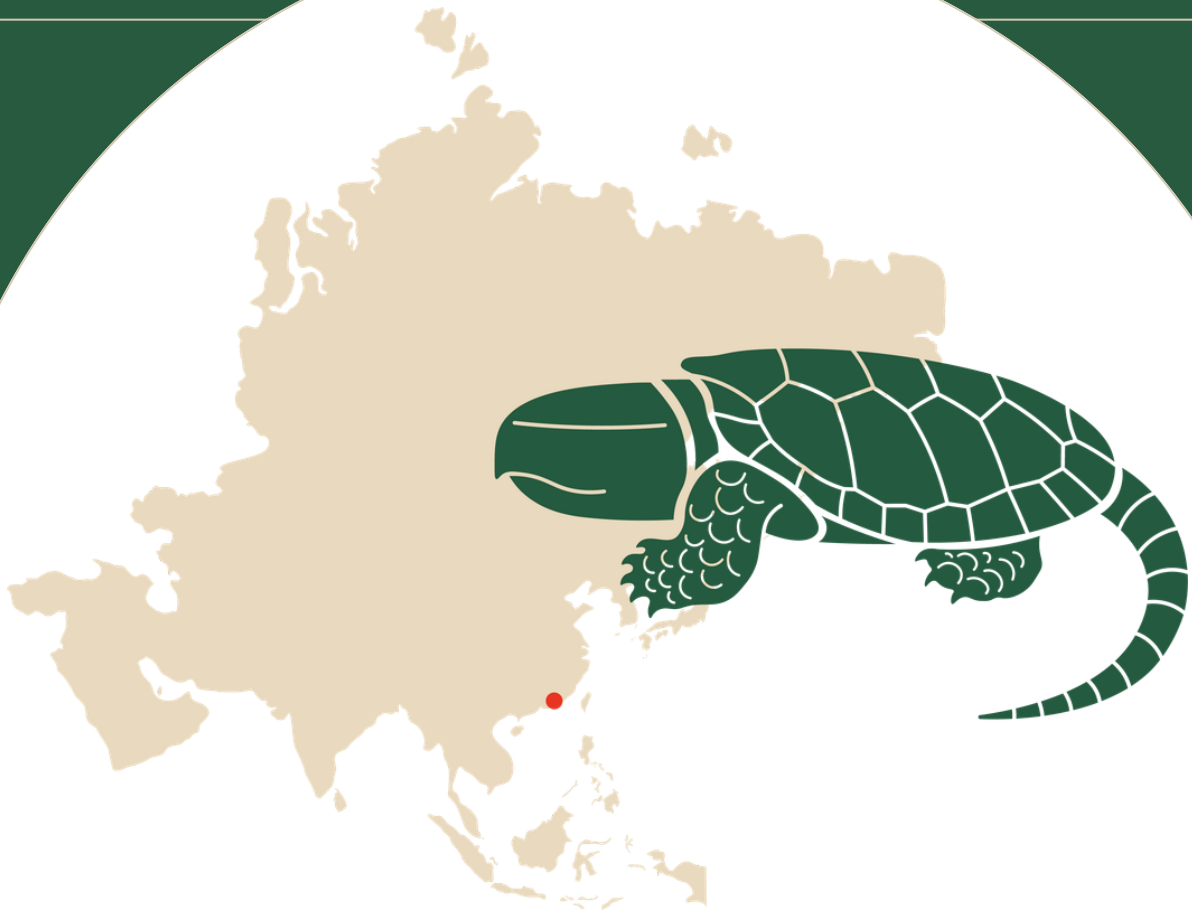


The 1st International Conference on Integrated Conservation of Asian Turtles



Organisers



Lingnan 嶺南大學
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DIVISION OF SCIENCE
LINGNAN UNIVERSITY



香港海洋公園保育基金
Ocean Park
Conservation Foundation
Hong Kong

27-30 MARCH 2026 HONG KONG, CHINA

CONFERENCE RUNDOWN

DAY 1 - Ocean Park Hong Kong

Time	Activities		Presenter	Venue
1100-1330	Arrival Registration			Applause Pavillon
1330-1400	Opening Ceremony			
1400-1450	Keynote Speech Fixing the Life Cycle: The Future of Turtle Conservation Is Community-Driven [K01]		Ricky Spencer	
1450-1715	Silent Auction			
1450-1715	Poster Presentations by secondary schools		Local Students	
1500-1600	Field trip	Group A		Ocean Park back-of-house facilities
1530-1630		Group B		
1600-1700		Group C		
1715-1730	Student Poster Competition Prize Presentation			Applause Pavillon

CONFERENCE RUNDOWN

DAY 2 - M+, West Kowloon



Wildlife Trade and Regulation



Applied Conservation and Management

Time	Activities	Presenter	Venue	Activities	Presenter	Venue
0845-0900	Arrival Registration					13/F Lobby
0900-0910	Housekeeping Announcement		MPL 1307			
0910-0950	Keynote Speech Facing the Reality: Challenges in Safeguarding Remnant Populations and Population Reestablishment of the Endangered Freshwater Turtles in Taiwan [K02]	Chen Tien-Hsi				
1000-1020	Current trade in Asian turtles at pet shops and online in Hong Kong [WT01]	John Allcock				
1020-1040	A Devastating Decade: Hong Kong’s Role in the Global Trade of Testudines [WT02]	Sam Inglis				
1040-1100	Overwhelming Preferences of Testudines by China’s Herpetofauna Pet Trade: Importance of Joint Effort in Conservation [WT03]	Kai Wang				
1100-1120	Disruption and resilience in turtle trade during COVID-19: evidence from market monitoring, import records, and seizures in Hong Kong [WT04]	Yik Hei Sung				
1120-1130	Break with refreshment					12/F
1130-1150	Spatio-temporal distribution and driving mechanisms of illegal turtle trade in Guangdong Province, China [WT05]	Yangchun Gao, Shijia Hu	MPL 1307	Interdisciplinary and reproducible action to protect turtles in poaching hotspots [AC05]	Astrid Andersson	MPL 1207
1150-1210	Progress and Status of Red Listing Efforts for Asian and Global Freshwater Turtles and Tortoises by the IUCN SSC Tortoise and Freshwater Turtle Specialist Group [WT06]	Craig Stanford		Progress Toward the Reintroduction of the Rote Turtle: An Integrated Small-Island Approach Combining Community Livelihoods, Climate Adaptation, and Spatial Planning [AC06]	William Marthy	

CONFERENCE RUNDOWN

DAY 2 - M+, West Kowloon

- Wildlife Trade and Regulation
- Applied Conservation and Management
- Threats and Conservation Challenges

