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ZOOQUARIA

SUMMER 2025

ISSUE 126

A FEATHER IN OUR CAP

CELEBRATING A HUGE STEP FORWARD FOR THE NORTH AFRICAN OSTRICH EEP

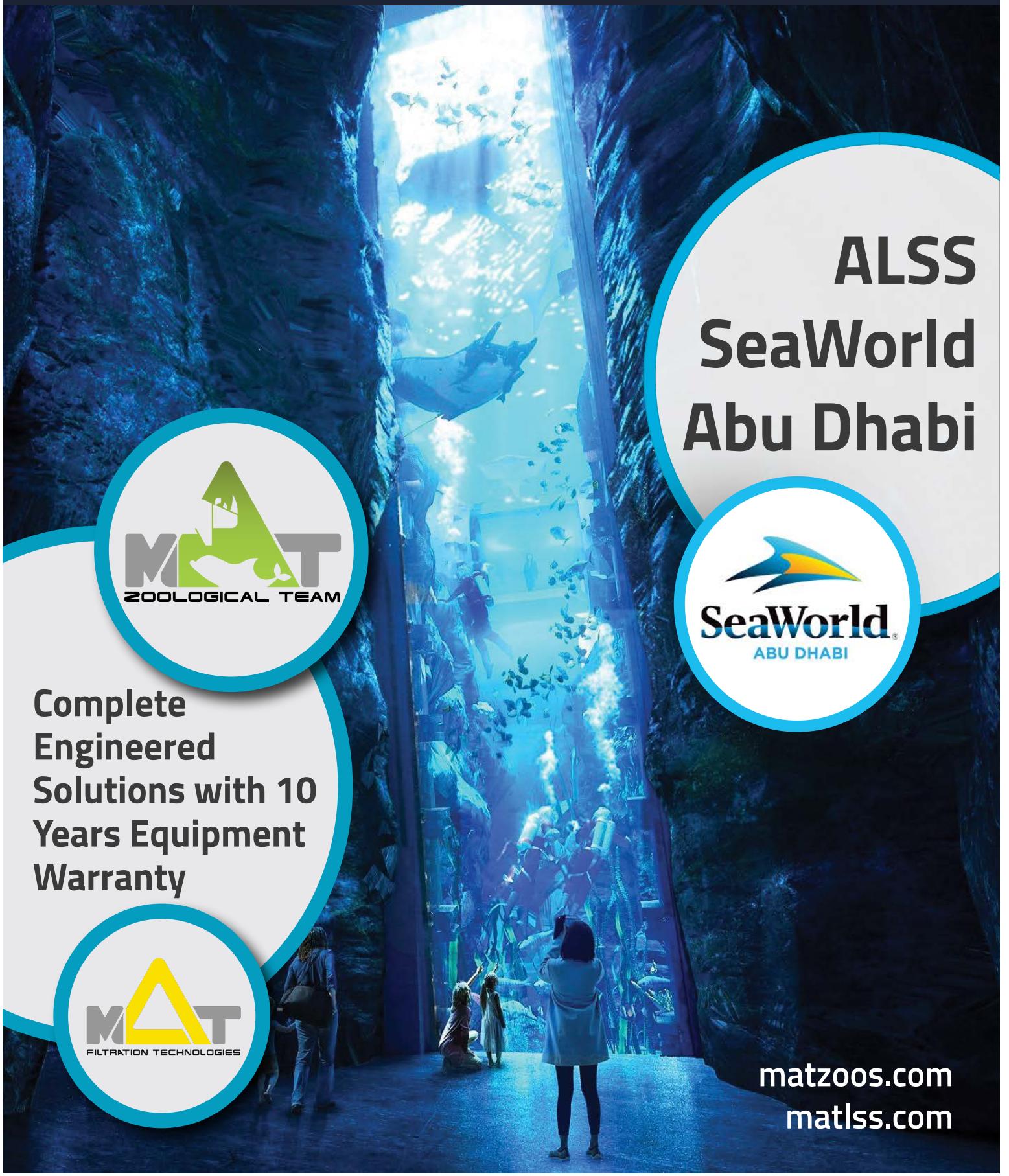
CLEARED FOR TAKE-OFF

LAUNCHING A NEW STRATEGY FOR THE PINK PIGEON

SAVING THE OCEANS

WHY WE ALL NEED TO DEVELOP OUR OCEAN LITERACY

From Inhouse Manufacturing & Supply to Installation & Operations in Zoos & Aquariums



KEY: a quick guide to frequently used acronyms

CITES: Convention on International Trade in Endangered Species
EEP: EAZA Ex situ Programme
IUCN SSC: International Union for Conservation of Nature Species Survival Commission
LTMP: Long-term Management Plan
RSP: Regional Species Plan
TAG: Taxon Advisory Group
ZIMS: Zoological Information Management System

Zooquaria

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FROM THE DIRECTOR'S CHAIR

I am writing this shortly after attending the EAZA Education Conference and EAZA Directors' Days. As always, interacting with our diverse membership brings me new insights, inspiration and a renewed sense of energy and purpose. You can read more about each conference on pages 8 and 10 respectively, but I would like to share my personal thoughts here as well.

My first proper job was as a presenter at Chester Zoo (UK); initially I was helping visitors in the newly opened 'bat cave', and this expanded into giving talks and educational sessions across the whole site. It was lovely to return more than 25 years later to attend the EAZA Education Conference and see how the zoo has developed. Conservation education is firmly embedded in all that Chester Zoo does, and its diverse activities provided an excellent platform for all the conference participants to share their own advances and recommendations about this important area of our work. The programme was packed, and two of my specific takeaways were:

- Ryan Lumber's presentation (Nottingham Trent University, UK) about quantifying connections to nature via pathways or other frameworks. We know instinctively that visiting a zoo or aquarium provides opportunities to get connected to nature. We often hear that feeling connected to nature improves wellbeing and pro-environmental behaviour. But we can struggle to connect and evidence these two aspects. Ryan's presentation shared solutions that can be applied in our zoo and aquarium contexts.

- The strong theme of leadership and empowerment throughout. Whether this be via Youth Boards, volunteer engagement, professional development opportunities, engaging in partnerships for broader representation or how to advance within your own organisation, it is clear that the conservation education sector is open to expanding leadership opportunities and willing to take them on.

The topic of leadership brings me nicely to my takeaways from Directors' Days. The theme this year was 'Reflections on the EAZA Spirit'. It was the best-attended edition so far and it was pleasing to see 170 zoo and aquarium leaders gathering in València (Spain) to reflect on the advancements and challenges from our 2021–2025 strategic period and focus on the direction of travel for the future. There were many thought-provoking presentations from professionals within and outside our membership. We were honoured to have the IUCN Director General, Dr Grethel Aguilar, speak about the value that zoos and aquariums bring to the conservation community and encourage even more of us to get involved. All the presentations provided a platform for productive workshops excellently facilitated by Eoghan O'Sullivan. I know that taking part in workshops brings delight to some and horror to others. I was delighted by the EAZA spirit shown via the participants' high engagement level. Delegates were encouraged to share their views and introduced to the different levels of listening to aid empathetic dialogue.

This meeting also enabled us to thank outgoing EAZA Chair Endre Papp (Sóstó Zoo, Hungary) for his thoughtful and inclusive leadership of EAZA and welcome Christoph Schwitzer (Dublin Zoo, Ireland) to the role. The outcomes from this Directors' Days will provide him and the newly elected Council with a good indication of where EAZA can continue to progress in the next strategic period. You can get to know the new Council more on page 11.

To complete the circle, it is also interesting to note that my very first EAZA meeting was the Education Conference hosted by Oceanogràfic València in 2011. Some might say 'If you hang around long enough, you're sure to return.' I prefer to think of it as the opportunity to reflect and evaluate where I've come from, how far I've travelled and where I go to next – something that applies not only to my personal journey, but also to EAZA as our Association. I encourage you to do the same, and look forward to continued productive dialogue to move us into the future as a strong, united community.

Myfanwy Griffith
Executive Director, EAZA

NOTICEBOARD

EAZA SPRING COUNCIL AND AGM

The EAZA Directors' Days conference was excellently hosted by Oceanogràfic València (Spain) in April (see page 10). The conference included a meeting of EAZA Council and the Annual General Meeting (AGM) of the Association.

COUNCIL DECISIONS

EAZA Council approved the following membership decisions:

New Members

- **Full Membership**: Istanbul National Aquarium, Turkey; Dingle Aquarium, Ireland; Northumberland Zoo, UK
- **Temporary Membership**: Córdoba Zoo, Spain; Jimmy's Farm & Wildlife Park, UK
- **Candidate for Membership**: Shymkent Zoo, Kazakhstan; Baku Zoo, Azerbaijan
- **Extension of Temporary Membership (no change)**: Parc de l'Auxois, France ; Tbilisi Zoo, Georgia (temp. under construction)
- **Associate Membership**: Pelargos Natura, Greece (conservation-based); Zooschweiz, Switzerland (Federation)
- **Corporate Members**: Ny Vraa, Denmark; Immersive Production, USA; Wild Republic, USA

Existing Members

- **Maintain Full Membership & Accreditation**: Gaia Zoo, the Netherlands ; Zoo Augsburg, Germany; Skanes Djurpark, Sweden
- **Extension of Temporary Membership (no change)**: Zoo Eberswalde, Germany; Sofia Zoo, Bulgaria; Tierpark Chemnitz, Germany
- **Withdrawing Members**: Marineland Antibes, France

AGM DECISIONS

Important documents and decisions were approved, including the 2024 draft accounts and financial report, 2026 budget proposal, updates to the EAZA Constitution/Articles of Association because of changes in Dutch law, and recommendations from Council to increase inclusivity and clarity around EAZA structures and decision-making and Council members for the 2025–2028 term (see page 11 to discover your new Council).

Results of the 2024 internal and external audit, progress on the EAZA Strategy 2021–2025, and the minutes of the meeting will be shared with Members in due course.

STRENGTHENING OUR COLLABORATIONS

Working on partnership is a key part of EAZA's vision. We are delighted to have renewed our Memoranda of Understanding (MoU) with: PKBSI (Indonesian Association of Zoos and Aquaria), AZA, IUCN SSC, IUCN SSC Asian Wild Cattle Specialist Group, IUCN SSC Wild Pig Specialist Group and IUCN Cat Specialist Group for the 2025–2050 period.

In addition, the following new Memoranda were recently approved:

- MoU between EAZA and Rewilding Spain (2025–2035) re Przewalski's horse collaboration
- MoA between EAZA, Kenya Wildlife Service (KWS), and Mount Kenya Wildlife Conservancy (MKWC) (2025-2030) regarding conservation and recovery of mountain bongo

EAZA also became a member of the Global Genome Biodiversity Network (GGBN).

VALUE-ADDED TAX UPDATE

The recent financial audit identified that EAZA now needs to register as a Value-Added Tax (VAT) identity. This means that EAZA has started applying VAT related to its services – for example, invoices for membership fees, events and *Zooquaria* subscriptions – in order to comply with Dutch legislation.

The level of VAT applied depends on the location (the Netherlands/ other EU Member State/outside the EU) and VAT status of the recipient. If you have not done so already, please share your VAT number with the Executive Office via info@eaza.net so that we can apply the correct tax regimen to your invoices.

EAZA CORPORATE MEMBERS

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ABC Rides
Africa Style
Alter Media
Animals Concept
Aqua-Sander
Arie Blok Animal Nutrition – Kasper Faunafood
ArtSystemDeco
Billings Productions, Inc
Bio/Zoo Information
Brogaarden ApS
Bureau d'étude AKONGO
Bureau d'études Bioparc
Carl Stahl ARC Design & Build
China Light Festival
Convious
Crossborder Animal Services BV
Digitickets
Dino Don
Dorset Identification BV
EKIPA
Evasion Jeux
Fachjan Project Plants
Fahlo
Fox Consulting
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SAS Zoopoli France
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Triotech
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Zoologistics
Zooprofis

DONATION TO EAZA = TAX DEDUCTION

Did you know that EAZA is registered as a public benefit organisation in the Netherlands? As EAZA has the 'ANBI' status (Algemeen Nut Beogende Instelling), your donation to us may qualify for a tax deduction even if you don't reside in the Netherlands. Please consult your local tax authority to enquire about deductibility in your country. EAZA's fiscal number/RSIN is 8163 55 460 L01.

To learn more about these benefits, please visit the Dutch Tax and Customs Administration and contact us at info@eaza.net for bank details.

NEW ARRIVALS

NORTH AFRICAN OSTRICH EEP WELCOMES ITS FIRST EVER NATURALLY INCUBATED CHICKS


© ANTOINE JORIS, SIGEAN AFRICAN RESERVE

IN OCTOBER 2024, Sigean African Reserve (France) and the North African ostrich EEP were delighted to announce the hatching of six ostrich chicks, the first in the programme to be incubated by their parents.

