

Crocodile Specialist Group Steering Committee Meeting
Sofitel Royal Bay Hotel, Agadir, Morocco
 (12 May 2026)

Europe

Zoos

Within the European Association for Zoos & Aquaria's (EAZA) Reptile Taxon Advisory Group, a crocodylian subgroup is led by Fabian Schmidt (Zoo Basel, Basel, Switzerland). Samuel Martin (La Ferme aux Crocodiles, Pierrelatte, France) serves as the veterinary advisor for this group. It oversees all 9 currently existing managed breeding programs in Europe. In the future, plans include splitting the existing Reptile TAG into four independent TAGs, with crocodylians having their own TAG. Preparations for this change are in progress.

Meanwhile, the necessary bureaucratic procedures to upgrade the European StudBooks (ESBs) to European Ex-situ Programs (EEPs) were completed and finally approved for the still outstanding programs for the Chinese alligator, Cuban crocodile, African slender-snouted crocodiles, and Gharial.

Since the last CSG Working meeting, the EAZA Reptile TAG has met in person four times: 23 May 2024 in Valencia (Spain); 9 October 2024 in Leipzig (Germany); 14 May 2025 in Allwetterzoo Münster (Germany); and, 10 September 2025 in Lodz (Poland). Topics discussed included updates on the EEPs for Chinese alligators by Norbert Fritsch, Siamese crocodiles by Gonzalo Fernandez Hoyo, African dwarf crocodiles by Franziska Franke-Gerth, and African slender-snouted crocodiles by Francois-Pierre Huyghe. There were more detailed reports on the history of Cuban crocodiles in the EAZA regions and future conservation challenges by Ivan Rehak. Michel Ansermet also presented the planned conservation project on West African crocodiles (*Crocodylus suchus*) in Morocco. A new enclosure for Gharials in Biotropica Val-de-Reuil (France) was presented by Francois-Pierre Huyghe.

Otherwise, a large focus of the crocodylian subgroup in the EAZA Reptile TAG was the sustainable use and conservation of crocodylia: Several lectures and discussions were held during the meetings. The reason is that some educational labels in many zoos still suggest that the trading of crocodile skins for the leather industry is the major problem in crocodile conservation. This assumption was contradicted, the history of crocodylian conservation was explained, successful examples of sustainable-use conservation projects were shown, relevant literature was cited, and zoos were asked to revise these education panels accordingly. Such lectures were also given outside the EAZA Reptile TAG, including in the AZA Herp TAG meeting, the conservation working group of VdZ (Verband der Zoologischen Gärten; Association of zoos in German-speaking countries), and the European Croc Networking Meeting.

Cologne Zoo, with CSG members Thomas Ziegler and Anna Rauhaus, continued the vital work on the breeding and release of Philippine crocodiles. In 2025, an animal was also sent to Australia to support its breeding program. The Cologne-hatched crocodiles that were flown back to the Philippines in previous years, initially to the Philippine Crocodile Research and Education Center (PCREC) run by the cooperation partners at Crocodylus Porosus Philippines Inc. (CPPI) in Barangay Jaboy, Pilar, thrive in the Siargao Island Protected Landscape and Seascape (SIPLAS). The center is adjacent to the habitat - "Paghungawan Marsh" - so that direct release into the wild is possible whenever the cooperation partners wish. Cologne Zoo continued supporting the Mabuwaya Foundation in the Philippines in 2025, which is also committed to the conservation of Philippine crocodiles; the foundation visited Cologne Zoo in autumn 2025. The conservation work was also spread in the media and can be seen on YouTube: <https://youtu.be/MIETcRFgYIQ>.

The main achievement within the Siamese crocodile EEP has been an administrative, but important one: the establishment of a Species Committee to support the program's goals. The addition of Shaun Foggett as Assistant EEP Coordinator with editing rights on the studbook is particularly welcomed. There was no breeding within the EEP during 2025. The Siamese crocodile EEP faces several challenges, which Gonzalo Fernandez Hoyo, as EEP coordinator, is working to address: 1. **Genetics:** Many Siamese crocodiles in farms are potentially hybrids. These animals have been the source stock for European Zoos and some hybrids have already been identified in the European zoo population and phased out of the program. Franziska Franke-Gerth from Leipzig University is currently testing the 7 untested specimens in the program. Samples collected in the past by Prof. Jan Robovsky from the University of South Bohemia will prevent the need for recapturing and resampling certain individuals. 2. **Lack of Interest in the Species:** Several EAZA institutions have expressed their intention to discontinue keeping the species. 3. **Small Population:** Only 9 European EAZA institutions currently keep the species. Asian EAZA members such as Singapore (with a large group) and Taipei (with specimens confiscated from illegal trade) do keep it and may serve as partners in *in-situ* conservation efforts.