Time	Activities	Presenter	Venue	Activities	Presenter	Venue
1210-1230	Trade in Calipee: A Pervasive Yet Under-recognized Threat to Softshell Turtles in South Asia [WT07]	Ramya Roopa	MPL 1307	Engaging Youth Communities through Capacity Building Approach to Safeguard Native Freshwater Turtles [AC07]	Ray Leung	MPL 1207
1230-1250	Freshwater turtle exports from Indonesia: insights from CITES trade data and national protection regulations [WT08]	Maslim As-singkily		Protecting Turtles as Heritage: The Role of Zooarchaeology in Conservation Practice [AC08]	Jada Ko	
1250-1400	Lunch (included)					12/F
1400-1420	When Is Commercial Captive Breeding Feasible? Developing a Biological Suitability Score for Tortoises and Freshwater Turtles [WT09]	Fengjing Peng	MPL 1307	Study of Indian Softshell Turtle in Chitwan National Park, Nepal [AC09]	Shyam Kumar Pun	MPL 1207
1420-1440	Overview of turtle conservation in Hong Kong and prospect for the future [TC01]	Michael Lau		Designing Survey Frameworks for Rare and Hard-to-Detect Chelonians: Inferences from <i>Manouria emys</i> [AC10]	Thomas Akre	
1440-1500	Golden Coin Turtle Conservation, A Challenge at every turn. The DRA story. [TC02]	Paul Crow				
1500-1600	Group Photo and transit to Kadoorie Farm and Botanic Garden (arranged by ICAT)					Car Park, M+
1600-1800	Field trip to captive breeding facilities					Kadoorie Farm and Botanic Garden
1800-1845	Transit to City Centre					Kowloon Park

CONFERENCE RUNDOWN

DAY 3 - M+, West Kowloon

- Rehabilitation and Reintroduction of Asian Turtles
- Threats and Conservation Challenges
- Ecology and Behaviour of Asian Turtles

Time	Activities	Presenter	Venue	Activities	Presenter	Venue
0845-0900	Arrival Registration					13/F Lobby
0900-0910	Housekeeping Announcements		MPL 1307			
0910-0950	Keynote Speech From Doom to Bloom: Holistic and Innovative Approaches for Population Recovery of Tortoise and Freshwater Turtles in Bangladesh [K03]	Shahriar Caesar Rahman				
1000-1020	Initiating science-based conservation breeding program of critically endangered Malayan Giant Turtle (<i>Orlitia borneensis</i>) in Indonesia [RR01]	Andreas Bandang Hardian				
1020-1040	Reproductive Cycle Monitoring of Captive snail-eating turtles <i>Malayemys macrocephala</i> using Plasma vitellogenin and Radiography [RR02]	Kritsakorn Mangkang		The fight to end illegal and unsustainable trade in tortoises and freshwater turtles – are we winning? [TC03]	Chris R. Shepherd	MPL 1207
1040-1100	Diagnostic pathology: a tool for turtle conservation [RR03]	Elliott Sinming Chiu		Integration of Clinical and Laboratory Approaches for Disease Surveillance and Healthcare Programs for Captive Turtles in Mandai Wildlife Group [TC04]	Chua Hwee Hoon Delia	
1100-1120	Conservation-Oriented Clinical Management of Asian Turtles Seized from Illegal Wildlife Trade in Bangladesh [RR04]	Joytu Kumar Mondal		Strengthening Regional Freshwater Turtle Conservation through Capacity Building and Collaborative Networks at Mandai Wildlife Group [TC05]	Luke Harding	
1120-1130	Break with refreshment					
1130-1150	Rescue and Rehabilitation: A Tool for the Conservation of the Freshwater Turtles of the Ganga River Basin [RR05]	Ashish Panda	MPL 1307	Pathogen Surveillance in Hong Kong's Freshwater Turtles: Prevalence of Ranavirus and Herpesvirus [TC07]	Julia Leung	MPL 1207
1150-1210	Successes and Challenges in Restoring Cambodia's National Reptile, the Southern River Terrapin (<i>Batagur affinis</i>) in Cambodia. [RR06]	Thorn Phun		Protecting Vietnam's micro-endemic turtle <i>Cuora picturata</i> through technology, patrols, and public engagement [EB01]	Pham Van Thong	

CONFERENCE RUNDOWN

DAY 3 - M+, West Kowloon

-  Rehabilitation and Reintroduction of Asian Turtles
-  Ecology and Behaviour of Asian Turtles

Time	Activities	Presenter	Venue	Activities	Presenter	Venue
1210-1230	[RR07 is withdrawn]	-	MPL 1307	Shell meet shell: the influence of the big-headed turtles on the freshwater snails [EB02]	Amy Wing Lam Fok	MPL 1207
1230-1250	Post-Release Monitoring of Captive-Reared Malayan Snail-Eating Turtles, <i>Malayemys macrocephala</i> : Population Estimates and Dispersal Patterns [RR08]	Artit Apibanpat homrat		Field Body Temperature and Microhabitat Use of the Spiny Hill Turtle (<i>Heosemys spinosa</i>) in Borneo [EB03]	Siti Nor Baizurah	
1250-1400	Lunch (included)					12/F
1400-1420	Turtle Survival Center: 13 Years of Critically Endangered Asian Turtle Assurance Colony Management [RR09]	Cris Hagen	MPL 1307	Surviving Outside the Sanctuary: Reproductive Dynamics of <i>Malayemys macrocephala</i> in Thai Paddy Fields [EB04]	Noppadon Kitana	MPL 1207
1420-1440	Bridging In-Situ and Ex-Situ Conservation: Showcasing the Role of Zoos and Aquariums through Beale’s Eyed Turtle Conservation at Ocean Park, Hong Kong [RR10]	Ashley Kwok, Calvin Fung		Individuality as a lever for conservation management: unveiling personality traits in the endangered Beale’s eyed turtle (<i>Sacalia bealei</i>) [EB05]	Wing Sing Chan	
1440-1500	Speical Session A: Forensic Methods for Turtle Conservation [SS01]	Jonathon Fong, Yik Hei Sung		From Reintroduction to Restoration: Examining Habitat Preferences and Settling Time in Reintroduced Burmese Star Tortoises in Central Myanmar [EB06]	Swann Htet Naing Aung	
1500-1540						
1540-1600	Coffee break + Poster presentation					12/F Open area
1600-1800	Speical Session B: - Best practices for procedures commonly performed on chelonians in the field [SS02.1] - Best practices for triage, admission and decision-making for confiscated chelonians [SS02.2]	Paolo Martelli, Renata Snow, Lee Foo Khong	MPL 1307			
1815-1845	Transit to Ocean Park (arranged by ICAT)					Car Park, M+
1845-2100	Conference Dinner (paid seperately, Ginger Grill)					Ocean Park