A subspecies of the common ostrich, the North African ostrich (*Struthio camelus camelus*) has been assessed by the IUCN together with the other two existent subspecies as 'not endangered' – a categorisation that does not reflect the actual threat to the survival of these impressive birds. Expert opinion estimates that the North African ostrich has disappeared from more than 99% of its original distribution area, and that the entire population comprises fewer than 1,000 birds. CITES, however, accords all North African populations the highest conservation status.

In 2011, to raise awareness of the North African ostrich and contribute to its protection, EAZA launched an *ex situ* breeding programme for the subspecies, initiated and coordinated by Hannover Zoo (Germany) and founded on a shipment of hatching eggs from Morocco. Currently comprising around 50 birds, the EEP is still relatively modest and the need for offspring is keenly felt. Some chicks have hatched in recent years, but they were all artificially incubated, and just one chick was hatched by foster parents – so this success is an even happier event!

Sigean African Reserve plays a crucial role in the EEP as currently the only zoo to keep several ostrich males together. The zoo also keeps a breeding trio: the cock bird, hatched in Hannover in 2017, has been at Sigean since 2023; the older hen is eight years old and the younger hen hatched at Sigean in 2021.

This was the trio's second clutch of eggs in 2024. The first was laid in March and April but was removed by the keepers due to inclement weather, and although the eggs were transferred to an incubator, no chicks hatched. Once the trio had 'taken a break', laying started again and the team's hopes were fulfilled when, between 27 and 30 July, six healthy chicks hatched from 15 eggs, which were all naturally incubated by the parents.

The season probably made a difference and it's likely that the high summer temperatures and dry ground were more suitable to ostrich breeding than cooler and wetter spring weather conditions. Having hatched the clutch, the cock bird and the younger hen are now attentively raising the chicks. Out of the six chicks, five are males and genetic lineage testing showed that both adult females had laid fertile eggs in the nest.

The year 2024 has also seen chicks hatched at Jerez Zoo (Spain), and Vienna Zoo (Austria) – one could say that 2024 has been a very good year for ostriches and we hope 2025 is heading in the same direction!

MANED WOLF PUPS ARRIVE AT BANHAM ZOO

ON 16 JANUARY 2025, Banham Zoo (Zoological Society of East Anglia, UK) was delighted to welcome four maned wolf pups (*Chrysocyon brachyurus*), born from a young pair – female Enya is four years old and male Thiago is three years old.

Having witnessed the mating behaviours and a copulatory tie early in November, the team waited with bated breath for their first litter to be born. To ensure the wolves' house had minimal disturbance, they had installed CCTV in the dens in August 2024 so that they could monitor them discreetly. This paid off, as the team got to witness the special moments of the pups' birth and their first interactions with the parents.

The CCTV also gives us insight into their natural behaviours, watching the pups fight and tumble, honing their skills for adult life. Enya continues to do brilliantly with her first litter and it has been a delight to witness Thiago's interactions with the pups. He is extremely interested in them and it has been amazing to see how attentive, protective and dedicated he is as a father.

Being such unique animals, the maned wolves have featured heavily in Banham Zoo's education programme over the years, as it aims to connect people with these amazing creatures and inspire the next generation of conservationists, biologists and keepers. They are currently providing visitors with a daily maned wolf talk, delivered by the

YOUNG MARGAY BORN AT SHALDON WILDLIFE TRUST

ON 13 OCTOBER 2024, a baby margay (*Leopardus wiedii*) was born at Shaldon Wildlife Trust (UK), the fourth kitten born at the zoo in as many years. Margay have been present at Shaldon Wildlife Trust since the 1980s, but more recently the Trust cared for a breeding pair, called George and Josefien, which arrived from Artis Zoo (the Netherlands) in 2013. A new habitat was built for the species at the zoo in 2020, with an off-show birthing area and two outside areas to allow separation should it be needed.


© SHALDON ZOO

The pair produced a young male seven years ago. He was called Harley in honour of Sam Harley, the EEP coordinator for the species. In 2019, female Lucia – born in Randers Regnskov (Denmark) and of the same age as the male – arrived at Shaldon Wildlife Trust. They are the parents of the current kitten.

Margay are small, nocturnal wild cats native to Central and South America. They are currently listed as Near Threatened by the IUCN. The EEP population is quite small, comprising 46 individuals at 21 institutions, and breeding is relatively limited, with only four births recorded in the last 12 months. This means that births like this one are incredibly important to keep the EEP moving forward.

As Lucia is an experienced mother, the team have been relatively hands-off following the birth, monitoring the kitten remotely and even using a phone on a selfie stick to peek into the nest box if needed. When the kitten was just over eight weeks old, the team caught it for its first set of vaccinations and found out the sex. It is a female, meaning that two males and two female kittens have been born at the zoo in recent years. She weighed a healthy 700g and wasn't too pleased to meet the vet for the first time.

Following the recent death of one of the charity's former employees and trustees, it felt right to name the kitten in her memory, so our latest margay kitten is called Juliet after Julie Matthews, our former Education and Research Officer.

The breeding success of margay at Shaldon Wildlife Trust has seen previous offspring being sent to Berlin Zoo (Germany), Le Parc des Félins (France) and Port Lympne Wild Animal Park (UK) to create new breeding pairs and help grow the relatively small EAZA population. Small cats don't get anywhere near as much as attention or funding as big cats, so it's a great pleasure that one of the smallest EAZA Members can help contribute to margay conservation.

education team, which is proving very popular – although the pups have yet to make an appearance!

As well as these births being brilliant news for the zoo itself, and very popular new additions for our visitors, this is vital work for the species, the EEP and its LTMP.

Maned wolves are currently classed as Near Threatened on the IUCN Red List, although there is concern that their wild populations are decreasing, and further concern over local extinctions. Therefore, ensuring a genetically diverse *ex situ* population is critical.

Having recently carried out the pups' first vaccination and hands-on health check, the team at Banham are delighted to confirm they have one male and three females. They are excited to continue to watch the wolf family thrive and look forward to their future placements within the EEP to continue the great work of ensuring the survival of this species.


© ALEX LAYZELL

Educators of the world unite!

THE EAZA EDUCATION CONFERENCE 2025 BROUGHT CONSERVATION EDUCATORS FROM ACROSS THE WORLD TO CHESTER ZOO FOR AN INVALUABLE AND INSPIRING EVENT

Sally Binding, Academy Manager, EAZA Executive Office

With Chester Zoo (UK) expertly positioned at the hosting helm, the EAZA Education Conference 2025 was delivered in fantastic style on 17–21 March. The largest to be held so far, it attracted 241 participants (200 in person, 41 online), representing 119 institutions (84% EAZA Members, 16% non-Members), from 42 countries. The hybrid programme was full to the brim with presentations, posters, workshops, plenaries, reflection sessions, a panel discussion, a virtual Chester Zoo education tour and Q&A session and even a Chester Zoo takeover event, with multiple education-in-action events occurring all over the zoo.

Across the conference days, the themes of 'Wellbeing & Nature Connection', 'Contributing to Global Agendas & Evidencing Impact' and 'Leadership, Youth Voice & Finding New Ways' shone through, sparking discussions, inspiring action and uniting educators within the essential roles they play in conservation. A special welcome address from Judy Mann-Lang, President of the International Zoo Educators Association (IZE), on 'Educating for Action – the Collective Power of IZE' kicked off the proceedings, and participants were treated to three plenary sessions.

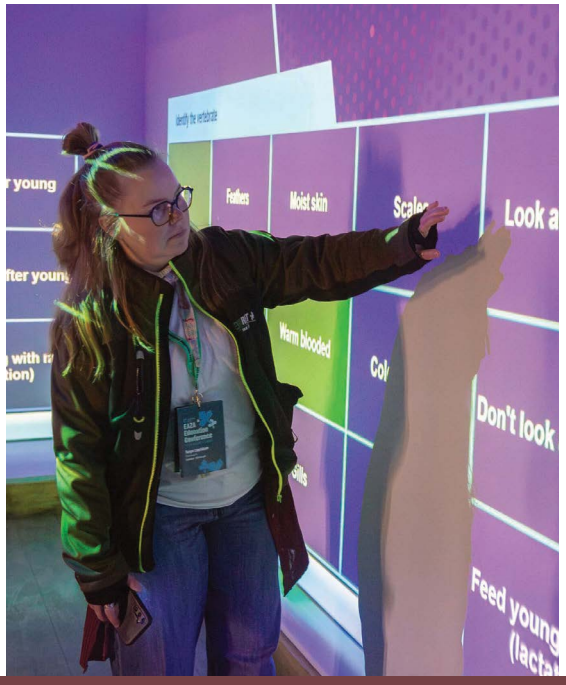
CONFERENCE STATISTICS

- **24** presentations
- **16** posters
- **14** workshops
- **3** plenaries
- **3** reflection sessions
- **1** panel discussion
- **1** virtual Chester Zoo education tour and Q&A
- **1** Chester Zoo takeover event

Diana Garlytska (IUCN Youth Advisory Committee Chair and IUCN Commission on Education and Communication Regional Vice Chair for West Europe) discussed the 'IUCN Commission on Education and Communication: Invitation to Join.' Arianna Abdul-Nour (Project Manager from Island Innovation) spoke on 'Empowering Future Leaders: the Role of Zoos and Aquaria in Bridging Global Conservation and Youth Voice'. Ryan Lumber (Nottingham Trent University, UK) delivered on 'Towards a True Zootopia: the Role of Zoos and their Wildlife in Promoting Nature Connectedness for their Visitors' Wellbeing and Pro-Nature Behaviours'.

DEBATES AND DISCUSSIONS

The Education Leadership Panel and Delegate Discussion session sparked debate and conversation, with questions coming in both from in-the-room participants and from our online



ALL PICS © DAVID HUGHES, CHESTER ZOO

participants, as five leaders with experience and/or pivotal roles to play in directing organisations in education strategies opened the session.
The panellists were Jamie Christon (Chester Zoo), Esme Ward (Manchester Museum, UK), Karen Fifield (Te Nukuao Wellington Zoo, New Zealand and WAZA President), Christoph Schwitzer (Dublin Zoo, Ireland) and Myfanwy Griffith (Executive Director of EAZA). The conversation centred on whether educators are represented enough at a leadership level and why and how can we act to change this if they aren't. Panellists shared their experience as educators and leaders and how to raise the representation of educators within an organisation.

A packed social programme accompanied the conference sessions, with a boat trip and quiz night, a Chester city ghost tour, group dinners, lunchtime activities of nature photography and wildlife sound recording, an icebreaker evening, a hosted educators' study trip to the city of Liverpool, and a farewell dinner with plenty of dancing and much laughter over the fantastic animal anatomy quiz!

LASTING OUTCOMES

We hope that the participants came away from the conference with a revived shared unity and feeling of support from within and outside our educators' community; and that the outcomes of the conference have been to:

- inspire educators to step into leadership roles and represent conservation education at the highest levels;
- understand the link between nature and wellbeing at a deeper, scientifically evidenced level, and for educators to be able to use this as part of their conservation education strategies;
- hear the youth voice in conservation education, and do all that we can to ensure that the youth voice is heard by those who need to hear it;
- recognise the importance of us all contributing to global conservation education agendas and the difference that we can all make; and ensuring our impact is evidenced through science so that we can use our time, energy and resources to have the greatest impact.

LOOKING FORWARD TO 2027

The EAZA Conservation Education Committee (CEC) and EAZA Executive Office would like to thank all those who contributed to the EAZA Education Conference 2025, and to Chester Zoo for their incredible hosting. A call for hosts for the 2027 Education Conference will soon be announced. Please e-mail Sally Binding (sally.binding@eaza.net) if your organisation is interested.

A sea of ideas

EAZA DIRECTORS' DAYS 2025 BROUGHT A WAVE OF ENTHUSIASM TO VALÈNCIA

Tomasz Rusek, Director of Advocacy and Communication, EAZA Executive Office

From 1–4 April, the EAZA Directors' Days 2025 took place at Oceanogràfic València (Spain). Together with the Annual Conference, Directors' Days are EAZA's main annual event, bringing together the leaders of member institutions from across the EAZA region. This year's edition welcomed a record 170 delegates from 123 institutions from 32 countries.

After a heartfelt welcome by representatives of Oceanogràfic and València's City of Arts and Sciences, the conference kicked off with the election of EAZA's governing bodies for the 2025–2028 term. The Annual General Meeting approved the new EAZA Council (see opposite page), which unanimously elected Christoph Schwitzer, CEO of Dublin Zoo (Ireland), as the new EAZA Chair. He took over from Endre Papp, Vice Director of Zoology at Sóstó Zoo (Hungary), who led EAZA in 2022–2025. Stay tuned for an interview with Christoph Schwitzer in the next issue of *Zooquaria*, as a preview of his aspirations for EAZA.