The EEP coordinator, Gonzalo Fernandez Hoyo, has been in contact with numerous *ex-situ* and *in-situ* conservation organizations in the USA, Australia, Laos, and Cambodia to learn about the species' status in the wild. Most notably, he attended the Siamese Crocodile Regional Meeting in Bangkok, Thailand, in August 2025. Siamese crocodile conservation and reintroduction efforts in the country are mainly led by passionate members of the farming and leather industries, but

progress is slow with the Thai Government concerned about reintroducing due to the potentially dangerous nature of the species, attitudes of local communities as well as the purebred and disease status of the animals to be reintroduced. Some EAZA institutions have recently been involved in direct conservation actions in the Cardamom Mountains and Phnom Tamao Wildlife Sanctuary in Cambodia. The plan is to involve EEP holders in *in-situ* actions, ideally organized by the EEP itself. The EEP coordinator is also currently exploring the possibility of incorporating some initiatives into the EAZA Wetlands Campaign.

Crocodiles of the World (Brize Norton, UK), with Shaun Foggett, Colin Stevenson and Clare Wilkie, was writing and managing the Crocodiles of the World "Crocodilian Husbandry Course" and continue to develop a crocodile husbandry resource. Crocodiles of the World continues data collection on the behaviour of its *Crocodylus siamensis* family group as part of standard practice, due to the significant welfare benefits they observe. The behavioural data will be used to produce a case study to inform practice, as other zoos may want to facilitate crocodylian family groups in line with EAZA Reptile TAG recommendations.

Colin Stevenson and Clare Wilkie contributed to an article titled "Breeding the Dwarf Crocodile in Captivity". The article was published in Exotics Keeper magazine in May 2025 (<https://exoticskeeper.com/blog/breeding-dwarf-crocodile-in-captivity/>).

Clare Wilkie, as a new Research Liaison for Reptilian and Amphibian Working Group, spoke at the February 2026 RAWG conference on "Putting Zoo Research into Action". She discussed zoo case studies, data dissemination methods, BIAZA (British and Irish Association of Zoos and Aquariums) resources for supporting zoo and aquarium research, and provided a BIAZA Research Committee update, of which she's an active member. Clare is currently working on a crocodylian body-score document - feedback and edits will be provided by other CSG members at Crocodiles of the World and the BIAZA RAWG. It will be available for BIAZA-accredited zoos to start using, but will be shared with wider networks as needed.

Jérémy Lemaire and Rosanna Mangione conducted practical training sessions on veterinary procedures at the "Zoo de Guyane" in French Guiana for local veterinarians and veterinary assistants (2025).

Research

Shaun Foggett, Colin Stevenson, and Clare Wilkie were working together with Sally Isberg on a paper documenting baseline Vitamin D levels in wild and captive crocodiles within their home range. They also started a study on crocodylian nutrition, which is still in its very early stages. Furthermore, Colin Stevenson, with the help of Charlie Manolis, completed the Mugger Action Plan and continues to finalize the Mugger Red List assessment with Sally Isberg. He participated in the CSG Communications Working Group and the Living With Crocodilians Working Group. He gave various college, university, and public talks on crocodiles and their conservation, including "Human Crocodile Conflicts" at the BIAZA Conservation Conference in October 2025.

Crocodiles of the World has further supported crocodylian-related research projects over the past year, including:

- "Learning from nature: crocodylian surface structures as models for low-wear, high-traction engineering surfaces," a project that uses 3D scanning of the skin surface over osteoderms to design and engineer a Mars rover tire (Primary researcher - Sunil Dhillon, University of Warwick);
- "Microstructural and crystallographic evolution of eggshells", a project that aims to investigate the microstructures of crocodylian eggshells to determine their relationship with birds and dinosaurs (Primary researcher - Seung Choi, Seoul National University);
- "Vanishing giants: understanding the ecological and evolutionary impacts of losing the largest crocodylians through biomechanical analyses". This project uses CT scanning to investigate crocodylian skull structure (Primary researcher: Patrick Hennessey, University College London); and,
- "Crocodilian locomotion," with multiple projects at both professional and student levels, including investigations into how reptiles use their limbs during walking and running, and the spinal muscles involved in supporting locomotion (Primary researcher: John Hutchinson, Royal Veterinary College).

