis

Recognising the increasing impact EEHV has on elephants under human care in western countries, an Asian EEHV Working Group was formed in 2015. Co-convened by Wildlife Reserves Singapore (WRS) and the Faculty of Veterinary Medicine at Chiang Mai University in Thailand, the Asian EEHV Working Group's primary aim is to build up regional capacity for the surveillance and management of EEHV in Asia. The group promotes international collaboration and region-wide coordination by creating a supportive EEHV network to manage EEHV in Asia efficiently. The group has been meeting regularly with the most recent workshop held in Assam, India in 2019.

Over 130 cases of EEHV-HD have been confirmed over the past 15 years, and many more cases were suspected based on macroscopic post-mortem findings. Unfortunately, many countries still don't have adequate access to diagnostic laboratories, and it is particularly challenging to confirm cases in remote areas. While monitoring EEHV in wild elephants has proven to be very difficult, several cases of EEHV-HD have been reported in free-ranging elephants in India. Due to the large numbers of elephants in human care, Thailand, India, and Myanmar are the range country leaders in EEHV research. Through the development of a regional guideline for the management of EEHV, more knowledge about this disease was built, resulting in more young elephants being saved through early detection and appropriate treatment. An international EEHV meeting, which hopes to further build global understanding and collaboration on this devastating disease, is planned to be held in Thailand in 2022.

Impact of EEHV-HD in African Elephants and Steps Being Taken to Close the Knowledge Gap

Until 2019, fewer than five cases of EEHV-HD had been identified in African elephants, and EEHV was widely thought to be much less significant in this species. Since 2019, in North America alone, EEHV has been associated with death in three and life-threatening illness in five African elephants. Thus far, knowledge about Asian elephant EEHV has been the guide for African elephant EEHV management. However, there are key differences between the species, including the range of impacted ages and the frequency of low-level viremia. There is an urgent need for further knowledge about EEHV in African elephants, and zoological institutions, under the leadership of San Diego Zoo Global, are working together to close that knowledge gap.

With knowledge of EEHV in African elephants rapidly expanding in zoological institutions, virtually nothing is known about the impact of EEHV in African elephant range countries. In October 2019, the first African EEHV Workshop was hosted in South Africa to address this question. Primary outcomes of the workshop included the establishment of a working group and a commitment to collect biologic samples.



Photo: Elephant sample collection. © Houston Zoo

Collaborative EEHV research on *ex situ* African elephants in North America will contribute to the validation of non-invasive EEHV sampling techniques for use in free-ranging African elephants, establishing routine monitoring, defining viral patterns, interpreting laboratory results, and developing species-specific treatment protocols.

Overall Vast Positive Impact Zoological Institutions Have Had on EEHV Research and What Roles Institutions Can Play in Future EEHV Work

Until EEHV-HD is fully understood, prevention is not possible, and success will continue to rely on early detection with well-trained calves, experienced elephant husbandry and veterinary staff, a well-informed management team, diagnostic laboratory access with PCR, necessary medical supplies, a robust public relations strategy, and appropriate budget for testing, treatment, and research.

Many EEHV research questions are still unanswered. Factors related to EEHV-HD occurrence and pathogenesis, including the effect of management systems, climate change, geographic location, genetics, and individual immunity need to be evaluated, in addition to continued research on pharmacokinetics and bioavailability of anti-viral medications, the significance of serology results, treatment protocols, and vaccine development.

Zoological institutions have a critical leadership role to play in this work by providing funding, biomaterials, and expertise, as this sets the foundation upon which the lives of elephant calves will be saved, and populations conserved.



Photo: EEHV sample collection.



Photo: Asian elephant calves.



Houston Zoo Unveils South America's Pantanal

Jackie Wallace and Lauren Wappler

Houston Zoo

In October 2020, the Houston Zoo, in the United States of America, unveiled its latest expansion project, the next in a series of new habitats the Zoo is planning, culminating in its 100th anniversary in 2022.

South America's Pantanal at the Houston Zoo, explores the legendary tropical wetlands of Brazil — home to South America's greatest concentration of wildlife. The 4.2-acre multi-species environment is the latest development as part of the Zoo's 20-year master plan, which will see nearly half of the Zoo's acreage redeveloped into experiential zones that highlight wildlife and ecosystems found in Texas and around the world.

"This is the second in a series of projects that are reinventing the Houston Zoo experience to one that focuses on and celebrates places in the world where the Zoo is working to have a positive impact – in Texas with the Texas Wetlands exhibit that opened in 2019; South America's Pantanal now in 2020; and the upcoming Galapagos Islands in 2022," says Lee Ehmke, Houston Zoo CEO and President.

This lush habitat highlights animals the Zoo is protecting in the wild, including giant anteaters, tapirs, and more. South America's Pantanal offers visitors the chance to see these animals along an

immersive and engaging trail that allows guests to view jaguars, capybaras, giant river otters, dart frogs, howler monkeys, anaconda and macaws closer than ever before in Houston.