With the International Union for Conservation of Nature (IUCN) being one of EAZA's main gateways to conservation, we were honoured to welcome IUCN Director General Grethel Aguilar as our keynote speaker. Within IUCN, the Species Survival Commission (SSC) is particularly relevant for EAZA's work. Many experts from the EAZA community lead or contribute to SSC's specialist groups, and several Members are hosting SSC's new Centres for Species Survival. Moreover, in preparation for the IUCN World Conservation Congress (Abu Dhabi, 9–15 October 2025), EAZA is co-sponsoring several motions for IUCN resolutions that will shape the organisation's upcoming strategic priorities.

Building on this collaboration, Grethel Aguilar outlined the opportunities for even closer engagement between IUCN and the EAZA community as a key conservation partner. IUCN membership fees are now more favourable for zoos and aquariums (and other venue-based organisations), creating a strong opportunity for more EAZA Members to join and officially become part of the world's largest conservation network.

FACING FUTURE CHALLENGES

In sessions and workshops held over the following two days, participants discussed EAZA's progress and the challenges of the 2021–2025 strategic period. They charted possible future directions and explored ways to become more involved in EAZA activities – from coordinating EAZA Ex situ Programmes (EEPs) and working in Taxon Advisory Groups (TAGs), to becoming screeners in EAZA accreditation, sharing expertise in the EAZA Academy, and collaborative advocacy and lobbying. Discussions also touched on the evolving social licence of modern zoos and aquariums, providing valuable insights for shaping the next strategic plan. An important session looked at the past, present and future of animal population management in EEPs; you will read more about it from EEP Committee Chair Brian Zimmerman in the next *Zooquaria*.

The meeting also highlighted the power of collaborative communication. Guest speaker Sharon Dewar (Public Communications, Inc., USA) underlined the importance of harmonising messages across the broad spectrum of tasks undertaken by EAZA Members. This was followed by 'Communication as a bridge between conservation and the public', a presentation in which Oceanogràfic detailed their transition in communications from a leisure attraction to a scientific and conservation organisation. Finally, participants were introduced to the EAZA Accreditation Infopack, a new tool designed to help them communicate their EAZA accreditation as evidence of their commitment to high standards in animal care and welfare, conservation, research and education. Members accredited in the new cycle will find the infopack in their mailboxes!

EAZA Directors' Days 2025 was generously sponsored by our Corporate Members: Immotion, Africa Style, ABC Rides Switzerland, Triotech, Carl Stahl ARC Design & Build and Immersive Productions. We extend our deepest thanks to our hosts at Oceanogràfic València for their warmth, hospitality and perfect orchestration of the event.

EAZA Directors' Days 2026 will be held on 13–17 April at Beekse Bergen Safari (the Netherlands).

EAZA Council 2025–2028

EAZA welcomes the following elected representatives of Council and Executive Committee for the 2025–2028 term. The main role of the Council is to act as the representative governing body of the Members of EAZA.
Their key goals are to:

i) represent the best interests of EAZA Members as they pertain to EAZA as an Association;
ii) act as a two-way information channel between individual EAZA Members and EAZA as an Association to enable collaborative understanding and achievement of EAZA's strategic goals and compliance with EAZA Codes and Standards; and
iii) prepare for, respectfully discuss, and vote on all policy matters.

For more information, read the Terms of Reference available on the EAZA Member Area.

COUNCIL MEMBERS

COUNTRY	INSTITUTION	NAME
Austria (1)	Schmiding Zoo	Andreas Artmann
Belgium (1)	KMDA Antwerp Zoo	Linda Van Elsacker
Croatia (1)	Zagreb Zoo	Davorka Maljković
Czech Republic (2)	Ústí nad Labem Zoo	Ilona Pšenková*
	Prague Zoo	Miroslav Bobek
Denmark (2)	Givskud Zoo	Rasmus Nielsen
	Aalborg Zoo	Henrik Johansen
Estonia (1)	Tallinn Zoo	Kaupo Heinma
Finland (1)	Helsinki Zoo	Sanna Hellström*
France (6)	Beauval Zoo	Eric Bairrão Ruivo
	Calviac Zoo	Emmanuel Mouton
	Zoo Boissière du Doré	Sébastien Laurent
	Amiens Zoo	Xavier Vaillant*
	Zoo de Guyane	Angélique Chaulet
	Paris Zoo	Pierre-Yves Bureau
Germany (5)	Frankfurt Zoo	Christina Geiger
	Leipzig Zoo	Jörg Junhold*
	Berlin Zoo	Andreas Knieriem
	Wilhelma Zoo	Thomas Kölpin*
	Halle Zoo	Dennis Müller
Greece (1)	Attica Zoo	Jean-Jacques Lesueur
Hungary (1)	Sóstó Zoo	Endre Papp
Ireland (1)	Dublin Zoo	Christoph Schwitzer*
Israel (1)	Jerusalem Zoo	Nili Avni-Magen
Italy (2)	La Torbiera Zoo	Gloria Svampa
	Parco Natura Viva	Cesare Avesani Zaborra
Kuwait (1)	The Scientific Centre	Hussain Al Sayegh
Latvia (1)	Riga Zoo	Anete Bilzēna
Luxembourg (1)	Parc Merveilleux	Guy Willems
Netherlands (2)	Rotterdam Zoo	Erik Zevenbergen
	Artis Zoo	Rembrandt Sutorius
Norway (1)	Aalesund Atlantic Park	Kjetil Aarseth
Poland (1)	Gdańsk Zoo	Izabela Krause
Portugal (1)	Santo Inácio Zoo	Teresa Guedes
Slovakia (1)	Košice Zoo	Erich Kočner
Slovenia (1)	Ljubljana Zoo	Barbara Mihelič
Spain (2)	Bioparc València	Daniel Pons
	Oceanogràfic València	Eduardo Nogués
Sweden (2)	Borås Zoo	Jeanette Lindström
	Universeum	Daniel Roth
Switzerland (1)	Zürich Zoo	Severin Dressen
Turkey (1)	Eskişehir Zoo	Nurben Koptekin
United Arab Emirates (1)	Arabia's Wildlife Centre	Johannes Els
United Kingdom (5)	RZSS Edinburgh Zoo	David Field
	ZSL London Zoo	Malcolm Fitzpatrick
	Twycross Zoo	Becca Biddle*
	Cotswold Wildlife Park	Reggie Heyworth
	Wingham Wildlife Park	Scott Binskin

** Executive Committee*

COMMITTEE CHAIRS (WITH AN OBSERVER STATUS IN COUNCIL)

Communication Committee	*To be filled*
Conservation Committee	Simon Bruslund, Copenhagen Zoo
Conservation Education Committee	Antonieta Costa, Lisbon Zoo
Research Committee	Zjef Pereboom, KMDA Antwerp Zoo
Technical Assistance Committee	*To be filled*
Veterinary Committee	Mads Frost Bertelsen, Copenhagen Zoo

EXECUTIVE COMMITTEE

FROM LEFT TO RIGHT: BRIAN ZIMMERMAN (EEP COMMITTEE CHAIR), SANNA HELLSTRÖM, WINEKE SCHOO (NATIONAL ASSOCIATIONS COMMITTEE CHAIR), ILONA PŠENKOVÁ, JÖRG JUNHOLD (TREASURER), BECCA BIDDLE (VICE CHAIR), CHRISTOPH SCHWITZER (CHAIR), THOMAS KÖLPIN (MEMBERSHIP AND ETHICS COMMITTEE CHAIR), XAVIER VAILLANT (SECRETARY). ABSENT: MAX JANSE (AQUARIUM REPRESENTATIVE)
© EAZA

Dietary inspiration

SESSIONS AT THE 13TH EUROPEAN ZOO NUTRITION CONFERENCE COVERED EVERY TOPIC FROM CALCULATING NUTRIENT REQUIREMENTS TO USING DIET TO HELP LOCAL BIODIVERSITY

Lauren Florisson, Animal Programmes and Conservation Coordinator, EAZA Executive Office

The 13th European Zoo Nutrition Conference was held on 23–26 January 2025 at Apenheul Primate Park (the Netherlands). This highly anticipated and visited event is organised every two years by the EAZA Nutrition Working Group (ENG).

The pre-conference EAZA Academy workshop saw more than 80 eager participants learning about the basics of zoo animal nutrition. There were presentations and hands-on activities on nutrient requirements and how to calculate them, including from Heidi Bissell (The Walt Disney Company, USA), who gave a practical session about the Zoo NaviGator software. Following this workshop, the conference was officially opened with the icebreaker.

On the first morning, Roel Welsing (CEO of Apenheul) and Lauren Samet (ENG Chair from Marwell Wildlife, UK) welcomed all 199 conference participants. The session's presentations focused on great apes and primate species, including Anouk Fens' (Apenheul) 10-year overview of dietary management in Apenheul, presenting their move from feeding fruit to a more natural diet.

After a mouthwatering lunch, keynote speaker Heidi Bissell gave an excellent presentation on how aquariums feed dolphins and orcas. Kerry Hunt (SEALIFE, UK) then discussed octopus nutrition, and the day concluded with a brainstorm session on the future of zoo nutrition research from Oliver Pritchard Moore (University of Exeter, UK) giving delegates plenty of information to digest over the evening.

Day two started with the visit of empty and closed-to-visitors Apenheul for wintertime. The very knowledgeable volunteers, keepers and even the curator functioned as tour guides and took delegates to different themed zoo stations where, among other topics, they talked about how much UVB light can filter through different materials and how you can store your browse for winter time. There was also a practical demonstration of a puzzle feeder by one of the Bornean orangutans (*Pongo pygmaeus*) next to one of the zoo stations, where delegates could try to use it with a stick. Needless to say, the orangutan was better than the humans at figuring out how to work the feeder.

After a refreshing and educative morning, delegates had lunch and dived into the afternoon programme, starting with three presentations on the effects of fasting and gorge days – unlimited feeding – on three species of big cat. Lauren Samet then gave an overview of how current dietary practice for red pandas (*Ailurus fulgens*) relates to potential disease management in the population. There was also an excellent presentation about how frogs use protein and amino acids.

Other highlights of the afternoon included the unique case of sand-eating Grevy zebras (*Equus grevyi*) in Kolmården Wildlife Park (Sweden) and the diets of rhinoceroses in zoos. The second day ended with ENG long-term member Tjalling Huisman (Van Hall Larenstein, the Netherlands) presenting a 25-year historic overview of the Working Group from its very beginning. Although much has changed since, the commitment of the Working Group members and the passion that drives them to support EAZA Members with nutritional expertise has remained the same. This gave the delegates a lot of food for thought before the gala dinner.

The last day kicked off with a insightful presentation by Tobias Debeuf (Pakawi Park, Belgium) on how we can contribute to local environment biodiversity protection by using invasive species in the diets of animals kept in zoos. The topic sparked some debate. ENG member Marcin Przybyło (Krakow University of Agriculture, Poland) then talked about zoo nutrition and nutritionists in Eastern Europe. The last section of the morning saw many great presentations about the importance of vitamin D in primate species.

As usual, the European Zoo Nutrition Conference did not disappoint in showing the breadth and quality of the work zoos and aquariums are involved in, as well as the importance of nutrition in all taxa. We want to thank the amazing team at Apenheul for their excellent hosting, the ENG for the inspiring programme, presenters for their passion and knowledge-sharing and, of course, the delegates for joining another successful edition of this event.

Stand together for Vietnam

A VITAL CALL FOR GLOBAL CONSERVATION ACTION: JOIN THE EAZA VIETNAMAZING CAMPAIGN NOW!

Theo Pagel, Cologne Zoo and Jörg Junhold, Leipzig Zoo, Co-Chairs of the Vietnamazing Campaign

At the beginning of this year, the United States Agency for International Development (USAID) unfortunately halted its foreign aid and development assistance worldwide. This decision has left a significant gap in funding for nature conservation, especially in Vietnam. With hundreds of millions of dollars now unavailable for conservation efforts, the role of zoos and aquariums in global conservation has never been more crucial.

The urgency of the EAZA Vietnamazing conservation campaign has never been more pressing. This campaign is a collective effort by the entire community, functioning as a catalyst to support the preservation of Vietnam's spectacular wildlife, and **we are calling every EAZA Member to join us and act!**

Vietnam, often referred to as a biodiversity hotspot, is home to a wealth of species that are facing the dual threats of poaching and habitat destruction. These species are further endangered by the rapid economic development that the country is undergoing. While economic growth benefits many, it has profound consequences for the natural world. The Vietnamazing campaign therefore aims to protect Vietnam's unique species and ecosystems through a collaborative One Plan Approach integrating *in situ* and *ex situ* conservation efforts.

The Vietnamazing campaign has built bridges between EAZA Members, Vietnamese organisations and international partners to strengthen conservation planning, enhance education and support habitat restoration efforts. This collaborative network ensures long-term, impactful conservation partnerships. By participating, you not only contribute to the protection of Vietnam's biodiversity, but also raise global awareness of the challenges faced by the country's wildlife.

In October 2024, at the EAZA Annual Conference in Leipzig, we drew attention to the urgent need for more support. Thank you so much for your generous donations on stage that day and throughout the year. As we enter the second half of the campaign, we have raised more than €200,000 to fund projects targeting highly endangered species in Vietnam But we cannot stop there. Our collective goal must be to raise even more funds to fill the gap left by the cessation of USAID funding.

