

**Crocodile Specialist Group Steering Committee Meeting**  
**Double Tree Hilton, Darwin, Australia**  
(15 April 2024)

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**Europe**

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**Zoos**

Within the European Association for Zoos & Aquaria's (EAZA) Reptile Taxon Advisory Group there is a crocodylian subgroup led by Fabian Schmidt (Zoo Basel, Basel, Switzerland). Samuel Martin (La Ferme aux Crocodiles, Pierrelatte, France) is the veterinary advisor for this group. This group oversees all existing managed breeding programs in Europe.

After the new European Regional Collection Plan was introduced in detail in the last European report, the procedures to implement it were started. The necessary bureaucratic procedures to upgrade the European StudBooks (ESBs) to European Ex-situ Programmes (EEPs) were completed and finally approved for the programs for Philippine crocodile, Siamese crocodile, African Dwarf crocodiles and Tomistoma. They are still outstanding for the Chinese alligator, Cuban crocodile, African Slender-snouted crocodiles and Gharial.

We had a change of program coordinator in the EEP for Siamese crocodiles. Jan Vasak from Jihlava stepped down and Gonzalo Fernandez Hoyo, with institutional support from Zoom Torino (Italy), took over. He is an experienced EEP coordinator and was responsible for the Tomistoma program for several years. He is already in contact with the SSP coordinator for this species, Lauren Gruny at St. Augustine Alligator Farm, and is also to establish contacts to *in-situ* projects, namely with the former SSP coordinator Lonnie McCaskill who remains active in WCS *in-situ* projects, but also with Philipp Wagner from Allwetterzoo Münster and Romain Legrand from Raising Phoenix, a Cambodian-based NGO which is reintroducing the species in Siem Pang Wildlife Sanctuary near the border to Laos. In addition, Gonzalo is in contact with 8 non-EAZA institutions keeping 22 animals. Within EAZA, only 23 individuals remain in 12 institutions. One of the biggest challenges in this species is that both purebred and hybrid animals occur in farms in Southeast Asia but also in the small European population. As far as known there is only one potential pure breeding pair in Europe, which is kept at Terra Natura in Benidorm (Spain). For most individuals, the exact genetic status is not known. Therefore, it is one of the most important goals in this program to establish a genetic study for these captive animals.

Since the last CSG Working meeting, the EAZA Reptile TAG met three times in person, on 29 September 2022 in Albufeira (Portugal), on 30 May 2023 in Biotropica Val de Reuil (France) and 13 September 2023 in Helsinki (Finland). Topics discussed included the introduction to Phnom Tamao Breeding Facility for *Crocodylus siamensis* by Iri Gill from Chester Zoo, a new enclosure for subadult *Gavialis gangeticus* by Francois Huyghe from Biotropica Val de Reuil and updates and perspectives on the monitoring of *Crocodylus suchus* and the programs for African Slender-snouted crocodiles as well as Tomistoma, for which new holders are eagerly wanted. A more comprehensive report including the history and situation *in-situ* was given by Ivan Rehak on Indian Gharials. As usual, practical examples were given for transportation of large individual crocodiles, this time Zoltan Molnar reported on a large *Alligator mississippiensis* from Tierpark Berlin to Budapest Zoo. Guido Westhoff from Hagenbeck Tierpark Hamburg reported on the loss of a *Crocodylus niloticus* through accumulation of foreign objects in the stomach which resulted in a discussion of potential measures to protect crocodylians from the influence of visitors. Jan Vasak from Jihlava Zoo presented on one hand about problems of nesting in a female Siamese crocodile, on the other on the first data on a successful natural reproduction of Chinese alligator in an EAZA institution.

Jérémy Lemaire and Rosanna Mangione held practical training sessions for zoo staff on crocodylian capture and constraint at Martinique Zoo (2022) and "Zoo de Guyane", French Guiana (2023).

After the successful repatriation of two Philippine crocodiles (*Crocodylus mindorensis*) in 2020, another three animals, hatched and mother-reared in 2021 at Cologne Zoo, were also released in the summer of 2023. As with the last time, the repatriation took place in cooperation with the partners in the Philippines, *Crocodylus porosus* Philippines Inc. (CPPI). The animals are kept in large enclosures with semi-wild conditions in Tarlac before they will be moved to Paghungawan Marsh Semi-wild enclosure and Education Center for Philippine Crocodiles at Siargao Island, where they can acclimatize to their future life in the wild.