CONFERENCE RUNDOWN

DAY 4 - M+, West Kowloon

Time	Activities	Presenter	Venue
0900-0910	Housekeeping announcement		MPL1307
0910-1030	Speical Session C: Best Practices for Turtle Reintroduction [SS03]	Shahriar Caesar Rahman	
1030-1050	Coffee break		12/F
1030-1050	Discussion Forum: Turtle Conservation in Hong Kong and the Greater Bay Area	Jonathon Fong, Yik Hei Sung (Hosts)	MPL1307
1050-1150	Closing remark	Jonathon Fong	

SPECIAL SESSIONS

Venue: **MPL1307**, M+, West Kowloon

Conservation practices across different sectors are continually evolving to address ever-changing challenges. Hong Kong regularly contends with wildlife trafficking and the issues arising from the confiscation of suspected trafficked animals. At this conference, we have invited experts from various fields to share their insights on several key issues:

- Distinguishing illegally obtained wild individuals from those of other origins
- Discussing ethical considerations and providing practical guidance on how best to perform field invasive procedures
- Caring for confiscated turtles and overcoming challenges of illegal wildlife trafficking cases
- Designing species-specific reintroduction programmes for freshwater turtles.

	Session title	Trainer
A	Forensic Methods for Turtle Conservation [SS01]	Prof. Jonathan Fong and Prof. Yik Hei Sung (Members of IUCN SSC Tortoise and Freshwater Turtle Specialist Group)
B	Best practices for procedures commonly performed on chelonians in the field [SS02.1] Best practices for triage, admission and decision-making for confiscated chelonians [SS02.2]	Dr. Paolo Martelli (Director of Veterinary Services, Ocean Park Hong Kong) Dr. Renata Snow (Veterinarian, Kadoorie Farm & Botanic Garden) Dr. Lee Foo Khong (Senior Veterinarian, Ocean Park Hong Kong)
C	Best Practices for Turtle Reintroduction [SS03]	Mr. Shahriar Caesar Rahman (Co-founder and CEO, Creative Conservation Alliance, Bangladesh)

FIELD TRIPS

Ex-situ conservation facilities play a crucial role in safeguarding critically endangered wildlife, particularly species that require captive breeding and reintroduction programmes to boost their populations in the wild. To promote knowledge exchange and strengthen these efforts, two field trips will be organised to Ocean Park and Kadoorie Farm and Botanic Garden. During these visits, representatives from each organisation will lead interactive guided tours of their ex-situ conservation facilities.

Location	Description	Transportation Arrangement
Ocean Park Hong Kong	Since 2018, Ocean Park, the Hong Kong Society of Herpetology Foundation, and Lingnan University have been actively collaborating on a captive breeding program for the endangered Beale's eyed turtle (<i>Sacalia bealei</i>). In this field trip, OPCFHK will guide participants through the back-of-house breeding facilities, sharing their success stories in establishing the facility and creating a safety colony of Beale's eyed turtles.	Meeting Date: DAY 1 Time: Group A - 15:00 Group B - 15:30 Group C - 16:00 Meeting Location: Tour Gathering Point
Kadoorie Farm and Botanic Garden (KFBG)	For the past 25 years, KFBG has successfully operated an ex-situ breeding programme for the critically endangered Golden Coin Turtle (<i>Cuora trifasciata</i>), contributing to the species' conservation. During this guided tour, participants will have a unique opportunity to visit the captive breeding facilities, and gain valuable insights into their ongoing conservation efforts.	Meeting Date / Time: DAY 2 / 15:00-15:15 Meeting Location: G/F, M+, West Kowloon



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KEYNOTE SPEECH

Fixing the Life Cycle: The Future of Turtle Conservation Is Community-Driven [K01]



Prof. Ricky Spencer

School of Science, Western Sydney University
Australia

Freshwater turtles are among the most threatened vertebrates globally, with declines driven by a combination of habitat loss, road mortality, nest predation, harvest, and invasive species. Because turtles are long-lived and slow to reproduce, even small increases in adult mortality or reductions in recruitment can trigger rapid population declines. Despite decades of research documenting these threats, practical conservation solutions that operate at meaningful spatial scales remain limited.

In Australia, the *1 Million Turtles* community conservation program has developed a framework that focuses on identifying and mitigating key life-history bottlenecks limiting turtle populations. By integrating citizen science, predictive modelling, and targeted interventions, the program mobilises communities to address specific threats such as road mortality, fox predation on nesting females and eggs, and habitat degradation. The TurtleSAT platform has enabled thousands of community members to collect standardized observations of turtles, nests, and mortality events, generating continent-scale datasets used to identify high-risk areas and guide management actions.

This keynote explores how a life-history intervention approach—focusing conservation actions on the stages where turtles are most vulnerable—can transform turtle recovery efforts. Case studies from Australia, including nest protection programs, road mortality mitigation, habitat enhancement, and school-based conservation initiatives, demonstrate how community engagement can deliver measurable conservation outcomes.

The talk will also explore how this framework may be applied to Asian turtle conservation challenges, including wildlife trade, egg harvesting, habitat loss, and culturally driven turtle releases. By combining local knowledge, education, and scalable technology, community-driven conservation models offer new opportunities to address turtle declines across diverse social and ecological landscapes.

KEYNOTE SPEECH

Facing the Reality: Challenges in Safeguarding Remnant Populations and Population Reestablishment of the Endangered Freshwater Turtles in Taiwan [K02]