Flagship species such as the Critically Endangered Vietnamese pheasant (*Lophura edwardsi*), the micro-endemic Vietnamese giant magnolia snail (*Bertia camojiensis*), and the Nuichua stick insect (*Nuichua rabaeyae*) are at the heart of the campaign. Even if your institution does not care for these specific species, chances are that you house related species – other pheasants or insects – whose conservation can also be promoted through this campaign. So we encourage all EAZA institutions to raise their hands in support and show their commitment to Vietnam's biodiversity.

By focusing on the strengths of the EAZA community and applying the One Plan Approach, we can make a lasting difference to the conservation of Vietnam's endangered species and their ecosystems. Now more than ever we need EAZA to stand strong in the global conservation community. Let us show the world that together we can make a difference.

Join the Vietnamazing campaign today by visiting https://vietnamazing.eu/be_part_of_it-vietnamazing or scanning the QR code. **Your support matters!**

DONORS AT EAZA ANNUAL CONFERENCE IN LEIPZIG © CHRISTIAN MÜLLER

Stronger together

JOINING AND COLLABORATING WITH IUCN HAS NOT ONLY SIGNIFICANTLY INCREASED EAZA'S IMPACT ON SPECIES CONSERVATION, BUT ALSO BROUGHT MANY OTHER BENEFITS TO EAZA AND ITS WORK

Merel Zimmermann, Field Conservation Coordinator, and Danny de Man, Deputy Executive Director, both EAZA Executive Office

The International Union for Conservation of Nature (IUCN) is the global network focused on protecting nature and biodiversity, of which EAZA has been a proud member since 2005. EAZA Members can apply for membership of IUCN and gain access to expertise and scientific knowledge and resources for better conservation efforts. At the date of writing (April 2025), 51 EAZA Member (and affiliated) institutions are IUCN members, and we hope this will keep increasing in the coming years.

EAZA has been collaborating with the IUCN Species Survival Commission (SSC), one of the many structures within IUCN, for many years. In return, the SSC strongly believes in the important role that zoos and aquariums play in species conservation, as confirmed by the IUCN SSC Position Statement on the role of botanical gardens, zoos and aquariums in species conservation, published in 2023.

Dr Grethel Aguilar (IUCN Director General) joined this year's EAZA Directors' Days as keynote speaker. She presented the work of IUCN and emphasised again the key roles that zoos and aquariums have, stressing our unique power to connect people with nature and recognising that without zoos and aquariums and other *ex situ* conservation organisations, IUCN would not be able to be fully effective in conservation assessment, planning and action.

In the past 10 years, the EAZA Taxon Advisory Groups (TAGs) have significantly built and strengthened their relationship with their respective IUCN SSC Specialist Groups, which has been essential for the success of our new population management structure.

Furthermore, EAZA is a proud co-editor of the IUCN SSC Guidelines on biobanking for conservation, which will come out in 2025.

USING YOUR INFLUENCE

Next to being part of an expertise and knowledge network, IUCN membership also provides the opportunity to connect with global conservation groups, governments and stakeholders as well as help shape international conservation policies and frameworks that contribute to advancing biodiversity conservation worldwide. The network has enabled zoos and aquariums to build consortiums to, for instance, win funding for conservation action on the ground.

The IUCN Motion process is the democratic tool used to influence global conservation policy and guide the entire conservation community, including the One Plan Approach linking *ex situ* and *in situ* to help threatened species. A Motion is a suggestion or proposal made by IUCN members about how to improve the protection of nature. Motions are then voted on by the IUCN membership, and rejected or adopted. If adopted, Motions become Resolutions or Recommendations. These in turn guide conservation actions by countries and organisations, influence international environmental policies and help to raise awareness and funding for specific issues.

The IUCN World Conservation Congress is THE global event where people from all over the world—representing governments, NGOs, scientists, and businesses—come together to talk about these Motions. There is also room to share ideas, strategies and actions, and for organisations to showcase their conservation efforts and connect with others working towards similar goals.

An important element of this Congress is the final agreement on all the submitted Motions, which happens through voting during the Members' Assembly at the end of the Congress.

EAZA has co-sponsored the following IUCN Motions in 2025

- MOTION 027 - Establishment of a marine biodiversity conservation area in Macaronesia
- MOTION 048 - Nature crime
- MOTION 052 - Preventing, combating and strengthening international cooperation and technical assistance to address environmental crimes
- MOTION 088 - Task Force on exploring standardised genetic diversity assessments
- MOTION 098 - Advancing the One Health approach for biodiversity, health and global cooperation
- MOTION 099 - Implementation of One Health, from global to local
- MOTION 111 - Urgent action to address the Asian wild pig crisis caused by African swine fever
- MOTION 112 - Scaling collaborative action for threatened freshwater fishes through *ex situ* conservation

Read more about what these Motions call for at:
https://iucncongress2025.org/assembly/motions

FLASHBACK TO THE IUCN WORLD CONSERVATION CONGRESS 2020

During the last IUCN World Conservation Congress in Marseille (France), EAZA was represented and publicly supported (sponsored) two Motions on law enforcement in the commercial trade in tigers and tiger parts, and the trafficking of songbirds, in line with the Silent Forest campaign's priorities. Both Motions were adopted and became Resolutions to which the organisations involved committed resources to progress.

The Resolution 103: Action against Asian songbird trafficking addresses the severe threats posed by the global trade in Asian songbirds, which has led to significant declines and local extinctions of various species. With

A MESSAGE FROM IUCN COUNCIL CANDIDATE ANN-KATRINE GARN

Hello! I am Ann-Katrine Garn (Copenhagen Zoo, Denmark) and as standing candidate for IUCN Council for West Europe, I am dedicated to making the IUCN a stronger, more united organisation, capable of addressing global conservation challenges through collective action. If I am voted in, I am hoping to also strengthen the position of zoos and aquariums within the IUCN community and show how important our community is for conservation action.

My conservation journey began with a focus on species and habitats, but with over 25 years of experience, I have found that effective conservation is deeply rooted in people and collaboration. I've been involved with IUCN since 2008, when I became Copenhagen Zoo's representative on the Danish National Committee of IUCN. After becoming the Chair of the National Committee, I was lucky enough to be given the task of increasing Copenhagen Zoo's involvement within IUCN. My work with IUCN reflects this understanding as I am actively engaged in initiatives aimed at strengthening the Union and building the relationships that are essential for the IUCN community to thrive. As Secretary of the IUCN Global Group for National and Regional Committee Development and Co-Secretary for the IUCN Interregional Committee for Europe North and Central Asia (ICENCA), I have shown how fostering collaboration among IUCN members provides opportunities to connect, to feel part of the Union, and to develop joint solutions to conservation challenges. As Chair of the National Committee of Denmark, I have successfully led numerous conservation projects, and this work has also improved Denmark's reporting and initiated international conservation commitments.

the help of EAZA, during the 19th Conference of the Parties to CITES (CoP19 – Convention on International Trade of Endangered Species) in November 2022, the white-rumped shama (*Copsychus malabaricus*) was added to CITES Appendix II, introducing regulations on its international trade. The straw-headed bulbul (*Pycnonotus zeylanicus*) was uplisted from Appendix II to Appendix I, effectively banning international commercial trade of this species.

For the *Resolution 047: Law Enforcement Regarding Commercial Trade in Tigers and Tiger Parts*, EAZA collaborated with WWF, TRAFFIC and Four Paws to advocate for stricter regulations within the EU to prevent illegal and commercial trade of tigers and their derivatives. This included contributing to publications highlighting the role of the EU's captive tiger population in trade and participating in policy discussions with European Parliament members. Future actions include continuing policy advocacy within the EU and CITES frameworks to tighten and better regulate tiger trade. At the CITES CoP20, which will be held on 24 November–5 December 2025 in Uzbekistan, there will potentially be side events for tigers and Asian big cats as well as songbirds, for continued attention for these species and their challenges in relation to trade.

JOIN THE IUCN WORLD CONSERVATION CONGRESS 2025

This year, the IUCN World Conservation Congress will be held in Abu Dhabi (United Arab Emirates) on 9–15 October. In preparation for the upcoming edition, EAZA has co-sponsored eight Motions (see opposite page). We are also following all the Motions submitted (currently 138) and will contribute to fine-tuning them and forming voting recommendations in collaboration with other EAZA/IUCN Members. Excitingly, one of our community members, Ann-Katrine Garn from Copenhagen Zoo (Denmark), is standing as a candidate for IUCN Council for West Europe, IUCN's principal governing body (see her statement above).

BECOME AN IUCN MEMBER

In 2024, IUCN introduced a new fee structure for venue-based organisations, ensuring that aquariums and zoos contribute based solely on their conservation-related expenditures, reinforcing our shared commitment to protecting nature. Annual membership dues start at around €300 and go up to €22,000. Find out more on the EAZA Member Area, Resources > Zoo and Aquarium Management > Field Conservation.

A leap of hope

THE STORY BEHIND THE HUGE EFFORTS BEING MADE TO RESCUE THE TINY SOUTHERN DARWIN'S FROG

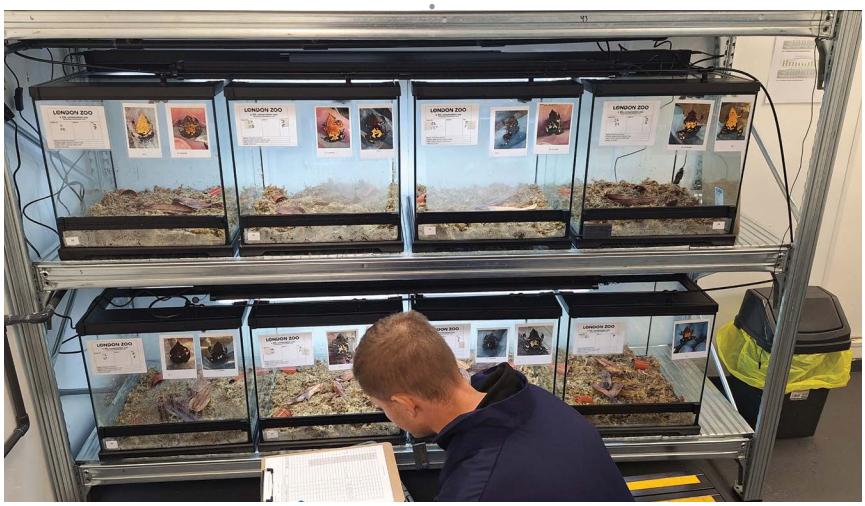
© JAIME BELTRAND, NGO RANITA DE DARWIN

Andrés Valenzuela-Sánchez, Zoological Society of London (ZSL) and NGO Ranita de Darwin; Benjamin Tapley, Andrew A. Cunningham, Daniel Kane, Chris Sergeant, ZSL; Bastián Santana, Soledad Delgado, Claudia Faure, Diego Peñaloza, Jaime Beltrand, NGO Ranita de Darwin; Alan Bannister, Pablo Aguilar, Alison Guerrero, Kevin Tejer, Fundación Parque Tantauco; Claudio Azat, Francoise Cuadra, Universidad Andrés Bello; Osvaldo Cabeza, Zoológico Nacional del Parquemet; Claudio Correa, Catalina Martin, Amapola Palacios, Juan Carlos Ortiz, Universidad de Concepción; Michael Meyerhoff and Till Ramm, Leipzig Zoo

Frogs of the genus *Rhinoderma* are some of the weirdest and most wonderful amphibians on earth. If we lose these Evolutionarily Distinct and Globally Endangered (EDGE) species, we lose a very distinct branch from the tree of life. Often weighing less than 2 g and measuring less than 3 cm in body length, these tiny frogs were once widespread in the native forests of Chile and Argentina.

The Southern Darwin's frog (*Rhinoderma darwinii*) has a unique reproductive mode. Females lay terrestrial eggs, and when these eggs start to develop, the males take the developing embryos into their vocal sac. Here, the tadpoles develop and complete metamorphosis, at which point the male will spit out tiny froglets. The closest relative of the Southern Darwin's frog is the Northern Darwin's frog (*Rhinoderma rufum*), which was last seen in 1981 and is currently assessed as Critically Endangered (Possibly Extinct) by the IUCN. The Southern Darwin's frog is Endangered.

A significant threat to Darwin's frogs is amphibian chytridiomycosis, a disease caused by the invasive fungus *Batrachochytrium dendrobatidis* (Bd). It is believed that this disease was one of the primary drivers in the decline and disappearance of the Northern Darwin's frog. This disease has already led to the recent local extinction of several Southern Darwin's frog populations. One of the few areas in Chile that remained free of Bd was Parque Tantauco. This private protected area in the Chiloé Archipelago supported the largest contemporary populations of the Southern Darwin's frog until very recently. In 2023, we detected Bd at this Southern Darwin's frog stronghold. Between 2023 and 2024, Southern Darwin's frog abundance declined by 89.1% and 95.5% in the two previously stable local populations that had been monitored



DANIEL KANE RECORDING MONITORING INFORMATION AT THE BIO-SECURE FACILITY FOR SOUTHERN DARWIN'S FROGS AT LONDON ZOO © ZSL

using capture-recapture methods for over a decade. We estimate that at least 1,300 individual Darwin's frogs died from amphibian chytridiomycosis in Parque Tantauco within a year. Alarmingly, in a follow-up survey, we found that most of the known local populations of this species in the area had disappeared.