In May 2025, Jérémy Lemaire and Rosanna Mangione presented the results of their long-term ecotoxicology study on the four caiman species and the use of caimans as bioindicators of environmental mercury contamination to local government agencies in French Guiana. Jérémy Lemaire also received funding from the Austrian Science Fund (FWF), securing a fully funded PhD position and ensuring the continuation of the ongoing project until at least 2030. Additionally, Rosanna Mangione and Jérémy Lemaire were (co-)beneficiaries of Winter CrocFest 2024 for their Black caiman population study and health assessment in French Guiana. The funds were shared with the Siamese Crocodile Conservation Project in Laos (Steven Platt & Lonnie McCaskill). At this CrocFest, the \$US1 million milestone for funds raised since CrocFest began was surpassed.

Meetings, workshops and outreach

The European Croc Networking Meeting 2025 in Berlin was organized by Phoebe Griffith along with the ECNM organizing committee and CSG members Sarah Carpentier and James Szewczyk. The meeting was hosted by the Berlin Zoo and Aquarium and the Leibniz Institute of Freshwater Ecology and Inland Fisheries. This meeting had 58 attendees from 16 countries, representing all career stages, from newcomers to those with decades of experience. Talks and workshops reflected the international collaborations of work based in Europe, covering research, conservation,

management, husbandry, and education. Sarah Carpentier will lead the organization of the next meeting, scheduled for spring of 2027.

The Wetlands and Integrated Study of Ecology (WISE) Lab, and the Clemson University Belle W. Baruch Institute of Coastal Ecology and Forest Science (BICEFS), in collaboration with the European Croc Network, will host a five-day hands-on workshop in April 2026 in South Carolina, covering an array of topics of wild alligator research and management. This workshop will host 8 early-career researchers based in Europe and will address the importance of avoiding parachute science when seeking to work with crocodylians elsewhere.

In 2025, Jérémy Lemaire and Rosanna Mangione began collaborating with “Passagers des Sciences”, a French educational initiative that raises awareness about environmental issues and sustainable development by creating educational materials broadcast throughout the school year and accessible through teacher registration. So far, 200 French classes (6000 students) have signed up for the program. Students of all grade levels are introduced to neotropical caimans and their ecological role, ASGM-related heavy metal contamination and its pathways, and the effects of mercury contamination at various levels, from the individual to the population.

Simon Pooley (Birkbeck, University of London, UK) continues to campaign for the removal of illegal farming, fishing, and grazing on the Phongolo floodplain inside Ndumo Game Reserve, a Ramsar site provincial game reserve in KwaZulu-Natal Province, South Africa. The section of the floodplain inside the reserve is the only protected section of the country's most diverse river floodplain and was formerly the ancestral breeding ground for crocodiles. His father's, Tony's, experimental crocodile restocking station was located here. He also advised on various student and other projects, including Antonia Sophie Geibel's study of HCC in Uganda, and Bobby Cross's HCC poster.

Talks related to crocodylians

Jailabdeen Aji (Gharial Ecology Project, Madras Crocodile Bank Trust, India): Gharial Conservation: revisiting translocations and reimagining headstarting (online). 1 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin

Michel Ansermet (Aquatris Lausanne, Schweiz): *Crocodylus suchus* in Morocco. 14 May 2025 at Reptile TAG Mid-year Meeting, Münster

Miriam Boucher (Clemson University, USA): Life in Plastic: Recovery and Characterization of Alligator-ingested Microplastic. 2 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin

Gonzalo Fernandez Hoyo (Zoom Torino, Italy): Siamese Crocodile EEP update. 9 October 2024 at EAZA Annual Conference, Leipzig and 10 September 2025 at EAZA Annual Conference, Lodz

Camille Francois (European College of Zoological Medicine): Skin diseases in crocodylians. 2 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin

Franziska Franke-Gerth (Zoo & Universität Leipzig): EEP update on African dwarf crocodiles (*Osteolaemus*). 9 October 2024 at EAZA Annual Conference, Leipzig

Norbert Fritsch (Neunkirchen Zoo, Germany): Chinese alligator EEP update. 23 May 2024 at Reptile TAG Mid-year Meeting, Valencia

Axelle Gardin (PALEVOPRIM, UMR 7262 CNRS & Université de Poitiers, France): Habitat Shifts in Crocodylians in Changing Paleoenvironments: A $\delta^{18}O$ perspective from the Shungura Formation (Ethiopia). 1 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin

Bobby Greco (Clemson University (WISE Lab), USA, and the Crocodile Research Coalition, Belize): Assessing post-release success of head-started American crocodiles (*Crocodylus acutus*) in Lago Enriquillo, Dominican Republic (online). 1 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin

Phoebe Griffith (Leibniz Institute of Freshwater Ecology and Inland Fisheries, Germany): A short introduction to cultural dimensions in crocodylian research and conservation. 2 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin

Patrick Hennessey (University College London, UK): Workshop on using modern technology to study crocodylian skulls. 1 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin

René Honegger (retired Curator of Reptiles Zoo Zurich): Das verschollene Memorandum von 1956 zum internationalen Schutz von Krokodilen – eine unbefriedigende Spurensuche. 20 April 2024 at Jahrestagung der Arbeitsgemeinschaft Literatur und Geschichte der Herpetologie und Terrarienkunde, Deutsche Gesellschaft für Herpetologie und Terrarienkunde, Münster

René Honegger (retired Curator of Reptiles Zoo Zurich): Beitrag zur Kulturgeschichte der Krokodile – Dokumente aus meinem Fundus. 17 May 2025 at Jahrestagung der Arbeitsgemeinschaft Literatur und Geschichte der Herpetologie und Terrarienkunde, Deutsche Gesellschaft für Herpetologie und Terrarienkunde, Stuttgart

Francois-Pierre Huyghe (Biotropica): Update on EEP for slender-snouted crocodiles. 10 September 2025 at EAZA Annual Conference, Lodz

Francois-Pierre Huyghe (Biotropica): New Facility for Indian gharials at Biotropica. 10 September 2025 at EAZA Annual Conference, Lodz

Emma Jarlbeck (Lund University, Sweden, Krokodile Zoo, Denmark and The Mabuwaya Foundation Inc, Philippines): Assessing public perception and its impact on the conservation of the Philippine crocodile. 1 August 2025 at 7th

- Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Lona Lalic (Lund University): Investigating Vicarious Trial and Error in the American Alligator: implications for the evolution of planning and simulation. 1 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Jérémy Lemaire (University of Vienna): A Challenging Environment: How mercury disrupts caiman stress response. 1 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Jérémy Lemaire (University of Vienna, Austria): Effects of mercury on the stress response of wild caiman. 16 July 2025 at the Annual conference of the Society of Behavioral Endocrinology, University of British Columbia UBC, Vancouver, Canada
- Rosanna Mangione (University of Vienna, Austria): Decrease of corticosterone baseline levels in a mercury-contaminated apex predator, 16 July 2025 at the Annual conference of the Society of Behavioral Endocrinology, University of British Columbia UBC, Vancouver, Canada
- Alexander Meurer (DGHT AG Krokodile): Chinese alligator breeding. 2 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Antonio Nogueira (Wildtrack by ATS): Wildtrack by Advanced Telemetry Systems: our platinum supporter 2025. 1 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Cristian Pizzigalli (University of Porto and the University of Exeter): The Crocodile's Maze: navigating a human-made world. 2 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Dietrich Pohl (Ambassador, Embassy of the Federal Republic of Germany Bamako): Man and crocodile in the Sahel. 2 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Anna Rauhaus (Cologne Zoo, Germany): Together for the Philippine Crocodile- a One Plan Approach initiative linking European Zoos with conservation in the Philippines. 1 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Stephan Reber (Lund University, Sweden): Crocodylian cognition as they key to understand the evolution of decision making. 2 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Stephan Reber (University of Lund, Sweden): Cognitive evolution in tetrapod dinosaurs - inferences from extant archosaurs. 10 November 2025, invited speaker at the Behavior & Cognition Seminar, University of Vienna, Austria.
- Ivan Rehak (Zoo Prague): The story of the Cuban crocodile (*Crocodylus rhombifer*): A challenge for conservation and *ex situ* management. 10 September 2025 at EAZA Annual Conference, Lodz
- Ivan Rehak & Veronika Zahradnickova (Zoo Prague): Cuban crocodile (*Crocodylus rhombifer*) in EAZA. 10 September 2025 at EAZA Annual Conference, Lodz
- Mason Scarpa (University of Vienna, Austria): Investigation of the contribution of host-associated and environmental microbiomes to the mercury detoxification strategies of two caiman species in French Guiana. 1 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Fabian Schmidt (Zoo Basel): How a crocodile can contribute as handbag to conservation, 23 May 2024 at Reptile TAG Mid-year Meeting, Valencia, 9 October 2024 at EAZA Annual Conference, Leipzig, 25 April 2025 at Association of Zoos & Aquariums (AZA) Herpetology Taxon Advisory Group (TAG), Denver, 16 May 2025 at VdZ (Verband der Zoologischen Gärten) AG Artenschutz, Augsburg, 1 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Alvaro Velasco (Chairman of Venezuela Crocodile Specialist Group (GECV) and Associated researcher of FUDECI, Venezuela): Orinoco crocodile (*Crocodylus intermedius*) conservation program in Venezuela: Our Reality. 1 August 2025 at 7th Annual European Croc Networking Meeting, Leibniz-Institut für Gewässerökologie & Binnenfischerei und Zoo Berlin
- Clare Wilkie presented on *Alligator mississippiensis* grouping behaviour at a BIAZA 'ECTO' conference in 2025, which focuses on quantifying hatchling group cohesion, parental attendance, and the potential effects of visitor presence. The publication is currently under review for publication at JZAR journal.