Prof. Tien-Hsi Chen

National Pingtung University of Science and Technology
Taiwan

In the past decades, most freshwater turtle and tortoise species have declined due to indiscriminate poaching and trafficking in Asian countries. Globalization has erased barriers between origin, transit and consumer destinations for wildlife trafficking, and fast and easy cross-border transportation has seriously impacted on wild fauna, especial freshwater turtles and tortoises. Due to the unclear policies and ignorance by responsible agencies, cross-strait trafficking of endangered turtles as well as farmed species was a common practice. The unregulated illicit poaching and trafficking have led to devastating impacts on the endangered freshwater turtles in Taiwan, especial yellow-margined box turtle (*Cuora flavomarginata*) and yellow pond turtle (*Mauremys mutica*). Over the past 20 years, the populations of *M. mutica* and *C. flavomarginata* have declined by more than 80%, and most remnant populations have lost their ecological functions with difficulty in keeping long-term persistence. Developing clear objective and practical recovery plans for the endangered turtle species are urgently needed, and set priority of actions due the limitations of available resources. It is a challenging task in recovery of viable populations as the decline was the synergistic effects of habitat loss, degradation and over-exploitation. The identification of field localities of remnant viable populations is of the utmost priority in developing empirical conservation actions. Currently, few remnant viable populations in safe habitats could be found in the wild. Although recovery plans for *M. mutica* and *C. flavomarginata*, have been proposed in the past few years, the priority actions have been mismatched. We have a wildlife refuge designated for endangered *M. mutica* and *C. flavomarginata*, however the implementation of conservation plan was largely neglected as the incompetence of existing governance and limit of enforcement power. The monitoring programs and anti-poaching efforts relied mainly on voluntary sectors. In recent years, the governmental agencies have conducted community-based programs in preserving or reestablishing populations extensively, uncertainty in private land ownership and highly degraded habitats might limit the outcome due to unclear management responsibility and inconsistent participation in stewardship. The state-owned land plays a key role in providing suitable habitats which can support necessary habitat for the species to complete all life stages of wild populations and assure the long-term persistence. In the programs of population reestablishment or reinforcement, spread of infectious diseases is an emerging crisis by using translocation of confiscated animals. The risks have to be assessed and monitored carefully.

KEYNOTE SPEECH

From Doom to Bloom: Holistic and Innovative Approaches for Population Recovery of Tortoise and Freshwater Turtles in Bangladesh [K03]



Mr. Shahriar Caesar Rahman

Creative Conservation Alliance
Bangladesh

Bangladesh is home to 25 species of tortoises and freshwater turtles (TFTs). The majority of these species are under tremendous threat of extinction and are on the brink primarily due to overexploitation. Despite the high diversity and threatened status of TFTs, there are very few field-based conservation efforts for them in the country.

The remote, hilly, forested terrain in the southeast of Bangladesh—part of the Indo-Burma Biodiversity Hotspot, the Chittagong Hill Tracts (CHTs)—harbors a unique assemblage of globally threatened TFTs. Historically, due to the remote location and complex political situation in the area, much of the region remained inaccessible to researchers for decades. As a result, little information exists on species distribution and conservation work.

The Creative Conservation Alliance (CCA) Bangladesh, with support from international partner Turtle Survival Alliance (TSA), initiated groundbreaking work in the region over a decade ago. The program initially engaged Indigenous tribal communities to conduct status surveys and documented seven species of TFTs, many of which were either thought to be locally extinct or not previously known to occur in the area. The program later matured into a fully fledged, holistic conservation program integrating conservation breeding, community engagement, and rewilding of captive-bred tortoises.

The program initiated the first-ever rewilding of *Manouria emys* and *Indotestudo elongata*. Over three cohorts have been released, resulting in over 70% survival and zero poaching incidents to date. The program continues to bring hope for the tortoises and turtles of Bangladesh.

ORAL PRESENTATION ABSTRACT

Current trade in Asian turtles at pet shops and online in Hong Kong [WT01]

John A. Allcock¹, Astrid A. Andersson¹, Hannah B. Tilley¹, Ryan Cheng Cheuk Hin¹, Juha Merilä¹ & Jovy Chan²

¹ School of Biological Sciences, The University of Hong Kong, Hong Kong

² WWF-Hong Kong, Hong Kong

Hong Kong is a centre for pet trade, both for export to other countries and to supply local demand for exotic pets. To understand current availability of species in the local pet trade, we surveyed reptiles for sale from July to December 2025 at pet shops across Hong Kong and in online spaces. At pet shops we recorded a total of 64 freshwater turtle species, with an average of 2,000 individuals on each survey. These included 19 Asian species, most of which are listed as threatened by IUCN. While we found fewer turtle individuals for sale online, these included a further 14 species that were not recorded at the physical markets, mostly threatened species from Asia. A high proportion of small individuals and the presence of hybrids suggest that most animals openly for sale were captive bred, but the possibility of wild capture cannot be excluded.



ORAL PRESENTATION ABSTRACT

A Devastating Decade: Hong Kong's Role in the Global Trade of Testudines [WT02]

Sam Inglis¹ (presenter), Hilary Lai¹, Sophie le Clue¹ and Christie Wong¹

¹ ADM Capital Foundation, Hong Kong SAR, People's Republic of China

The Hong Kong SAR is a critical hub in the global trade of turtles and tortoises, yet the ultimate fate of imported animals remains poorly understood. This knowledge gap hinders effective conservation and policy responses. Imported individuals may enter households as pets, die in trade or captivity, be re-exported illegally, released into local ecosystems or consumed in food and medicine. Each pathway carries distinct ecological and welfare implications. To illuminate this complex landscape, we examine legal import data from the Hong Kong Government over the past decade (2015-2024). Our analysis reveals that more than 5.5 million live individuals representing over 190 species entered the city through legal channels during this period. This staggering volume and diversity underscore Hong Kong's dual role as both end-market and redistribution hub for the global trade. While these figures represent only the legal, visible portion of trade, they provide a crucial baseline for understanding pressures on wild populations. We connect these findings to the resultant conservation challenges through a series of pertinent case studies as well as reflect on the illegal trade which has burgeoned in the shadow of this vast licit market. By shedding light on the scale and dynamics in the last decade, this presentation aims to share foundational data to catalyse informed, cross-sectoral dialogue among scientists, policymakers and conservation practitioners working to address Asia's turtle crisis.



Overwhelming Preferences of Testudines by China's Herpetofauna Pet Trade: Importance of Joint Effort in Conservation [WT03]

Kai Wang^{a,b,c,1}, Chenqi Lu^{a,d,1}, Shuo Qi^e, Pipeng Li^f, Robert W. Murphy^{a,g}, Cameron D. Siler^c, Jing Che^{a,b}

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¹ These authors contributed equally to this work.

Turtles and tortoises, together known as Testudines, are the most highly threatened group of vertebrates, and they are known to constitute a major part of the global exotic pet trade, particularly from Asia. However, the extent and characteristics of Testudines trade in the overall herpetofauna pet trade from individual Asian countries remain largely unknown. This paucity of data hinders effective conservation actions. By synthesizing a comprehensive, multi-sourced dataset including international trade databases, online surveys, and literature reviews, we reveal the extent and characteristics of China's severely overlooked herpetofauna pet trade for the first time. Based on the background information, we further evaluate the extent of turtle pet trade by China. China's herpetofauna pet trade achieved an astonishing scale, involving 1,619 species with substantial volumes. Of these, although Testudines only constitute a small portion of the total traded diversity, the traded species comprised 72.2% and 92% of the global and China's native diversity of Testudines. More importantly, we found that except the export trade to the United States, over 90% of China's total international trade volumes were Testudines based on CITES and LEMIS datasets, regardless of trade directions. When looking at the domestic market, Testudines was the most-commonly kept group of herpetofauna among the surveyed herpetoculturists and the most trafficked taxonomic group into China. Distinct geographic patterns were observed for China's herpetofauna pet trade, with Hong Kong served as a key node in both legal trade and trafficking. In addition to the trafficking of non-native, threatened Testudines species into China, protected, Mainland native Testudines, along with other native herpetofauna from the Mainland, have been trafficked to Hong Kong and later laundered to the global markets as "legally exported". The observed prevalent trafficking between the Mainland and Hong Kong are partly due to the differential legislations on wildlife conservation and the prominent legal loophole on Hong Kong's legislations regarding China's protected, native species that are only found in the Mainland. Together, our results highlight the importance of trade data in better management, and we call for collaborative efforts on law enforcements and regulation makings to properly manage the global Testudines pet trade.