This emergency demanded an immediate response. We formed Alianza Tantauco, an initiative composed of members of the Binational (Chile-Argentina) Conservation Strategy for Darwin's Frogs (CSDF). The CSDF is international and brings together 24 governmental, non-profit and private organisations, and champions Darwin's frogs as a flagship species for Austral temperate forest conservation. This strategy adopts an evidence-based approach to implement priority actions for the conservation of Darwin's frogs and their habitat. With Alianza Tantauco, we are embarking on a holistic and long-term initiative to rescue and recover Parque Tantauco's Southern Darwin's frog populations. Following the One Plan Approach for conservation, we incorporate both *in situ* and *ex situ* stakeholders and actions. Alianza Tantauco is composed of NGO Ranita de Darwin, Fundación Parque Tantauco, Universidad Andrés Bello, Universidad de Concepción and Zoológico Nacional del Parquemet (all Chile), the Zoological Society of London (UK), Leipzig Zoo (Germany) and the IUCN SSC Amphibian Specialist Group. The initiative is strongly supported by the government of Chile.

RESCUE EXPEDITION

The first action was to prevent the imminent extinction of the Southern Darwin's frog in Parque Tantauco. In October 2024, our team undertook a rescue expedition to collect Southern Darwin's frogs from Parque Tantauco and transfer them to human care at ZSL London Zoo. A temporary bio-secure facility was established in Parque Tantauco so that we could undertake health checks, monitor and care for the frogs in preparation for their journey to their new home at London Zoo, on loan from Chilean authorities. At the point of collection, frogs were swabbed twice for Bd

TRANSPORT CRATE DESIGNED AND CONSTRUCTED BY ALIANZA TANTAUCO FOR THE RESCUE OF SOUTHERN DARWIN'S FROGS © NGO RANITA DE DARWIN

infection and these swabs were immediately flown to Universidad Andrés Bello for processing. Fifty-three chytrid-free frogs, including 12 brooding males, were cleared to embark on their journey to London.

This journey involved the collaboration of 51 people and the frogs travelling by sea, land and air. All of the frogs survived the 13,000km journey to London Zoo, where a dedicated, climate-controlled, bio-secure facility was developed for Southern Darwin's frogs, with conditions inside the facility engineered to replicate conditions in Tantauco. The rescued population were health checked upon arrival and moved to their new habitats. They began to vocalise within a matter of hours. In December 2024, we observed the first egg-laying. This egg clutch was viable and the tadpoles are currently being brooded by a male. By January, 11 of the brooding males had successfully brooded 33 metamorphs. The results of the rescue and subsequent acclimatisation and breeding of Southern Darwin's frogs at London Zoo give us great hope for the future.

In January 2025, we held a CSDF workshop at Universidad de Concepción on the *ex situ* conservation and translocation of Darwin's frogs. It had four key objectives:

1) to incorporate the methodology of the IUCN guidelines on *ex situ* conservation and translocations into the planning of the CSDF;
2) to define objectives and priorities for *ex situ* breeding and translocations of Darwin's frogs;
3) to strengthen collaboration among the international stakeholders; and
4) to develop specific guidelines and protocols for the implementation of *ex situ* conservation actions and translocations in Darwin's frogs.

The initiative brought 40 participants together. This strategic planning effort will be important if we are to recover populations of Southern Darwin's frogs in Parque Tantauco and, hopefully, beyond.

Following the workshop, Alianza Tantauco carried out a second rescue of Southern Darwin's frogs from Parque Tantauco to establish an *ex situ* population within the species' native range at the Universidad de Concepción. In this important mission, 32 Bd-free Southern Darwin's frogs were successfully collected and transported to the the university's breeding and research station, which is focused on the *ex situ* conservation of the species. This station has been operating for over 15 years in close collaboration with Leipzig Zoo.

We anticipate that the offspring of the frogs brought to London Zoo and Universidad de Concepción will play two crucial roles: as candidates for conservation translocations and to enhance our understanding of chytridiomycosis and how to mitigate its impacts in Chile and beyond.

FROGS ON FILM

We were fortunate that the urgent rescue mission transporting Southern Darwin's frogs to London Zoo was documented by BAFTA-winning filmmaker Paul Glynn. The documentary, 'A Leap of Hope: A Huge Mission to Rescue a Tiny Frog' is available on ZSL's YouTube channel, with Spanish subtitles on NGO Ranita de Darwin's YouTube channel.

NGO Ranita de Darwin would like to thank the Mohamed Bin Zayed Species Conservation Fund and the IUCN SSC internal grant scheme for their financial support.

Survival tactics

HOW THE OTTER SPECIALIST GROUP IS USING THE ONE PLAN APPROACH TO SUPPORT THE CONSERVATION OF THE SMOOTH-COATED OTTER

Angela Matthews, Smooth-coated otter EEP coordinator, Colchester Zoological Society

The smooth-coated otter (*Lutrogale perspicillata*), the largest otter species found in South Asia, was once common in the wetlands and low-lying areas of South Asia and Southeast Asia. It is now restricted to a few protected areas[1]. Classified as Vulnerable on the IUCN Red List with a decreasing population and listed on CITES Appendix I, the species is protected in almost all its range countries, although most range countries are unable to control the illegal trade, leading to extensive poaching[2].

In 2018, the IUCN Species Survival Commission (SSC) Otter Specialist Group developed a global strategy for otter conservation[3]. They recommend the following priority actions for smooth-coated otters[1]:

- monitor population status in protected as well as non-protected areas in all range countries;
- determine the status of the subspecies *L. p. maxwelli* in the Iraqi marshes;
- support existing laboratories and create new research facilities dedicated to research into conservation genetics of the species;
- support full-time research for otter conservation; and
- organise workshops for capacity building, conservation education and awareness in all range countries.[2]

THE BENEFITS OF *EX SITU* EFFORTS

The Global Otter Conservation Strategy highlights the role that *ex situ* management plays in the conservation of otter species[3]. EAZA manages the population of the smooth-coated otter as an EEP, with 15 institutions holding 52 animals. The import of two female pups from Angkor Wildlife and Aquarium (Cambodia), in collaboration with the Southeast Asian Zoos and Aquariums Association (SEAZA), would be the key to increasing the genetic diversity of the EEP population. The EEP is looking for more holders so that further transfers can hopefully be made in the future.

SMOOTH-COATED OTTERS AT COLCHESTER ZOO © COLCHESTER ZOOLOGICAL SOCIETY

In addition, the EEP is supporting Action 7.4[3] ('*Develop and disseminate husbandry manuals/guidelines for all otter species – available through the Otter Specialist Group website – and translate them to range and* ex situ *countries' language*') by providing information in range on the specific care that these otters need in rehabilitation centres. The EEP is working on publishing the Cambodian and Vietnamese versions of its Best Practice Guidelines to assist this.

The EAZA Small Carnivore TAG is also working to manage the Asian short-clawed otter (*Aonyx cinereus*) and hairy-nosed otter (*Lutra sumatrana*) as EEPs in the future. Education plays a key role in the conservation of these species; the EEP coordinator would like zoos to raise awareness of the importance of otters in their natural setting and of the threats they face to their visitors. The EEP wants to encourage zoos to support the #sharesavvy campaign; to think about how otters are portrayed in human care, to not make them look 'cute and cuddly' in zoo social media posts and to encourage visitors not to support the pet trade.

In line with the priority action to organise workshops for capacity building, conservation education and awareness, the International Otter Survival Fund (www.otter.org) is holding a workshop on Eurasian Otter Conservation at Colchester Zoological Society (UK) on 17–20 November 2025. The workshop will focus on Eurasian otters but will have experts joining online from countries such as Bangladesh, Nepal and Bhutan to share information and reports on Asian otter species. This workshop will share experience, data, threats to otters and success stories and is open to anyone working on Eurasian Otter Conservation.

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Population progress

EAZA TOOK A HUGE STEP FORWARD FOR GLOBAL SPECIES CONSERVATION BY MEETING THE WAZA 2027 POPULATION MANAGEMENT GOAL

Raymond van der Meer, Director of Conservation and Population Management, EAZA Executive Office

In July 2024, EAZA, the Association of Zoos and Aquariums (AZA) in North America and the Zoo and Aquarium Association (ZAA) in Australasia participated in a pilot review to test a newly developed framework and assessment tool – an essential step towards reaching the World Association of Zoos and Aquariums 2027 Population Management Goal (WAZA 27PMG). Following a successful evaluation and endorsement by the WAZA Executive Committee, WAZA officially informed the EAZA Executive Office on 17 February 2025 that EAZA had met the goal.

The journey began in 2022 at the WAZA Committee for Population Management (CPM) meeting in Long Beach, California (USA), where the idea of a global benchmark for professional population management took shape. The WAZA Council later endorsed this vision, tasking the CPM with developing a comprehensive framework to guide zoos and aquariums worldwide.

PLAYING A VITAL ROLE

The urgency of this work cannot be overstated. Biodiversity is declining at an alarming rate and countless species are facing the threat of extinction in the coming decades. Zoos and aquariums have a critical role to play in reversing this trend through their *ex situ* conservation efforts. At the heart of this mission lies one essential element: the ability to maintain healthy populations with healthy animals.

Achieving this requires more than good intentions—it calls for professional, science-based population management. As a global zoo and aquarium community, we possess the tools, knowledge and experience needed to succeed. But true impact only happens when we work together – coordinating our actions, aligning our goals and committing to a shared future for wildlife.

To advance the framework, EAZA hosted a two-day workshop in March 2023, facilitated by the Conservation Planning Specialist Group (CPSG), joined by representatives from AZA, ZAA, Latin American (ALPZA), Pan-African (PAAZA) and Southeast Asian (SEAZA) Zoo Associations to ensure the PMG was globally relevant and inclusive. The workshop helped to identify common ground among diverse regional approaches. The PMG had to be both attainable and aspirational, guiding institutions toward a shared vision of progress. Importantly, the Goal was designed to align with international conservation priorities, particularly Target 4 of the Kunming-Montreal Global Biodiversity Framework, which focuses on halting species loss, preserving genetic diversity and addressing human-wildlife interactions.

At its core, the WAZA PMG defines what professional and effective population management looks like and outlines the zoo and aquarium community's collective responsibility to ensure thriving populations. It unites regional associations and members under a shared commitment to excellence in conservation. The WAZA PMG states that by 31 December 2027:

- WAZA Regional Associations must have a science-based population management framework that reflects the specific professional and effective elements of population management as approved by WAZA
- WAZA Regional Associations must require participation of its institutional members in their population management framework, such that there is institutional responsibility for effective and impactful population management

SIX PILLARS OF SUCCESS

The PMG is further structured around six key pillars:

1. Goal-driven species selection
Activities are prioritised following a robust species assessment and selection process that identifies specific roles and goals for the population, and which considers the needs, feasibilities and risks associated with managing the population.

2. Sourcing, transfer and destination policy
Activities are based on and support legal, sustainable and ethical sourcing and placement of animals.

3. Data, tools and science
Activities are data-driven, science-based and use appropriate record-keeping and analytical tools to inform decision-making.

4. Animal welfare
Activities seek to maximise opportunities for positive welfare experiences, and these opportunities must be considered during decision-making processes at both the regional and institutional levels.

5. Engagement and participation by the members
Activities are in accordance with rules and procedures set by the Regional Association, which contribute to achieving set goals and assume cooperation and participation by members and other relevant stakeholders for these activities. These rules and procedures should also define the process for the coordination and collaboration of these activities and how these are implemented and evaluated.

6. Capacity-building and staff
Activities are appropriately resourced and supported by trained and capable staff.

ENSURING OUR GLOBAL IMPACT

Reaching the WAZA 27PMG is a proud milestone for EAZA. The process enabled valuable benchmarking and strengthened ties across regions. This achievement not only reflects EAZA's leadership but also promotes stronger collaboration across the global zoo and aquarium community. By aligning with frameworks such as CITES and the Convention on Biological Diversity, we reinforce our impact on conservation and affirm our role as global leaders in animal welfare and *ex situ* species preservation.

Fin-tastic collaboration

HOW EAZA & RESHARK ARE JOINING FORCES FOR ZEBRA SHARK CONSERVATION

ZEBRA SHARK (STEGOSTOMA FASCIATUM)
© ACQUARIO DI GENOVA

David Aparici, Animal Programmes and Conservation Coordinator, and Raymond van der Meer, Director of Conservation and Population Management Department, both EAZA Executive Office

Over the last three years, EAZA and ReShark have been quietly dreaming of ways to help the beloved zebra shark (*Stegostoma tigrinum*) make a comeback. In September 2024, that shared vision became reality when both organisations formally joined forces to back ReShark's pioneering StAR (*Stegostoma tigrinum* Augmentation and Recovery) Project—the world's very first rewilding effort for this gentle species. Since August 2022, carefully matched eggs from *ex situ* breeding programmes have been nurtured and then 'soft-released' into protected waters, giving young zebra sharks the best possible start in life.