Publications

- Brackhane, S., Fukuda, Y., Xavier, F. M., de Araujo, V., Gusmao, M., Trindade, J., ... & Webb, G. (2024). Wildlife conservation through traditional values: alarming numbers of crocodile attacks reported from Timor-Leste. *Oryx*, 58(3), 347-350.
- Caron Delbosc, N., Thévenet, J., Grosjean, N., Méès, L., Boyer, N., Schneider, M., ... & Mathevon, N. (2025). Temporal integration and decision-making in crocodiles. *Biology Open*, 14(5), bio061844.
- Caron-Delbosc, N., Boyer, N., Mathevon, N., & Grimault, N. (2025). Crocodile mothers' response to hatching calls. *Animal Behaviour*, 220, 123040.
- Delbosc, N. C., Boyer, N., Mathevon, N., & Grimault, N. (2024). Sound and vibration control crocodile hatching. *Behaviour*, 161(10), 769-795.
- Dittrich, C., Mangione, R., Marquis, O., Ringler, E., & Lemaire, J. (2025). Ecological and Behavioral Implications of Multiple Paternity in the Smooth-Fronted Caiman in French Guiana. *Ecology and Evolution*, 15(4), e71337.

- Ferrara, C.R., Jorgewich-Cohen, G., Sousa-Lima, R., Doody, S., & Reber, S.A. (2025). The Diversity and Evolution of Vocal Communication in Nonavian Reptiles. *Annual Review of Ecology, Evolution, and Systematics*, 56, 521-542. <https://doi.org/10.1146/annurev-ecolsys-102723-064223>.
- Honegger, R.E. (2024). Das verschollene Memorandum von 1956 zum internationalen Schutz von Krokodilen – eine unbefriedigende Spurensuche. *Sekretär* 24:21-50.
- Honegger, R.E. (2025). Alligatoren-Schlachten im Amazonasstrom – Die Dokumentation des Schweizer Herpetologen Gottfried Hagmann. *Sekretär* 25:26-49.
- Jarlback, E. B. (2024). Assessing public perception and its impact on the conservation and reintroduction of the critically endangered Philippine crocodile (*Crocodylus mindorensis*). <https://lup.lub.lu.se/student-papers/search/publication/9175880>
- Jensen, T.R., Jacobs, I., Kverková, K., Lalić, L., Polonyiová, A., Stehlík, P., Reber, S.A., & Osvath, M. (2025). T. rex cognition was T. rex-like—A critical outlook on diverging views of the neurocognitive evolution in dinosaurs. *The Anatomical Record*. doi.org/10.1002/ar.70074.
- Lemaire, J., Bustamante, P., & Shirley, M. H. (2024). Preliminary assessment of blood mercury contamination in four African crocodile species. *Environment International*, 190, 108877.
- Pooley, S. (2024). Coexisting with Reptiles, special issue of *Current Conservation*, 17.4, Introduction (Simon Pooley) plus five articles. *Current Conservation*: <https://www.currentconservation.org/tag/coexistence-with-reptiles/>
- Pooley, S. (2025). Research and management of the Nile crocodile (*Crocodylus niloticus*) in Ndumo Game Reserve. *African Journal of Wildlife Research* 55 (sp1), <https://doi.org/10.3957/056.055.0142>.
- Wilkinson, A., Reber, S.A., Root-Gutteridge, H., Dassow, A. & Whiting, M.J. (2025). Cold-blooded culture? Assessing cultural behaviour in reptiles and its potential conservation implications. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 380(1925), <https://doi.org/10.1098/rstb.2024.0129>
- Ziegler, T. & Manalo, R. (2026) IUCN's „One Plan Approach“ Philippine Crocodile Conservation Project wins „Reverse the Red“ 2025 Species Pledge Video contest. - WAZA (World Association of Zoos and Aquariums) News Issue #1 2025, pp. 24-26.

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