As guests enter South America's Pantanal, the first animals they encounter are a family of howler monkeys that occasionally burst into a cacophony of the loud vocalisations which give them their distinctive name. Living with the howler monkeys in this habitat are a pair of small, bright orange golden lion tamarins, and on the ground, guests can spy a couple of red-rumped agoutis. These rodents are the "cleanup crew" of South America's forests. Monkeys are messy eaters, so plenty of fruits and nuts fall to the ground for agouti to forage.

Across the path, giant river otters splash in a multi-dimensional streamside habitat. Guests can peer at the otters through crystal-clear acrylic panels that bring them nose-to-nose with the otters above and below water. At one point along the streambank, schools of large tropical fish, stingrays, and turtles can be seen in a sheltered cove, seemingly sharing the stream with the otters.

Next, a green anaconda lies in wait in the water, apparently below the howler monkeys in the gallery forest canopy although safely separated by a hidden

glass panel. In nearby dry-season streambed channels, poison dart frogs hop among the greenery and an emerald tree boa lounges high on a branch.

As guests walk around the bend, they are met with the bright and bold colours of two spectacular and rare South American birds: blue-throated macaws and blue-billed curassows. The Houston Zoo is one of a few zoos in the United States that breed these critically endangered birds, and they are working with colleagues in South America to protect them in the wild.

Guests might feel as if they are being watched from the side and above as they move along the forest trail. And they are! The largest cat species in the Americas, the jaguar, keeps a keen eye on visitors from several vantage points in the new habitat. Jaguars can be seen inside the main habitat or above the path in a fully enclosed jaguar bridge; sculpted by exhibit artists to look like a fallen tree, this jaguar highway allows the cat to move from his behind-the-scenes night house to the spacious new habitat.

As the landscape opens up, guests experience a vista revealing an expansive flooded grassland, home to capybaras, tapirs, rheas, coscoroba swans, crested screamers, and giant anteaters. Here, guests get a rare glimpse into how these different species coexist in their natural habitat. Nearby, adventurous children can have a go at a wobbly cable bridge crossing the flooded pools. Massive termite mounds dot the landscape, and one of them is cut away to allow guests to see how anteaters use their incredible tongues to gather a meal from inside the mound.

A rustic wooden structure recalls the shelters used by the Pantanal's traditional cattle ranchers 'Pantanieros,' offering close-up views of the many inhabitants of the savanna and highlighting the region's unique balance of human use and wildlife habitat.

Rounding out the experience are two large aviaries representing wetland and savanna habitats. In the savanna aviary, guests walk through the space as colourful birds fly above and perch nearby. In this shared space, visitors can see unusual birds like boat-billed herons, wattled curassows and a large flock of boisterous green oropendolas.

“For over a decade the Houston Zoo has been deeply involved in supporting work of our partners to save wildlife in Brazil, Colombia, and other parts of Latin America, so this exhibit helps us bring that story to Houstonians,” Ehmke adds. “We make it clear throughout the exhibit that by visiting the Zoo, guests are helping to make this vital conservation work possible.”

– Lee Ehmke

In the Pantanal region, the Houston Zoo partners with four wildlife conservation organisations, Lowland Tapir Conservation, Projeto Tatu-Canastra (Giant Armadillo Project), Bandeira Rodovias (Anteaters and Highways), and Projeto Ariranha (Giant Otter Project) and has assisted in saving wildlife in the region since 2004. These projects focus on research and monitoring, community development, threat reduction, and capacity building to educate all local Brazilians in the surrounding regions. Through work with local landowners and communities, the programmes also unveil the value of these iconic species as critical components of local ecosystems as well as through the economic impact generated by environmental tourism.

Photo: Coscoroba swans and southern screamers in the Pantanal exhibit.
© Houston Zoo.

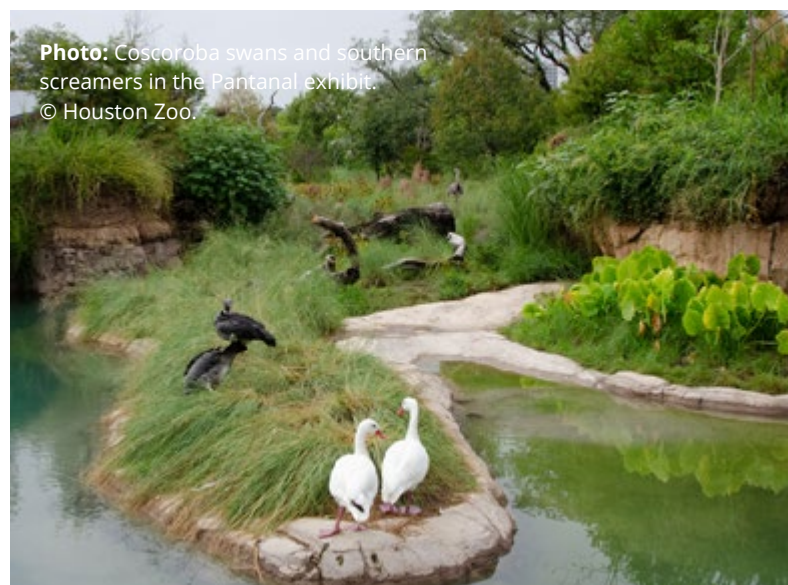




Photo: Guests read interpretation panels at the Pantanal exhibit. © Houston Zoo.