Those early steps taught us something powerful: when aquariums, local governments and academic teams unite around a common goal, remarkable things can happen. After the shark-fin trade nearly wiped out zebra sharks in Raja Ampat (Indonesia) in the late 90s, the initial hatchery trials showed that smart genetic planning and hands-on care can truly turn the tide. As mid-level predators, zebra sharks help to keep reefs healthy and balanced – so their return matters to every corner of the ecosystem.

By signing a Memorandum of Understanding (MoU), EAZA and ReShark are now ready to take the StAR Project to the next level, building out genetic studies and new restoration hubs across Southeast Asia. Together we will ensure that zebra sharks not only survive, but also flourish for generations to come.

WHAT IS RESHARK?

ReShark is an international collective of more than 100 aquariums, NGOs, governments, academics and local communities dedicated to scalable shark and ray rewilding. The collective links *ex situ* and *in situ* shark and ray conservation efforts through breeding and conservation translocations.

Their main focus of restoring sharks to their native ranges will help to balance ecosystems, as sharks are important predators that maintain the food web and serve as indicators for broader ocean health.

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In addition to species recovery, ReShark is also involved in scientific research and community engagement. They operate globally, and currently oversee the successful recovery project with the zebra sharks in Raja Ampat—the team will publicly announce the expansion of this project later this year. Plans to apply a similar approach to other shark species in different parts of the world are currently under consideration.

MOU AND STAR PROJECT

In September 2024, EAZA signed an MoU with ReShark to collaborate on reinforcing the population, managing

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post-release efforts and advancing conservation research for the zebra shark through the use of eggs from the EEP.

Globally, zebra sharks have declined by more than 50% over the past 50 years due to overfishing and are listed as Endangered on the IUCN Red List of Threatened Species.

Raja Ampat contains an extensive network of some of the world's most well-enforced marine protected areas. These measures have enabled the dramatic recoveries of other shark species; however, the Eastern Indonesian-Oceania subpopulation of zebra sharks has failed to recover and remains depleted.

Due to a slow population growth rate, which is common for most shark species, conservation actions, including fisheries regulations and the creation of marine protected areas, have not been sufficient for the recovery of this species. Research and conservation planning have revealed that the species is unlikely to recover without additional intervention.

The StAR Project involves the collaboration of multiple partners at global and national levels to ensure that zebra shark populations are restored and protected for the long-term benefit of ocean health and coastal communities.

Experts conceived that leveraging the demonstrated breeding success and husbandry expertise of accredited aquariums could be critical in the recovery of zebra sharks and other shark and ray species. Extensive genetic testing of individuals in the wild and those in aquariums revealed two genetically distinct populations: an Eastern Indonesia-Oceania subpopulation and an Indian Ocean-Southeast Asia subpopulation. Aquariums around the world are home to animals from both populations.

Two shark nurseries were built in Raja Ampat in 2022, which are suitable for the release of offspring from purpose-bred animals from the Eastern Indonesian-Oceania subpopulation. The StAR leadership is actively seeking locations to construct additional shark nurseries that would be suitable for the release of animals from the Indian Ocean-Southeast Asia subpopulation. The team will publicly announce the expansion of the project later this year.

INTRODUCING THE NEW COORDINATOR AND TAG CHAIRS

Good leadership is what gives the Zebra shark EEP its beating heart, and the EAZA Elasmobranch TAG was thrilled to welcome Simão Santos (Oceanário de Lisboa, Portugal) as the new EEP coordinator. Simão's hands-on experience in the field, paired with his skills for shaping conservation policy, will keep the day-to-day work with ReShark running smoothly and with plenty of enthusiasm. The scientific insight of the new TAG Chairs Mark de Boer (Rotterdam Zoo, the Netherlands) and Chris Brown (SEALIFE, UK) and their genuine passion for sustainable practices will also provide an excellent addition to the StAR Project.

EAZA also wants to offer a heartfelt thank you to Silvia Lavoranno (Acquario di Genova, Italy), whose steady guidance helped us to launch the MoU with ReShark, and to Max Janse (Burgers' Zoo, the Netherlands), whose visionary leadership set the stage for our entire collaboration. With this dedicated team steering the ship, we are more hopeful than ever that zebra sharks will continue to thrive.

CALL TO ACTION FOR THE ZEBRA SHARK EEP

Over the coming weeks, Simão will be reaching out to every aquarium that currently cares for zebra sharks, asking you to share your latest counts, breeding records and health assessments. Your timely updates will feed into our global database, helping us fine-tune release schedules, genetic matchings and the expansion of nurseries across Southeast Asia. By reporting your observations, you become an essential captain in this shared voyage toward recovery.

Together, we can save this precious species!

PINK PIGEON
© GREGORY GUIDA,
JERSEY ZOO

Back from the brink

RESCUED FROM EXTINCTION BUT STILL UNDER THREAT, THE PINK PIGEON IS ABOUT TO START A NEW CHAPTER, THANKS TO A SECOND LONG-TERM MANAGEMENT PLAN

Harriet Whitford, Pink pigeon EEP coordinator, Jersey Zoo, and Elmar Fienieg, Manager of Population Management Centre, EAZA Executive Office

Jersey Zoo (UK) has been at the forefront of pink pigeon (*Nesoenas mayeri*) conservation since the beginning of the programme. However, one zoo is not enough. Due to declining interest among the broader community, it seemed as if the Pink pigeon EEP was at risk of being lost. Fortunately, interest is now picking up again and for good reason; birds from the EEP are crucial for the genetic rescue of the wild population. A larger population is needed to be able to provide a steady number of genetically diverse birds for many years to come. To prepare for this, the EEP developed its second Long-term Management Plan (LTMP) with a series of partners, most notably a representative of the Mauritian government. The meeting, hosted by ZSL London Zoo (UK), was attended by a record-breaking 40 participants. In this article, we highlight the next steps for the Pink pigeon EEP.

WHAT ABOUT THE WILD POPULATION ON MAURITIUS?

The Mauritian Wildlife Foundation continues to support pigeon subpopulations through observations, research and supplementary feeding. The creation of newer populations has helped to increase connectivity between those already established. The National Park and Conservation Services (Mauritius government) have continued their efforts in habitat restoration and, very importantly, pest control. As a result, the Mauritius pink pigeon population has grown to a much better size and can potentially still grow to about 800 individuals (Sion Henshaw, personal communication, 2025). However, despite the species' improved IUCN Red List Status (i.e. Vulnerable in 2021), simulations suggest that genetic erosion is a silent killer (Jackson et al., 2022) and populations could start to decline within the coming decade, ultimately leading to its extinction. This low genetic variation is a risk not only due to inbreeding, but also because it limits further evolution and makes the species more vulnerable to disease.

The prolonged bottleneck that the species went through in the previous century is the main reason why genetic diversity is as low as it is. However, genetic erosion still continues today with every generation. Fortunately, the EEP and the wild population have diverged over the last 40–50 years. By releasing EEP animals into the wild, directly or indirectly, it should be possible to boost the wild population's genetic diversity and health.

AND THE *EX SITU* POPULATION ON MAURITIUS?

The facilities at the Gerald Durrell Endemic Wildlife Sanctuary (GDEWS) in Black River are used to breed animals for release to the wild. A small group of EEP animals is already kept there to breed for release. Barbary doves (*Streptopelia risoria*) are kept too and can function as foster parents when needed to boost reproduction. The

A short history of the Mauritius pink pigeon

Year	Event	Source
1907	Pink pigeon (incorrectly) considered extinct	Rothschild, 1907
1950	40-60 birds survive in the wild	Carl Jones, pers. comm.
1975	Fewer than 20 birds survive in the wild	Carl Jones, pers. comm.
1976-1981	Hatch date of most founders of the EEP	Pink pigeon Studbook
1990	10 birds left in the wild	Swinnerton K. J., 2001
1990-1997	25 birds are sent back from Jersey and released to the wild	Pink pigeon Studbook
2000	The wild population has grown to ~300 individuals	Swinnerton K. J., 2001
2022	Simulations predict that the wild population will crash without genetic rescue. Birds sent again from the EEP to Mauritius	Jackson et al., 2022 Pink pigeon Studbook
2025	The wild population has grown to ~600 individuals	Sion Henshaw, pers. comm.

main bottleneck in sending EEP animals from Europe to Mauritius has so far been the capacity of the quarantine facilities. Fortunately, these facilities have been expanded significantly and should be ready this year.

The pink pigeon conservation project is lucky to have the dedication of Professor Cock Van Oosterhout from the University of East Anglia (UK). Through research and a series of simulations, he will lead the genetic rescue in terms of identifying the most genetically useful birds as well as facilitating the release strategy. The intended result will be a healthier wild population through an effective genetic rescue.

NEXT STEPS FOR THE PINK PIGEON EEP

To avoid a population crash in the wild, which may happen as soon as 10 years from now, the main aim of the EEP is to make sure that sufficient and genetically suitable individuals are available for releases. This also means that birds may be sent directly to Mauritius from any of the holders, not just Jersey Zoo, to make sure that breeders are as diverse as possible.

EEP animals are currently used to breed for release on Mauritius. This is preferred, because younger individuals show better survival (Carl Jones, personal communication). However, animals born in EAZA zoos may also be directly released in the future. The challenge is that the birds will have grown considerably older after being moved from Europe to Mauritius and quarantined on both sides.

The EEP expects that once the repatriation to Mauritius really starts, about eight individuals will be transferred to Mauritius per year, in one go. To be ready for these releases, it is important for the EEP population to grow, as it has declined to only 86 individuals due to space limitations. Fortunately, five EAZA Members want to become holders of this species and have already come forward. Because of the current releases to the wild and the bird's unique conservation story, it is expected that more interested institutions will join soon. Pink pigeons can breed well when given enough attention, so the programme can quickly grow.

The EEP also hopes that more institutions will be interested in keeping multiple pairs. This 'consortium' set-up was key to the successful comeback of the EEP pink pigeon population in 2014 when the EEP nearly crashed (see Mauritius pink pigeon LTMP 2014). Keeping multiple pairs allows for fewer transfers and for more options to boost

PINK PIGEON
© MULHOUSE ZOO

breeding success when needed for releases. When sending animals back to Mauritius, it is also highly convenient if a larger group can be sent from one institution. And ultimately, because the population size is so small, every pair makes a difference.

It is not yet clear for how long repatriations from the EEP to Mauritius will be necessary. Some level of gene flow between the EEP and the wild population will likely remain beneficial for many decades to come. Despite being nearly extinct for over a century, the pink pigeon is holding on, and its conservation seems to be heading in the right direction. This makes the pink pigeon a historically unique model that may benefit the conservation of thousands of species. Do you want to make history? Join the EEP!

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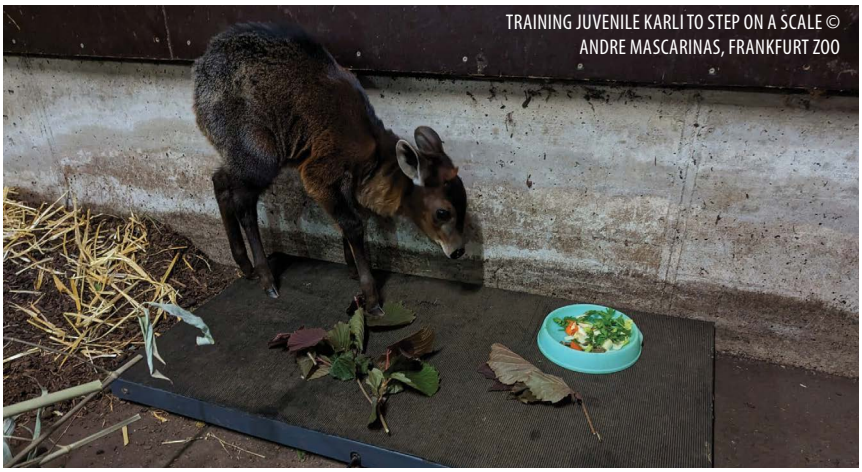
How to train an antelope

TRAINING THE SHY AND NERVOUS YELLOW-BACKED DUIKER IS NECESSARY FOR ITS SAFETY AND WELFARE. FRANKFURT ZOO SHARES SOME INSIGHTS INTO ITS SUCCESSFUL TRAINING REGIME

Vera Pfannerstill, Assistant Curator; Ann-Kathrin Will, Keeper; Andre Mascarinas, Keeper; Regina Brinkmann, Medical Animal Training Coordinator; Simon Rohner, Assistant Curator; Sabrina Linn, Yellow-backed duiker EEP coordinator; all Frankfurt Zoo



TRAINING JUVENILE KARLI TO STEP ON A SCALE © ANDRE MASCARINAS, FRANKFURT ZOO

Yellow-backed duikers (*Cephalophus silvicultor*) are nervous, shy, elusive, easily frightened animals that have a highly developed flight reaction. The yellow-backed duiker (YBD) is not commonly kept in European zoos; in 2024, there were only 11 individuals in the EEP. The typical character traits of these animals can indeed make their handling challenging; in addition, anaesthesia often results in fatal complications. That is why conditioning and desensitising training are great tools to supplement the husbandry care necessary to manage this species.