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Disruption and resilience in turtle trade during COVID-19: evidence from market monitoring, import records, and seizures in Hong Kong [WT04]

Yik Hei Sung^{1,2*}, Samuel Chak Lam Ho³, Hiu Nam Kong², Amy Wing Lam Fok², Franco Ka Wah Leung⁴, Nancy E. Karraker⁵, Anthony Lau², Michael Wai-Neng Lau^{6,7}, Sam Inglis⁸, Christie Wong⁸, Hilary Lai⁸, Jonathan Fong²

¹ School of Health, Sciences, and Society, University of Suffolk, Ipswich, UK

² Division of Science, Wu Jieh Yee School of Interdisciplinary Studies, Lingnan University, Tuen Mun, Hong Kong SAR, China

³ School of the Environment, Centre for Biodiversity and Conservation Science, The University of Queensland St Lucia, QLD 4072, Australia

⁴ College of Science and Engineering, James Cook University, Townsville 4814, Queensland, Australia

⁵ Amphibian and Reptile Conservancy, Albuquerque, New Mexico, USA

⁶ Hong Kong Wetlands Conservation Association, Hong Kong SAR, China

⁷ School of Biological Sciences, The University of Hong Kong, Hong Kong SAR, China

⁸ ADM Capital Foundation, Hong Kong SAR, China

The COVID-19 pandemic caused unprecedented disruption to global transportation, trade, and human mobility, creating a natural experiment to examine how wildlife trade systems responded to large-scale disruption. We investigated changes in turtle trade in Hong Kong before, during, and after COVID-19 (2017–2025) using market monitoring data, CITES import records, and law enforcement seizure records. We evaluated temporal changes in species composition, trade volume, and the proportion of threatened, CITES-listed, and likely illegal species, followed by classifying species according to their persistence across COVID-19 periods to infer the underlying supply mechanisms. Across datasets, species richness and trade volume declined substantially during the period of border restrictions and rebounded after the border reopening. Market monitoring data also showed that species composition differed significantly among periods, and species richness on online platforms peaked after COVID-19. Many species persisted across COVID-19 periods, implying that trade was buffered by domestic stocks and, for native species, local poaching. In contrast, species that disappeared from trade during COVID-19 were more likely to depend on continuous international supply. These findings demonstrate that turtle trade systems are structured by both international supply and domestic stocks, allowing trade to remain resilient to prolonged disruption. Despite the temporary reduction in trade, the proportion of threatened and likely illegal species remained broadly similar across periods, and seizures increased after border reopening, indicating persistent conservation risk. Effective regulation requires integrated measures that combine cross-border controls with the management and inspection of domestic stocks and the sustained surveillance, investigation, and enforcement of online trade.



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ORAL PRESENTATION ABSTRACT



Spatio-temporal distribution and driving mechanisms of illegal turtle trade in Guangdong Province, China [WT05]

Yangchun Gao¹, Shijia Hu^{1,2}

¹ Guangdong Key Laboratory of Animal Conservation and Resource Utilization, Guangdong Public Laboratory of Wild Animal Conservation and Utilization, Institute of Zoology, Guangdong Academy of Sciences, Guangdong 510260, China

² Ministry of Education Key Laboratory for Ecology of Tropical Islands, Key Laboratory of Tropical Animal and Plant Ecology of Hainan Province, College of Life Sciences, Hainan Normal University, Haikou 571158, China

Turtles are among the most endangered animal groups globally, with illegal trade being a primary driver of their endangerment. Guangdong Province serves as a critical hub and destination for turtle trade, as well as a hotspot for illegal trafficking. In this study, we elucidate the spatio-temporal distribution patterns and underlying mechanisms of illegal turtle trade in Guangdong Province. We analyzed 1,173 law enforcement cases (involving 21,838 individuals) of illegal turtle trade in Guangdong Province from 2016 to 2025, as documented by the South China Forensic Center for Wildlife Damage, to examine the dynamic trends, hotspot cities, and driving mechanisms of illegal turtle trade in Guangdong over the past decade. We provide data on the species composition, temporal trends, and the geographic patterns of the illegal trade. This study not only aids in formulating legal frameworks related to illegal turtle trade, but also provides valuable insights for the conservation of wild turtle species.



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ORAL PRESENTATION ABSTRACT



Progress and Status of Red Listing Efforts for Asian and Global Freshwater Turtles and Tortoises by the IUCN SSC Tortoise and Freshwater Turtle Specialist Group [WT06]

Craig B. Stanford^{1,5}, Vivan P. Páez^{2,5}, Peter Paul van Dijk^{3,5}, Natalia Gallego-García^{4,5}, and Anders G.J. Rhodin^{3,5}

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² Universidad de Antioquia, Medellín, Colombia

³ Chelonian Research Foundation, Arlington, Vermont, USA

⁴ Turtle Survival Alliance, North Charleston, South Carolina, USA

⁵ IUCN SSC Tortoise and Freshwater Turtle Specialist Group

Asia, especially East Asia, represents the epicenter of the global turtle-trade extinction crisis. Of the 102 species and 138 taxa of freshwater turtles and tortoises that occur in Asia, 83% of the species are Threatened with extinction and 72% are currently assessed as either Critically Endangered or Endangered by the IUCN SSC Tortoise and Freshwater Turtle Specialist Group (TFTSG), numbers greater than anywhere else in the world. Over the past three decades, we, the TFTSG and its Asian turtle specialists, have assessed and re-assessed the conservation status of all Asian species, with the last re-assessment carried out in 2018; however, not many East Asian species were included at that time. Over the past three years we and our many specialists have also assessed about 140 species from the Americas, of which about 100 are currently "in press" with the IUCN. We are planning a re-assessment of African species to be carried out in the second half of 2026 and are preliminarily planning a re-assessment of East Asian species in early 2027. This paper summarizes the conservation status of Asian and all Global freshwater turtles and tortoises as of early 2026. We are also involved in efforts to monitor and help stop the trafficking of Asian and other turtles from around the world, including working with authorities in Hong Kong to interdict smuggling of turtles into or through their jurisdiction.



