

BOOK OF ABSTRACTS
10TH WORLD CONGRESS OF HERPETOLOGY
5–9 August 2024

Compiled by
Indraneil Das



World Congress of Herpetology (WCH)



Institute of Biodiversity and Environmental Conservation
Universiti Malaysia Sarawak

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94300 Kota Samarahan
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COMPILER'S NOTES

The 10th World Congress of Herpetology is being held at the Borneo Convention Centre Kuching, in the State of Sarawak, Malaysia, 5–9 August 2024. The Congress is organised by the World Congress of Herpetology (<https://www.worldcongressofherpetology.org>) and the Institute of Biodiversity and Environmental Conservation (<https://www.ibec.unimas.my>), Universiti Malaysia Sarawak. The event is supported by Business Events Sarawak, Ministry of Tourism, Creative Industry and Performing Arts Sarawak, Sarawak Forestry Corporation, Sarawak Biodiversity Centre, AGARK DGHT, the Institute of Agriculture, University of Tennessee (UT AgResearch) and the Society for the Study of Amphibians and Reptiles.

A total of 1,481 abstracts of oral and poster papers were received at the website of the Congress (<https://2024wch10.com>), through an online conference management system (KonferenceX Content Management System), or came in via email. Only those submitted by registered delegates were included in this book of abstracts. Poster presentations include the full spectrum of herpetological topics, including subject material corresponding to Symposia. Also included are abstracts of Plenary Lectures, Special Presentations and Official Side Events.

Abstracts were formatted and lightly edited for content and style but did not undergo a full peer review. Any new taxon descriptions or other nomenclatural acts contained in this book of abstracts and programme should not be considered published in the sense of Article 8 of the International Code of Zoological Nomenclature (1999).

We welcome all delegates to the beautiful city of Kuching, Sarawak and to the 10th World Congress of Herpetology.



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colonial societies, and consider the implications of these types of significance for conservation of crocodylians, the complex biocultural relationships of crocs and people, and the socio-ecological systems humans share with them. In particular, we will consider the applied contexts in which the cultural role of crocs is essential for ethical and appropriate conservation and conflict management.

A-0690 (Oral)

The Once and Future Gharial: Retrospective and Future Projections to Improve Headstarting Success in Nepal

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Headstarting is a commonly used conservation intervention for gharial, with at least fourteen programmes of rear-and-release used throughout their range in India and Nepal. The theoretical underpinning of headstarting is to rear small life stages in captivity, thus avoiding high predation mortality in the wild and improving rates of recruitment into the adult population. Despite the widespread use of the technique in gharial, there is limited evidence that headstarting contributes to population recovery. For evidence-based gharial conservation, it is necessary to improve understanding of the past and potential contribution of headstarting as a conservation tool. Our understanding of a population into which headstarts are released can be outlined by a model of that system, representing our current theoretical understanding to create predictions of past dynamics, which can be tested against historical population data. This retrospective model can then be used to develop predictive models on which to base management decisions. To investigate the use of models as part of an adaptive management approach to gharial conservation, we present a case study of the Chitwan population in Nepal. I will discuss work that uses management, population, mortality and behavioural data to parameterize two models. The first model retrospectively considers how past changes in the management programme have led to changing success in the headstarting programme in Chitwan. The second model predicts future scenarios under different potential management interventions, identifying changes that should lead to improved population recovery. Taken together, the models show that headstarting alone is insufficient for population recovery in gharial in Chitwan, but with improved post-release survival it can be an essential tool to restore the adult population to a self-sustaining level. Our models can be used as a key component of a future adaptive management approach, informing management decisions, and identifying areas of uncertainty as key research priorities.

A-0691 (Oral)

Toxic Toads on the Silk Road: Speciation and Historical Invasions in a “Most-Wanted” Amphibian

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Past and present animal translocations make compelling examples of the human impact on biodiversity. Through continental-wide genomic and DNA-barcoding analyses, we retraced the evolutionary history of the Asian black-spined toad (*Duttaphrynus melanostictus*), a poisonous, globally invasive amphibian that currently threatens several biodiversity hotspots. We discovered a convoluted diversification complexified by hybridization and consisting of two ~7 Myo lineages, one in the Indian subcontinent (invasive in Wallacea), the other in Southeast Asia, which represents a new species (invasive in Madagascar). Remarkably, the Indonesian population originates from India, suggesting historical human-assisted dispersal, perhaps via the maritime silk road, which corroborates archeological evidence for millennia-long anthropogenic connections across the Gulf of Bengal. Our study calls to re-assess *D. melanostictus* under a two-species framework in invasion research and conservation, emphasizes the inaccuracy of standard molecular methods for species discovery, and illustrates how these commensal toads potentially became worldwide invaders long before modern times.

A-0692 (Oral)

Management of Snakebite Without Available Antivenom: Experience from Thailand

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Snakebite envenoming poses a serious and significant public health problem worldwide. In 2017, the World Health Organization (WHO) categorized snakebite envenomation as Category A in Neglected Tropical Diseases. Snakebite envenomation often requires hospitalization and can lead to substantial morbidity and mortality. While the majority of snakebite victims reside in Africa, Asia, and South America, the true extent of the problem remains unclear. Antivenom serves as the specific antidote for snakebite envenoming. However, it is not universally produced and available for all types of snakebite envenoming. In such instances, patients may receive conservative treatment and aggressive supportive care. This topic explores the clinical data and management of snakebite envenomation caused by snake species for which antivenoms are not available in Thailand, such as *Ovophis monticola*, *Ovophis convictus*, *Protobothrops mucrosquamatus* and *Protobothrops kelomohy*. The experiences from Thailand will be presented and discussed further to guide proper management strategies.

A-0694 (Poster)

A Multi-Omics Approach to the Toxin Evolution of True Vipers

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