The repatriation was carried by our Thomas Ziegler, Curator at Cologne Zoo and his assistant Anna Rauhaus. Thomas Ziegler was invited as plenary speaker to the 3rd Forum on Crocodiles on the Philippines in November 2022 in Manila.

There, he prepared the repatriation of the animals with the Philippine authority and attracted the attention of Philippine TV, which accompanied the repatriation of the animals. In addition, members of the program continue to financially support the Mabuwaya Foundation, which focuses on crocodile conservation in the North of the Philippines, whereas CPPI covers the southern part.

## Research

Phoebe Griffith is currently working on a study on the cultural significance of crocodilians worldwide, with Sebastian Brackhane, among others. She continues to support Gharial conservation and research in Nepal, and is developing future Gharial conservation work in collaboration with Nepal's Department of National Parks and Wildlife Conservation, as well as the National Trust for Nature Conservation.

Phoebe also chairs the European Croc Network, which held its annual meetings in October 2022 and October 2023, and the Early-Career Croc Network for Asia, which has a monthly online meeting.

In July 2022, Jérémy Lemaire and Rosanna Mangione received funding from local governmental agencies in French Guiana to secure their long-term study on the local four caiman species in that country. In 2023, Rosanna Mangione additionally received National Geographic funding for her ongoing Black caiman study in French Guiana.

Simon Pooley guest edited "Coexisting with Reptiles", special issue of *Current Conservation*, 17.4, (2024), available [here](#), and contributed to several chapters, some including crocodile-related material of IUCN (2023). *IUCN SSC guidelines on human-wildlife conflict and coexistence*. First edition. Gland, Switzerland: IUCN.

Colin Stevenson continued to help maintain the CSG website and is part of the CSG's Social Media team. Colin undertook Red List Assessor training and is currently working on the Mugger Red List account, and rewrote the Mugger Action Plan, along with colleagues from South Asia. Colin is also part of Mugger Conservation Genetics group to move Mugger conservation and research projects forward, instigated by Asghar Mobaraki in Iran and Thomas Ziegler in Germany. Colin was also a co-author on the global *Tomistoma schlegelii* Red List assessment published in late 2023.

## Talks related to crocodilians

Phoebe Griffith: Presentation to Britain-Nepal Society on Gharial Conservation in Nepal, November 2022, London. In 2023, Phoebe gave a presentation at the Student Conference on Conservation Science in Cambridge, UK, and at the Wildlife Research and Conservation Conference in Berlin, Germany, both on evaluation of Gharial head starting program success in Nepal.

Rene Heedegaard: Rene gave a presentation at the European Croc Networking meeting in October 2023 on Orinoco crocodile conservation, a collaboration with Alvaro Velasco.

Jon Hutton: Jon gave a presentation at the European Croc Networking meeting in October 2023 on sustainable use of crocodilians for conservation.

Jérémy Lemaire: Jérémy and Rosanna provided a podcast episode for the CNRS (French National Center for Research) on their ecotoxicology project on *Paleosuchus trigonatus* in French Guiana.

Rosanna Mangione: Rosanna gave a presentation at the European Croc Networking meeting in October 2022, and at the Austrian Herpetological Society in January 2023, both on Black caiman in French Guiana. Rosanna gave a series of workshops in 2023 on crocodilians within the framework of "Wildlife Crime", a project by the Natural History Museum Vienna, Austria, in collaboration with the UNODC, WWF Austria, and others.

Simon Pooley: "Beyond incident response in mitigating human-crocodylian conflicts", in Paulino Ponce's series of HCC talks, December 2023. "Disentangling coexistence and conflict in human-wildlife interactions", Zoological Society of London seminar, May 2023 (case studies from Simon Pooley's croc fieldwork in Gujarat). "Human-crocodilian interactions: conflict, compassion and coexistence", International Conference on Human-Wildlife Conflict & Coexistence, on the panel Simon Pooley devised and chaired, entitled 'A focus on reptiles', which included 2 croc papers, which can be viewed [here](#). "Crocodiles and Cultures", CWS Wildlife Chronicles, webinar with Rom Whitaker hosted by Yashendu Joshi. You can see this on YouTube [here](#). "Lessons in compassion and coexistence with crocodiles", seminar for Coexistence Consortium, talk on YouTube [here](#). Simon participated with Professor Amy Dickman (WildCRU, Oxford) and Professor Adam Hart (University of Gloucestershire) in the panel discussion "Living with Dangerous Wildlife" at the Cheltenham Science Festival, UK, in late summer 2022.