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ORAL PRESENTATION ABSTRACT

Trade in Calipee: A Pervasive Yet Under-recognized Threat to Softshell Turtles in South Asia [WT07]

Ramya Roopa S.^{1,2}, Anirban Chaudhuri³, Subhasis Dey¹, Uttara Mendiratta^{4,5}

¹Riverine Ecosystems and Livelihoods Programme, Wildlife Conservation Trust, Mumbai, India

²School of BioSciences, The University of Melbourne, Melbourne, Australia

³World Animal Protection, 1/211, Jodhpur Park, Kolkata, India

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The illegal trade in turtle body parts, specifically in calipee, represents a significant yet overlooked threat to South Asian turtles. We synthesized evidence from media-reported seizures, government records and field data, and show that this trade is far more pervasive than previously acknowledged. Calipee refers to the cartilaginous tissue found inside the plastron, and the outer margins of the carapace of softshell turtles. Between 2007 and January 2024, at least 5351.5 kg of dried calipee (equivalent to 133.8 tons to 246.2 tons of turtles) were seized from South Asia, with several large consignments exceeding 500 kg of calipee headed to international destinations, including Hong Kong, China. Given the lack of awareness and challenges in identifying this product, it is likely that these seizures represent a fraction of the actual trade. Literature and field-based information suggest that endangered softshell turtle species such as *Nilssonia gangetica*, *N. hurum*, *N. leithii*, and *Chitra indica*, are targeted for this cryptic trade, further highlighting conservation concerns. We urge law enforcement agencies and the conservation community across Asia, at source and destination sites, to investigate this trade and take active measures to mitigate the threat posed by calipee trade to softshell turtles in South Asia.



ORAL PRESENTATION ABSTRACT

Freshwater turtle exports from Indonesia: insights from CITES trade data and national protection regulations [WT08]

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International trade is one of the major drivers of freshwater turtle declines, yet how trade dynamics intersect with evolving national protection frameworks remains poorly resolved. We analysed Indonesia's reported freshwater turtle exports in the CITES Trade Database (1985–2024), examining temporal trends, species composition, and destination markets, and explicitly aligning traded taxa with Indonesian protection status under Government Regulation No. 7/1999 and its revision, Ministerial Regulation P.106/2018. Trade volumes were quantified using a merged approach prioritising importer-reported quantities and incorporating exporter-reported data where necessary. Exports increased sharply from the early 2000s, peaked in the mid-2010s, and declined thereafter. Trade was highly concentrated among a small number of species, particularly *Amyda cartilaginea* and *Cuora amboinensis*, and dominated by a limited set of importing regions, notably Singapore, China, and Hong Kong. Importer-specific analyses revealed distinct species assemblages and asynchronous peaks, indicating shifting market preferences over time rather than uniform demand. Alignment with national regulations showed that several species legally protected in Indonesia, including *Manouria emys*, *Carettochelys insculpta*, *Chelodina mccordii*, and *Orlitia borneensis*, appear in CITES records as wild-sourced exports after their protection entered into force, while others were traded only prior to listing. Although CITES data do not determine legality, these patterns highlight priority species and trade pathways that require closer regulatory oversight and monitoring.



ORAL PRESENTATION ABSTRACT

When Is Commercial Captive Breeding Feasible? Developing a Biological Suitability Score for Tortoises and Freshwater Turtles [WT09]

Kevin Torregrosa¹, Avishai Shuter¹, Jonathan Fong², Yik Hei Sung², Li Zhang³, Meng Li¹, Fengjing Peng¹ (presenter), Lishu Li¹, Elizabeth Bennett¹

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Unsustainable harvesting for the pet trade continues to threaten tortoise and freshwater turtle species, and weak oversight of captive breeding creates opportunities for laundering wild-caught individuals into legal supply chains. Yet many species are biologically incapable of producing offspring at the scale needed to support genuine commercial captive breeding, leading to regulatory systems that authorize production without considering fundamental life-history constraints. To address this gap, we introduce the Commercial Breeding Assessment (CoBrA), a trait-based framework that evaluates species across four biological dimensions (fecundity, diet, behavior, and specialized breeding needs) to determine their suitability for commercial-scale captive breeding. We apply the CoBrA score to representative chelonian species to highlight differences based on biological feasibility. Some species commonly targeted in trade display traits, such as low fecundity, aggressive behavior, and/or specialized environmental needs that make scalable breeding unlikely and increase the risk of laundering under the guise of having been “captive-bred.” The CoBrA framework provides a stable, transparent, evidence-based tool to guide regulatory white lists and clarify permitting decisions. By aligning policy with biological reality, the approach can reduce enforcement burdens, strengthen verification of captive-breeding claims, and support more effective risk-based governance of the chelonian trade.



ORAL PRESENTATION ABSTRACT

Overview of Turtle Conservation in Hong Kong and Prospects for the Future [TC01]

Michael Lau

Hong Kong Wetlands Conservation Association, Hong Kong SAR, China

Large-scale illegal trapping of the Golden Coin Turtle (*Cuora trifasciata*) was detected in Hong Kong since 2000 including habitats inside protected areas. A joint effort by the Agriculture, Fisheries and Conservation Department and the Kadoorie Farm and Botanic Garden (KFBG) was quickly initiated to remove traps and assess the threat to local populations. Due to the difficulty of eliminating trapping, a conservation breeding program was established as assurance and to produce individuals for future release. Moreover, a species action plan was developed, and field research on *C. trifasciata*'s ecology was conducted by the University of Hong Kong.

As *C. trifasciata* populations declined, poaching spilled over to other threatened stream turtles: the Big-headed Turtle (*Platysternon megacephalum*) and Beal's Eyed Turtle (*Sacalia bealei*). Dr. Sung Yik Hei's did his Ph.D. research on the impacts of illegal trapping on *P. megacephalum*. He now leads a team studying freshwater turtles, monitoring populations, poaching, and trade.

Legally, all native turtles are protected in Hong Kong SAR, and most stream habitats are within Country Parks. In addition, the three stream turtles are CITES-listed and their trade are regulated. Despite the legal protection, conservation efforts since 2000 have only succeeded in maintaining some populations while others are depleted. The *C. trifasciata* breeding program is successful but still faces the challenge of ensuring turtles released in the future will be safe to establish thriving populations.