Several successful approaches and experiences of YBD training at Frankfurt Zoo (Germany) are presented in this article, using case reports obtained with a female, Dolly, and male, Walter, who arrived from the USA in 2020 and 2018 respectively. They demonstrate what can be achieved when working with a shy and nervous antelope species.

TRAINING GOALS

Both Dolly and Walter were very shy upon arrival and needed prompt handling for medical reasons such as hoof care. The goal was to use training to reduce the animals' stress during daily management and to facilitate medical handling.

The first step was to train the duikers to take food from the hand and to tolerate keepers in a relaxed manner in their vicinity. Training for handling followed this major achievement. This included training for weighing, superficial examination, hoof correction, horn grinding, ultrasound examinations, injections and manual milking.

TRAINING SET-UP

The training is designed on a voluntary basis, meaning that the animal can always choose to leave. This can take place in the outdoor or indoor enclosure. Outdoor enclosures have the advantage of providing more space, allowing the animal to choose their preferred distance from the trainer(s). That's especially handy when working with very shy individuals who do not like to be too close to their keepers. When training in stables, animal doors should always be open, so that the duiker can enter and leave by more than one route. At Frankfurt Zoo, a natural bamboo curtain also hangs in one corner of the stable to provide a retreat. The duikers often use it to take a break during training.

The duikers are rewarded with their favourite food (browser pellets, which are also part of their normal diet) when showing the desired behaviour, to motivate them to take part in the training. This motivator, along with the ability to choose how long and how intensive the training is, speeds up the learning process and helps reduce the animal's stress. For more demanding training, we sometimes use a special reinforcer (e.g. cooked carrots), which they get only during training sessions.

All the tools necessary for the care tasks (e.g. claw scissors, syringe etc.) are placed near or inside the enclosure for several days before the actual training starts, to allow the duikers to get used to them. For expensive tools, such as the ultrasonic device, we used dummies: for example, a white painted piece of wood with a cable as the sonic head. When the trainer has to use both hands for handling the tools, a second person is assigned as

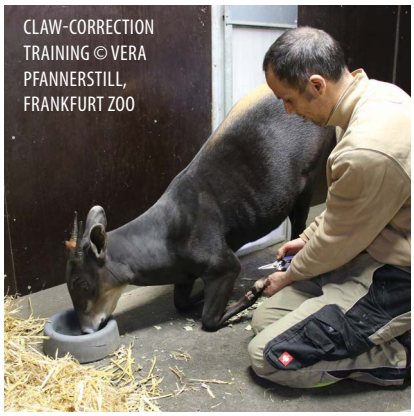
the 'feeder' so that the duiker can be directly rewarded during the task.

TRAINING STEPS

Animal training can be a long and frustrating process when the goal is too ambitious. Therefore, it is important to break down each goal into achievable steps. Ideally, these can be measured or specifically defined so that anyone taking part can understand which behaviour to reward. For example, with a complex task such as a 15-minute ultrasound examination, the first goal was simply to get the duiker to come into the training chute upon being called. The next steps we rewarded in the ultrasound examination training were: touching the duiker's flank and later belly with fingers; applying gel to the duiker's flank and belly; touching the flank with the dummy sonic head; touching the belly with the dummy sonic head; handling the laptop (as a dummy for the ultrasonic device) standing next to the enclosure (while imitating the sounds); switching the dummy sonic head from the right to the left hand; and switching between handling the laptop, gel and the sonic head, including touching the duiker with the sonic head.

TRAINING COMMUNICATION

Two key elements for successful training are planning and communication. The training steps were developed in close cooperation between the keeper team, the training coordinator, the curator, veterinarians and construction team. This way, not only are the training goals set out clearly from the beginning, but also the steps and necessary tools are prepared in advance, so that training sessions can run smoothly.



CLAW-CORRECTION TRAINING © VERA PFANNERSTILL, FRANKFURT ZOO

Progress is always documented and evaluated in between training sessions. This allows us to optimise and adapt the training situation to the actual circumstances. For example, the first ultrasound set-up included the veterinarian sitting alone inside the stable with the duiker. It turned out that handling the devices and rewarding the duiker was not feasible at the same time, putting the expensive equipment at risk. A new setting was therefore tested where the veterinarian and the equipment were placed in the keeper passage, the duiker was directed to stand next to the open door and a second person rewarded the duiker through a feeding pipe.

An easy-to-fill table is used to record the progress, so that the necessary documentation can easily be included in the daily work schedule. In addition, the table allows the training progress to be visualised in one glance, so even where work schedules don't overlap or trainers are away, other keepers are able to continue the training from the same point.

THE SECRETS OF SUCCESS

An important insight from this training was that the continuity and frequency of the training were more important for success than the duration of a session. For example, Dolly was not comfortable with the claw-cutting sound. Therefore, keepers reproduced the sound by cutting small branches during everyday routines (e.g. feeding) whenever they passed the duiker stable, allowing Dolly to get used to the sound during relaxed activities and eventually to tolerate it during the training. Of course, continuous training requires time every day, but it can be kept as short as 10 minutes. We found this to be more effective than longer training sessions interrupted by longer breaks, which may result in frustration.

In order to habituate naturally shy and nervous animals like yellow-backed duikers, training can be a great way to improve their handling and care in zoos. We showed that training with this species is possible and great things can be achieved within just a few months. Starting with very basic training elements such as getting used to the keeper presence can lead to sophisticated steps such as performing ultrasound examinations on a pregnant duiker or grinding the horns of a male duiker.

Finally, we would add that early practice makes perfect – so you can start working with infants!

LEFT TO RIGHT: X-RAY TRAINING FOR REGULAR CHECK-UPS AND MONITORING OF THE JAW © FRANKFURT ZOO

Inside the aviary

A NEWLY BUILT EXHIBIT IN BERN ANIMAL PARK IS PROVIDING A SAFE HAVEN FOR THE EUROPEAN BEE-EATER

Meret Huwiler, Curator, Bern Animal Park

In June 2024, Bern Animal Park (Switzerland) opened a new exhibit focusing on bird migration, in which the European bee-eater (*Meros apiaster*) plays a central role. Two aviaries are connected; inside is an African habitat, which is accessible to visitors, and outside is an imitation of a broad river valley in Switzerland, where wild European bee-eaters live and breed regularly.

A EUROPEAN BEE-EATER IN FRONT OF A BREEDING CAVITY © BERN ANIMAL PARK

A JEWEL OF THE SKIES

The colourful and thermophilic European bee-eater is the only representative of the family *Meropidae* in Europe. As a long-distance migratory bird, the European bee-eater spends the summer from mid-April/May to September in Europe, where it breeds in warm regions, often along wide rivers with sandbanks or in pastures and cultivated land as well as in plains or open, hilly landscapes. During the winter, it migrates to southern Africa, where it lives in the habitats of steppe, wooden and grassy savannah and plains. Since the 1990s, Switzerland has reported irregular sightings of this species, mostly due to a prolonged migration in spring. However, as temperatures have risen, these sightings have become more regular and these birds have even started to breed in several regions of Switzerland.

The European bee-eater is listed as Vulnerable on the Swiss Red List and as Least Concern on the IUCN Red List (2025). As a specialised insectivore, it hunts flying insects, in particular of the order *Hymenoptera* (bees, wasps, bumblebees or hornets), but it feeds on *Odonata* (dragonflies), *Hemiptera* (cicadas) or *Coleoptera* (beetles) as well. It uses a special technique to kill its prey, and if the prey has a poisonous sting, the bee-eater removes it or uses its beak to empty the venom gland. The combination of this bee-eater's biology as a long-distance migrant, its specific breeding requirements and its diet make this colourful bird an incredible animal to present to visitors.

DOUBLE EXHIBIT FOR THE BEE-EATERS

The project for the European bee-eater began with the need to renovate a rainforest exhibit in the tropical house of Bern Animal Park that had been constructed around 20 years earlier. The options were very limited, as the area and volume, the geographic orientation and the outer shell of the building already existed. But connecting the indoor aviary to an already existing outdoor exhibit gave us the opportunity to tell and show the story of the phenomena of bird migration in a new style. The European bee-eater's spread in times of biodiversity crisis made it an ideal candidate for the new project.

The outdoor aviary represents Europe. It is 31 m long, six metres deep and three metres high. Two windows with sliders connect the outdoor to the indoor aviary. During the warmer months of the year, the birds can choose whether to stay inside or outside, and they can use the entire space and volume of both aviaries to perform their acrobatic flying skills and hunt wild insects. The indoor aviary represents an African habitat and has a total area of 100 m^2, of which 21 m^2 is accessible to visitors.

RECREATING A SWISS RIVER VALLEY

There is a natural breeding site in the Pfyn-Finges Nature Park close to Bern Animal Park. The outdoor exhibit represents a piece of this nature park: a south-exposed steep face with rock flora followed by a small scrub forest and ending in a

THE OUTDOOR EXHIBIT IMITATES A SWISS RIVER VALLEY FOUND IN THE NATURE PARK IN PFYN-FINGES © BERN ANIMAL PARK

large steppe-like area. The nature park is a hotspot for wild bees and butterflies, and this is imitated by a visually similar plantation in the aviary.

The flora was designed by the local conservation association Floretia to attract rare pollinators only when the bee-eaters are kept indoors, by focusing on early bloomers as well as wind- and moth-pollinated plants. The intention was that once the bee-eaters had access to the outdoor aviary, the areas around the aviary would be in flower, providing food for the rare insects and therefore discouraging them from entering the aviary.

We included a number of plant species that attract domestic honeybees into the aviary and provide a natural food source and enrichment for the bee-eaters without harming wild insect populations. But the reality turned out to be different from the plan. The breeding wall for bee-eaters also attracted wild bees. Observations of bee-eaters hunting and examinations of the bee-eater pellets showed that they prey on any wild insect that can pass through the 1 x 1 cm mesh of the aviary.

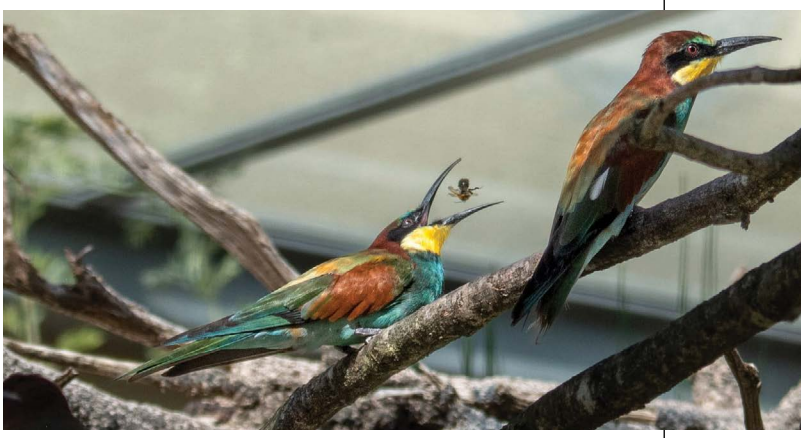
CREATING A BIODIVERSITY HOTSPOT

The exhibit does not end with the aviary fence. The plantation around the aviary is designed to support and create habitats for wild bees and butterflies. There is a slight transition from the imitated habitats of the Pfyn-Finges Nature Park to the habitats around Bern Animal Park, in order to support the natural fauna of the region. More than 400 square metres have been reseeded with hundreds of different plant species, attracting numerous butterflies and their caterpillars, wild bees, beetles and many other insects. The biodiversity of this area will be measured through regular monitoring from the very beginning. As the area was planted in 2024, the first results are expected by the end of 2025.

BREEDING WALL FOR THE BEE-EATERS

One of the key elements in keeping bee-eaters is the breeding wall. As these birds follow the sun, the breeding wall must face south and receive direct sunlight for many

THE EUROPEAN BEE-EATER TOSSES ITS PREY THROUGH THE AIR AND THEN USES ITS BEAK TO REMOVE THE POISONOUS STING © BERN ANIMAL PARK



hours each day. The material of the breeding wall should be neither too soft nor too hard for the bee-eaters' breeding holes, which can be up to 1.5 m long. A sand with a high clay content provides the ideal consistency and also supports the natural beak abrasion of the birds when they dig their nest cavity.