Colin Stevenson: Colin gave a presentation at the European Croc Networking meeting in October 2023 on behalf of Asghar Mobaraki and Eltham Abtin on Iranian crocodiles.

Clare Wilkie: Clare gave a presentation at the European Croc Networking meeting in October 2023 on parental care in captive crocodilians.

## **Publications**

Ashepet, M.-G., Dahdouh-Guebas, F., Redpath, S., Pooley, S. & Huger, J. (2023), The state and perceptions of human-crocodile interactions around Murchison falls conservation area, Uganda, *Human Dimensions of Wildlife*, 1-16.

Griffith, P. *et al.* (2022), Using functional traits to identify conservation priorities for the world's crocodylians, *Functional Ecology*, pp. 1-13.

Jensen, T.R., Anikin, A., Osvath, M., & Reber, S.A. (2024), Knowing a fellow by their bellow: acoustic individuality in the bellows of the American alligator, *Animal Behaviour*, 207, 157-167.

Khadka, B.B., Bashyal, A., & Griffith, P. (2024), Population changes in Gharial (*Gavialis gangeticus*) vary spatially in Chitwan National Park, Nepal, *Reptiles & Amphibians*, 31(1).

Lemaire, J., Brischoux, F., Marquis, O., Mangione, R., Caut, S., Brault-Favrou, M., ... & Bustamante, P. (2022), Relationships between stable isotopes and trace element concentrations in the crocodylian community of French Guiana, *Science of the Total Environment*, 837, 155846.

Lemaire, J., Mangione, R., Caut, S. & Bustamante, P. (2024), Mercury biomagnification in the food web of Agami Pond, Kaw-Roura Nature Reserve, French Guiana (IN PRESS).

Lemaire, J. (2023), Using crocodylians for monitoring mercury in the tropics, *Ecotoxicology*, 32(8), 977-993.

Mathevon, N. (2023). *The Voices of Nature: How and Why Animals Communicate*. Princeton University Press.

Mobaraki, A., Erfani, M., Abtin, E., Brito, J. C., Tan, W. C., Ziegler, T. & D. Rödder (2023), Last chance to see? Iran and India as strongholds for the Mugger Crocodile (*Crocodylus palustris*), *Salamandra* 59(4),327–335.

Pooley, S. (2022), The challenge of compassion in predator conservation, *Frontiers in Psychology*, 13.

Rehak, I. (2023). Looking back at the WAZA Gharial Resolution. WAZA News.

Thévenet, J., Kehy, M., Boyer, N., Pradeau, A., Papet, L., Gaudrain, E., ... & Mathevon, N. (2023), Sound categorization by crocodilians, *Iscience*, 26(4).

Thévenet, J., Papet, L., Campos, Z., Greenfield, M., Boyer, N., Grimault, N., & Mathevon, N. (2022), Spatial release from masking in crocodilians, *Communications Biology*, 5(1), 869.

Thévenet, J., Papet, L., Coureaud, G., Boyer, N., Levréro, F., Grimault, N., & Mathevon, N. (2023), Crocodile perception of distress in hominid baby cries, *Proceedings of the Royal Society B*, 290, 20230201.

Wilkie, C. J., Tellez, M., Jones, G., & Genner, M. J. (2024), Population genetic structure of Morelet's and American crocodiles in Belize: hybridization, connectivity and conservation, *Conservation Genetics*, 1-6.

Zeiräg, C., Reber, S. A., & Osvath, M. (2023), Gaze following in Archosauria—Alligators and palaeognath birds suggest dinosaur origin of visual perspective taking, *Science Advances*, 9(20), eadf0405.

Ziegler, T. (2023). The IUCN/SSC CPSG's One Plan Approach and the role of progressive zoos in conservation: case studies from herpetology. – Proceedings of the 14th national congress of the Italian Society for Herpetology, Torino, 195-222.

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