Poaching remains the primary threat and it is likely to persist as long as there are valuable turtle populations in the wild. Employing appropriate technology to enhance surveillance and enforcement is crucial. Effective enforcement also requires a well-trained and dedicated anti-poaching team.

Raising the profile of these turtles is essential to ensure their conservation remains a priority long-term. A promising strategy would be to aim for a major conservation win that resonates with decision-makers, the media, and the public. Collaboration between Hong Kong SAR and mainland China to reintroduce them to well protected reserves in South China would elevate efforts from maintaining local populations to improving the overall species status. This approach could unlock new resources and provide fresh momentum for the sustainable conservation of these globally threatened turtles.



ORAL PRESENTATION ABSTRACT

Golden Coin Turtle Conservation, A Challenge at every turn. The DRA story. [TC02]

Paul Crow

Kadoorie Farm and Botanic Garden (KFBG), Kong Kong China

Cuora trifasciata, listed as "critically endangered" in 2000 by the IUCN, has become a focal point for conservation efforts in Hong Kong, where its population is regarded as the healthiest in the wild. Initiatives include ex-situ and in-situ management, assurance colony formation, and potential reintroduction or translocation strategies. However, these efforts face significant challenges, primarily due to high market value driven by traditional Chinese medicine beliefs, making the species a target for poaching. A pressing aspect of conservation planning is the execution of a Disease Risk Analysis (DRA), which was initiated in collaboration with the Zoological Society of London in 2020. Nearly two years later, the comprehensive report identified numerous risks, leaving the project at an impasse. Despite rising captive stock density and the urgency of the situation, the results of the DRA pose considerable obstacles to advancing the conservation project.



ORAL PRESENTATION ABSTRACT

The fight to end illegal and unsustainable trade in tortoises and freshwater turtles – are we winning? [TC03]

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²IUCN SSC Tortoise and Freshwater Turtle Specialist Group

In December 1999, I attended the meeting Conservation and Trade of Freshwater Turtles and Tortoises in Asia in Phnom Penh, Cambodia, where global experts reached an alarming consensus: illegal and unsustainable trade was driving Asia's tortoise and freshwater turtle species toward extinction at an unprecedented rate. The term "Asian Turtle Crisis" was coined to describe what was widely recognized as the single greatest threat to multiple species. It was a conservation nightmare, and it demanded immediate action.

Twenty-five years later, we are still fighting the same battle. Tortoises and freshwater turtles remain among the most threatened vertebrates on Earth. But is this still being treated as a crisis?

This presentation revisits the situation in 1999 and critically examines where we stand today. It assesses the recommendations made at the onset of the Asian Turtle Crisis, highlighting progress achieved, challenges that persist, and opportunities that have been missed. I argue that the trade in tortoises and freshwater turtles must continue to be addressed as an ongoing conservation emergency, requiring stronger legislation, more effective international policy, targeted demand reduction, and robust enforcement. There is no justification for the continued loss of any of Asia's tortoise and freshwater turtle species.



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ORAL PRESENTATION ABSTRACT

Integration of Clinical and Laboratory Approaches for Disease Surveillance and Healthcare Programs for Captive Turtles in Mandai Wildlife Group [TC04]

Chua Hwee Hoon Delia

Mandai Wildlife Group, Singapore

In the recent years, several emerging pathogens have been identified in both free-ranging and captive turtle population. At Mandai Wildlife Group, the integration of veterinary clinical examinations with in-house laboratory diagnostics enables early detection of infections, facilitates rapid intervention to prevent outbreaks, and supports continuous refinement of biosecurity protocols across our facilities.

The diagnostic laboratory at Mandai Wildlife Group has expanded its capacity and expertise allowing it to effectively address diverse disease surveillance needs. Building on these areas of expertise, the laboratory contributes to species-specific healthcare programs through comprehensive blood analyses and protein electrophoresis for *Batagur* species and the critically endangered *Chelodina mccordi*. The establishment of in-house PCR protocols for pathogens such as *Emydomyces testavorans*, *Mycobacterium* sp., and Testudine Intranuclear Coccidiosis (TINC) allow early detection and surveillance of disease in established populations and new acquisitions to the collection. Additionally, targeted assessment of ionised calcium levels in hatchling turtles and breeding females supports monitoring of reproductive health and early-life development status.

Together, these integrated clinical and laboratory efforts strengthen our healthcare initiatives and enhance the overall well-being of the turtle population under our care.



ORAL PRESENTATION ABSTRACT

Strengthening Regional Freshwater Turtle Conservation through Capacity Building and Collaborative Networks at Mandai Wildlife Group [TC05]

Luke Harding¹, Roopali Raghavan¹, Saravanan Elangkovan¹, Nerissa Chao², Dr Sonja Luz¹

¹ Mandai Wildlife Group, Singapore

² IUCN SSC Asian Species Action Partnership (ASAP)

Freshwater turtle populations across Southeast Asia face increasing threats from habitat loss, illegal trade, climate change, and limited conservation capacity. Mandai Wildlife Group (MWG) plays a key role in supporting regional freshwater turtle conservation. In its zoological parks MWG manages important ex-situ populations, conducts research and targeted training programmes,

Through its conservation arm Mandai Nature, the Group also provides strategic funding support for in-situ conservation efforts and facilitates numerous collaborative initiatives with regional and international partners, including the IUCN SSC Asian Species Action Partnership (ASAP). These efforts are aimed at strengthening regional capacity, enhancing technical expertise, and fostering sustainable conservation networks contributing to many conservation efforts for Southeast Asian freshwater turtles.

Regional capacity building is further achieved through targeted training workshops, staff exchanges, and technical mentorship for partner organisations, covering areas such as species monitoring, captive management, veterinary care, and conservation planning. In addition, Mandai Wildlife Group facilitates knowledge sharing and collaboration by convening regional platforms, supporting research partnerships, and linking conservation practitioners with global networks and resources dedicated to freshwater turtle conservation.

Collectively, these initiatives enhance the long-term effectiveness of freshwater turtle conservation efforts by empowering local stakeholders, strengthening cross-border collaboration, and building resilient conservation frameworks across the region.



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Model-Based Assessment of Embryonic Thermal Vulnerability to Climate Change in Turtles: A Case Study of Marine Turtles [TC06]

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Turtles represent one of the most extinction-prone vertebrate lineages, and their widespread temperature-dependent sex determination (TSD) exposes embryonic development to dual constraints of sex-ratio imbalance and increased mortality under climate change. However, such threats have not yet been comprehensively evaluated across the full geographic distribution of turtles. Using five marine turtle species as focal taxa, this study employs microclimate models and physiological mechanism models to simulate the direct effects of warming on embryonic sex ratios and hatching success. The results (1) demonstrate that the early or late portions of the nesting season provide temporal windows for the production of male offspring, (2) reveal the global spatial pattern of nesting sites exposed to high temperatures and identify potential refugial areas, and (3) integrate the magnitude of projected warming with the buffering effects of shading to propose priority regions for targeted shading interventions. These findings provide a scientific basis for the global planning of marine turtle conservation.