The large, steep face in the outdoor exhibit includes three different nesting systems for the bee-eaters:

- artificial nesting boxes located in the middle of the breeding wall, where PVC tubes lead to an artificial nesting box that can be opened from the back
- a semi-controlled area that has a window-like section with a flap mechanism at the back. When the birds dig to the end of the wall, the keeper can open the flap to eventually see into the nest
- a third area where the birds can dig completely free in the wall, and no one can see what is going on inside the breeding cavities

A BONUS FOR TERRESTRIAL INVERTEBRATES

The second part of the bird-migration exhibition is the indoor aviary, which represents the winter habitat of European bee-eaters. In addition to providing an appropriate winter housing for the birds, the focus on biodiversity and insects of the outdoor area is continued in the indoor exhibit, where various terrestrial invertebrates are displayed. At the centre of the aviary, there is a termite mound for *Macrotermes bellicosus* (Bern Animal Park has been successfully keeping and breeding termites for decades). In two wall terrariums, there are giant African millipedes (*Archispirostreptus gigas*) and numerous species of beetle, especially from the taxon of the flower beetles (*Cetoniinae*) such as the Goliath beetle (*Goliathus goliatus*).

Behind the scenes, Bern Animal Park has its own beetle breeding facility, where all the beetles for the exhibit are bred. Our aim is to increase our knowledge and mastery of beetle breeding and pass this on to other zoos in the EAZA community.

Improving breeding success to increase the genetic diversity and viability of the *ex situ* population is one of the roles identified for the European bee-eater EEP proposed in the latest RSP. This will be done by developing Best Practice Guidelines and training holders. Additionally, the EEP aims to educate on the challenges of migration and the vulnerability of the species. Its indirect conservation roles include threats from hunting and pest control, requiring lobbying for protective changes in collaboration with other TAGs and NGOs.

Beating the heat

A PILOT STUDY ON ZOO-HOUSED PYGMY HIPPOS REVEALED THE NEED FOR EXHIBIT DESIGN TO ACCOMMODATE THE CHANGING CLIMATE

Merel Webbe, student in animal management, University of Applied Sciences Van Hall Larenstein, and Stephan Lugthart, Animal Welfare Officer, Rotterdam Zoo

Pygmy hippos (*Choeropsis liberiensis*) are Endangered forest-dwelling ungulates inhabiting densely vegetated rainforests and swampy areas in West Africa. Merel Webbe conducted a pilot study aiming to better understand pygmy hippos' thermal comfort and exhibit use under varying weather conditions in a zoo setting.

Delft University of Technology has led multiple climate change adaptation studies in collaboration with Rotterdam Zoo (both the Netherlands). We applied similar methods, but instead of using their sensors to assess heat stress in humans, we used them for pygmy hippos in zoos.

Our study ultimately focused on temperature and solar radiation, with observations conducted in Rotterdam Zoo and ZooParc Overloon (the Netherlands), whose pygmy hippo exhibits differ greatly in design and natural features, which had the potential to reveal important factors influencing thermal comfort.

MICROCLIMATES IN EXHIBITS

The study was conducted in early summer 2024, from late May to early July, to capture the increasing temperatures. Observations were alternated weekly between the two zoos from Monday to Friday. At the start of each week, sensors were installed to monitor microclimates within the outdoor exhibits.

These sensors were strategically placed in open (sunny) and vegetation-rich (shaded) zones. The HOBO MX2300 and Kestrel D2HS sensors measured temperature and humidity, while additional data of wind speed and solar radiation were obtained from KNMI weather stations. Simultaneously, behaviour was recorded every two minutes using ZooMonitor, noting each pygmy hippo's location, whether animals were in the sun or shade, and general weather conditions.

FROM LEFT TO RIGHT: THE OPEN ZONE AND VEGETATION ZONE SENSOR PLACEMENTS IN ROTTERDAM ZOO AND ZOOPARC OVERLOON

IMPACT OF EXHIBIT DESIGN DIFFERENCES

In Rotterdam Zoo, the habitat featured a constructed pool, accessible via stairs, with land areas offering a mix of open and a few vegetated zones. Although some shaded areas were present, much of the exhibit was exposed to direct sunlight. In contrast, the exhibit in ZooParc Overloon was more shaded due to surrounding trees and included a natural pool, providing naturally cooler areas and limiting the animals' exposure to direct solar radiation.

Sensor data indicated that the dense vegetation at ZooParc Overloon contributed to equivalent ambient temperatures between the specified zones, resulting in less preference for a specific zone during warmer periods. In contrast, Rotterdam Zoo showed greater temperature and humidity differences between the open and vegetation zone.

Furthermore, logistic regression analysis revealed that shade use in Rotterdam Zoo increased with rising temperatures (turning point of >16 °C) and solar radiation, whereas in ZooParc Overloon, shade use decreased despite higher temperatures and stronger solar radiation. Pool use also varied between the two zoos. The hippos in ZooParc Overloon entered the water more frequently at higher temperatures, while the individual in Rotterdam Zoo did so less often under similar conditions. These differences may be linked to exhibit characteristics, such as the design of the water pool and the amount of vegetation or shade present above the pool. The natural pool in ZooParc Overloon allowed the pygmy hippos to display a wider range of natural behaviours in the water, while this was less possible in the constructed pool at Rotterdam Zoo.

THERMAL COMFORT IN ZOOS

These findings highlight the importance of exhibit design in supporting thermoregulatory behaviour. By adapting the measurement methods and technology from Delft University of Technology's urban climate research to zoological settings, this pilot study provides valuable insights into how zoo animals interact with their environment under changing weather conditions.

This study marks an initial, exploratory step in a series of future research projects on pygmy hippos—one of Rotterdam Zoo's key focus species. As a new exhibit for this species will be planned in the future, we are currently facilitating research to build a stronger foundation for understanding their behavioural needs. Upcoming studies, such as one on nocturnal activity budgets and the impact of a night-active foraging system, aim to further inform the design and husbandry decisions.

Navigating ocean literacy

EAZA ACADEMY HAS PRODUCED NEW RESOURCES FOR ZOOS AND AQUARIUMS TO IMPROVE OUR OCEAN LITERACY AND HELP US SPREAD THE WORD TO OUR VISITORS

Ania Brown, Consultant, EAZA Executive Office

The ocean is essential to life on Earth – regulating climate, supporting biodiversity and sustaining human wellbeing across multiple dimensions. Just as the ocean reaches beyond its coasts to touch every aspect of life on Earth, ocean literacy extends beyond solely understanding marine ecosystems. It emphasises the interconnectedness of global systems and the importance of communication and inclusion of this knowledge. The ocean impacts all humans and ecosystems, and they, in turn, affect ocean health. As such, fostering ocean literacy is essential across all environments. However, the health of our oceans is under growing threat from pollution, overfishing, climate change and more, and increased action is urgently needed.

Zoos and aquariums are uniquely positioned to bridge the gap between scientific knowledge and public action and have a powerful platform from which to educate and inspire. Through engaging exhibits, storytelling and interactive programmes, these institutions can highlight the ocean's role in sustaining life and the vital need for conservation. By incorporating ocean literacy, progressive zoos and aquariums can play a pivotal role in addressing the environmental challenges we face today.

TAKE THE EAZA OCEAN LITERACY COURSE

Recognising this, the EAZA Academy has introduced an online, self-paced ocean literacy course to help zoo and aquarium professionals integrate this subject into their educational programmes. This course, available to all on www.eaza.net/academy-courses after registration, provides a comprehensive dive into the seven principles of ocean literacy, including key scientific concepts. Beyond these technical foundations, it also explores more practical dimensions of ocean literacy, such as strategies for engaging diverse audiences, fostering emotional connections, how to inclusively communicate and share ocean literacy principles and encouraging conservation action through community-based initiatives.

> 'I understood that OL is more complex and diverse than I thought and that there is a lot yet to be done in my organisation. I see it as an exciting opportunity to grow!' OCEAN LITERACY COURSE ATTENDEE

This course provides educators with the tools to help transform complex marine science into accessible, compelling narratives. Participants are shown how interactive exhibits are designed, the use of storytelling techniques, and how to develop inspiring audience-centred programmes. The course also provides a customisable framework that can be adapted to a variety of institutions, enabling anyone to connect local ecosystems to the broader message of global ocean health. Additionally, participants gain access to materials and tools to support the development of new programmes as well as the enhancement of existing ones, ensuring that ocean literacy becomes a core part of the visitor experience.

At the time of writing, 50 people had already registered for the course and the feedback so far has been positive.

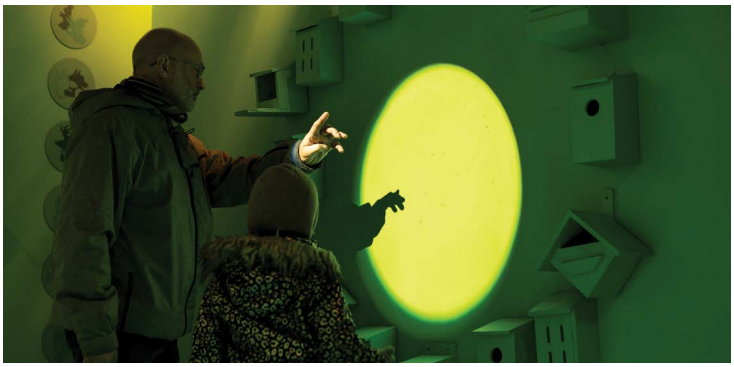
OCEAN LITERACY WORKSHOP

To complement the online course, the EAZA Academy hosted an in-person Ocean Literacy Workshop on 17 March at Chester Zoo (UK), ahead of the 2025 EAZA Conservation Education Conference. With 33 participants representing 24 institutions across 13 countries, and guided by expert tutors Nóirín Burke (Galway Atlantaquaria), Jessica Briggs and Freyja Thomson-Alberts (Ocean Conservation Trust), this workshop built on concepts introduced in the online course. It emphasised collaborative programme design, providing participants with hands-on experience to refine interactive engagement techniques and initiatives. Educators shared best practices, explored new learning dimensions and advanced teaching methods, and left equipped with actionable ideas to strengthen their educational programmes.

Both courses were designed as part of EAZA's partnership with EU4Ocean to empower participants to become advocates for the ocean's role in everyday life, to make scientific concepts personally relevant and truly engage visitors in conservation-minded and sustainable behaviours.

EAZA will continue its commitment to ocean literacy by participating in the next evolution of EU4Ocean –the #bluecities initiative – encouraging all Members to work locally with their cities on blue issues. The need for ocean literacy is more urgent than ever. As climate change accelerates and ocean degradation worsens, fostering public understanding and action is critical.

Join the movement to deepen public understanding by making ocean literacy a core part of your educational mission. Together, we can inspire action, protect our blue planet and foster a sustainable future for generations to come!



Spreading the word

SOME UNUSUAL PARTNERSHIPS ARE HELPING AALBORG ZOO TO SHARE AND PROMOTE THE UNITED NATION'S SUSTAINABLE DEVELOPMENT GOALS

Henrik Vesterskov Johansen, Director, Aalborg Zoo

Since its establishment in 1935, Aalborg Zoo (Denmark) has evolved from a menagerie housing exotic animals in small enclosures to an internationally recognised institution dedicated to research and the dissemination of knowledge. This development significantly accelerated when, in 1999, we became the first zoo in the world to receive environmental certification. More recently, we have begun taking another long stride forward because the 2025 vision is for the zoo to be acknowledged as a year-round attraction that offers inspiring experiences to 550,000 annual guests and integrates nature conservation efforts with the 17 Sustainable Development Goals (SDGs) of the United Nations.

Sharing our goals and how we achieve them is very important to Aalborg Zoo, not least in relation to the SDGs. These serve as the background for our project 'Space' ('Verdensrummet' in Danish), where we introduce our guests to the global goals, how we are working with them and especially how we pass them on to future generations.

In a purpose-built building, we present the SDGs in an engaging format, emphasising participation over viewing. The primary target group for the project is families with children aged up to 12 years. In addition to these guests, who come to us as regular visitors, we connect with a large number of children through integration with our School Service; and by creating a connection with the annual Science Festival, we reach older children and young people in particular.

In developing and organising the exhibition, it was important to us that it does not involve pointing fingers or making anyone feel guilty. Instead, the narrative is that we can all make a difference and that working together is greatly beneficial.

Our ambition has been to present an innovative narrative about the SDGs rather than the typical communication involving posters and leaflets. The exhibition offers unusual partnerships with large locally represented companies such as Siemens Gamesa, who are experts in renewable energy, the non-profit housing organisation Himmerland Boligforening, which focuses on energy optimisation, and Ørsted, a pioneer in offshore wind and one of the largest global companies in renewable energy, which considers marine biodiversity in the construction of offshore wind parks.

Certainly, there is a focus on how the companies' daily efforts align with the SDGs. However, we have also emphasised the inclusion of unique elements, such as a 'farting machine' that measures CO^2 emissions and a Narnia-inspired wardrobe that tells the story of overconsumption in textiles.

Throughout the three-year exhibition, which runs until autumn 2025, we strive to inspire the visitors to Aalborg Zoo to make small improvements in their everyday lives, thereby contributing to a better world.

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