Calling for Submissions for the 2021 WAZA News Magazines

WAZA members, we would love to feature your amazing work, achievements and news in the 2021 WAZA News Magazines.

Please get in touch on communications@waza.org if you would like to submit an article for the future magazines



Update on International Studbooks (ISBs)

Changes between 5 September and 30 November

Published ISBs

- **Cheetah** (*Acinonyx jubatus*), 2019 ed. – Laurie Marker (Cheetah Conservation Fund, Namibia)
- **Gelada** (*Theropithecus gelada*), 2020 ed. – Achim Johann (NaturZoo Rheine, Germany)
- **Indochinese sika deer** (*Cervus nippon pseudaxis*), 2020 ed. – Jan Pluháček (Ostrava Zoo, Czech Republic)
- **Mexican wolf** (*Canis lupus baileyi*), 2020 ed. – Sarah Greely (The Living Desert, United States of America)
- **Vicuña** (*Vicugna vicugna*), 2019 ed. – Christian R. Schmidt (Zoo Zürich, Switzerland)
- **Orangutan** (*Pongo pygmaeus* and *Pongo abelii*), 2019 ed. – Megan Elder (Como Park Zoo & Conservatory, United States of America)

ISB Transfers

- **Clouded leopard** (*Neofelis nebulosa*) – Inter-institutional transfer. Dr Jilian Fazio, the international studbook keeper, is moving from the Smithsonian's National Zoological Park and Conservation Biology Institute (Washington DC, United States of America) to Turtle Back Zoo (New Jersey, United States of America)
- **Malagasy giant jumping rat** (*Hypogeomys antimena*) – Intra-institutional transfer from Gale Glendewar to Mark Beresford (Durrell Wildlife Conservation Trust, United Kingdom).

Would you or someone in your team like to become an International Studbook Keeper? The following studbook is currently vacant:

- **Giant eland** (*Taurotragus derbianus gigas*) ISB

Get in touch with the WAZA Executive Office at conservation@waza.org to find out more.

Studbook Recognitions

WAZA would like to recognise and extend a heartfelt thank you to Lydia Bosley for her 22 years of dedicated service to WAZA as the eastern bongo International Studbook (ISB) Keeper from 1997 to 2019. She has now stepped down from the position, and Nick Davis, from Chester Zoo is currently managing the bongo ISB.

WAZA would also like to recognise and thank Fiona Fiskén for her long-term commitment to assisting with the International Studbooks. Fiona has been involved with the studbooks since 1989, when she started at the Zoological Society of London. In the early 2000s she took on all the background administration related to the ISBs, and has continued to work in collaboration with WAZA, after it took on the official ISB Coordinator role in 2007.

Fiskén has also been the editor of the International Zoo Yearbook for 31 years, providing an international forum for the exchange of information on the role of zoos and aquariums in the



Lydia Bosley



Fiona Fiskén

Photo: The virtual reality experience, adding a new dimension to educational content.
© Immotion Group plc.

WAZA is pleased to have recently welcomed a new corporate member to its global membership base. Immotion Group plc, with offices based in the United Kingdom and the United States of America, joined the international WAZA community in October 2020.



Immotion Group is a global leader in immersive edutainment. By combining educational virtual reality (VR) experiences with state-of-the-art motion-platform technology, Immotion Group gives zoos and aquariums a new attraction that excites and engages visitors of all ages while increasing ancillary revenues. Immotion's VR solutions for zoos and aquariums, featuring live-action and animated educational content guided by marine biologists and wildlife experts, both educate and entertain guests – giving them the immersive experience of a lifetime.

Dr Martín Zordan, Chief Executive Officer of the World Association of Zoos and Aquariums (WAZA), said, "We

are delighted to welcome Immotion Group to the global WAZA community. Immotion Group's virtual reality education and entertainment offerings provide exciting and original content, utilising new methods to engage and inspire guests about conservation and the natural world."

"We are honoured and delighted to join WAZA. Our mission at Immotion is to educate, engage and inspire guests by using cutting-edge technology to bring them closer than ever before to amazing animals in their natural habitats," said Immotion Group Commercial Director, Rod Findley. "We feel our work builds on the conservation and educational efforts that WAZA members dedicate themselves to every day."

The company offers immersive virtual experiences, such as 'Swimming with Humpbacks' – a dynamic education journey, following a marine biologist, which takes viewers deep into the South Pacific Ocean, bringing them face-to-face with some of the most elusive creatures on the planet.



WAZA

*World Association
of Zoos and Aquariums*

www.waza.org

For every edition of WAZA NEWS, the magazine printer, Gràfiques Ferpala, gives WAZA oak trees to plant, as part of their sustainability initiative.

🌱 | 8 Trees planted