Pathogen Surveillance in Hong Kong's Freshwater Turtles: Prevalence of Ranavirus and Herpesvirus [TC07]

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² Division of Science, Lingnan University, HKSAR

³ School of Health, Sciences and Society, University of Suffolk, Ipswich, Suffolk, UK

Ranavirus and herpesvirus infection has been documented in various taxa, including fish, amphibians and reptiles. Outbreak of ranavirus and herpesvirus has resulted in mass mortality events in several turtle species. However, the prevalence of these emerging pathogens in freshwater turtles in Hong Kong has remained largely unexplored.

In this study, ranavirus and herpesvirus were screened in wild-sampled and captive-sourced freshwater turtles by molecular approaches (conventional PCR and real-time PCR). Both pathogens have been detected in wild-sampled turtle populations, including individuals from the native Big-headed Turtle (*Platysternon megacephalum*), Beal's Eyed Turtle (*Sacalia bealei*) and Golden Coin Turtle (*Cuora trifasciata*). Furthermore, these pathogens were also detected in Red-eared Slider (*Trachemys scripta elegans*), an exotic and invasive species in Hong Kong. Presence of these pathogens in exotic species raises concerns about disease transmission from released animals to native turtle populations, and the potential for pathogen spillover from exotic species to the wild. These findings underscore the need for biosecurity measures to prevent disease spread among wildlife. Continued monitoring and research are crucial to understand pathogen dynamics, mitigate risks to native species, and implement effective conservation strategies.



Research and Conservation Priorities for the Continental Turtles of Core Indochina [AC01]

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Turtles and tortoises are one of the most imperiled groups of vertebrates on the planet. A lack of research and species-specific knowledge hinders our ability to effectively conserve many species, particularly in tropical regions where under-funding and under-representation in scientific literature are most evident. To bring attention to this glaring trend, we analyzed the knowledge gaps for the extant continental turtles of core Indochina (27 spp., 11 ssp.), including Cambodia, Laos, and Vietnam. We reviewed and scored the peer-reviewed literature for 19 fundamental biological criteria (Research Score). We used this Research Score alongside measures of vulnerability (maximum body size, geographic range size, and IUCN Red List status or IUCN Tortoise and Freshwater Turtle Specialist Group provisional status) to establish a Conservation Priority Score for all chelonian taxa of Indochina. Key findings from this review include: (1) Less than 20% of biological criteria were fulfilled for most chelonian taxa and no taxon fulfilled more than 50% of biological criteria, indicating a severe lack of knowledge about the biology of chelonian taxa in the wild in Indochina; (2) relatively well known biological criteria included geographic range, abundance index, and diet in the wild; (3) recent phylogeographic and population genetic studies are increasingly addressing taxonomic uncertainty in the region; and (4) unlike other assessed regions that demonstrate a gradient of conservation priorities across taxa (low, medium, and high), effectively all chelonian taxa of Indochina are of high conservation priority. We echo the sentiments of others in recognizing that there is a lack of scientific data to support chelonian conservation in Indochina.



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ORAL PRESENTATION ABSTRACT

ATGC project: Where is this turtle from (and where should I release it)? [AC02]

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Turtles are among the most threatened and heavily traded vertebrate groups worldwide, with much of the illegal trade involving live individuals destined for food and pet markets. This creates a rare conservation opportunity: confiscated turtles can potentially be released back into the wild. However, responsible reintroduction requires accurate identification of an individual's geographic origin, a major challenge in landscape genetics. The Turtle Survival Alliance launched the Atlas of Turtle Genomes for Conservation (ATGC), an initiative to map genetic diversity across native turtle species in the United States. ATGC applies whole-genome sequencing and advanced analytical pipelines to enable high-resolution assignment of confiscated individuals to their site of origin. As a proof of concept, we present results from three taxa—the diamondback terrapin (*Malaclemys terrapin*) and the northwestern and southwestern pond turtles (*Actinemys marmorata* and *A. pallida*)—to evaluate optimal sampling and genomic strategies for origin assignment. Our analyses achieved assignment accuracies of up to 8 km from the true capture location. ATGC will initially focus on U.S. species, with plans to expand globally. The project will deliver an accessible tool for conservation practitioners and law enforcement, supporting reintroductions, guiding captive breeding programs, and identifying poaching hotspots.



Genetic assignments of confiscated Black-breasted Leaf Turtles (*Geoemyda spengleri*) revealing a population with unknown origin [AC03]

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The Black-breasted Leaf Turtle (*Geoemyda spengleri*) is a small terrestrial turtle distributed in Vietnam and southern China. Its populations are declining sharply due to overexploitation and habitat loss and listed as Endangered on the IUCN Red List. Reintroduction of individuals from stations and zoos may support conservation efforts, but unclear origins and genetic divergence among the populations pose challenges for site selection and risk unintended genetic mixing. In this study, we analyzed 1,092bp of a cytochrome b gene fragment for 16 newly collected samples from Vietnam and 34 samples from recently confiscated individuals from Sweden along with published molecular data of the species. Analyses using Bayesian Inference, Maximum Likelihood, and NeighborNet methods reveal high haplotype diversity and clear geographic genetic structuring across six distinct clades. Five clades represent populations with known distribution areas, while 27 of the confiscated samples from Sweden form a distinct clade lacking a defined geographic origin. Our findings highlight the critical need to determine the geographic provenance of the confiscated turtles prior to reintroduction and include nuclear markers, e.g., microsatellites and single nucleotide polymorphism, in future molecular analyses of held animals to avoid genetic mixing between divergent populations and to support targeted conservation strategies.



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ORAL PRESENTATION ABSTRACT

When Communities Need Proof Using eDNA to Support Endangered Turtle Conservation [AC04]

Maslin Osathanunkul

Chiang Mai University, Thailand

Conservation of endangered freshwater turtles is often constrained by the difficulty of confirming species presence, particularly for cryptic species that are rarely observed, which can hinder both management decisions and community engagement. This presentation demonstrates how environmental DNA (eDNA) can provide reliable evidence to support conservation of the critically endangered big-headed turtle (*Platysternon megacephalum*) in northern Thailand. Water samples were collected from forest streams within community-managed landscapes and analysed using eDNA methods before and after local conservation actions. The results confirmed turtle presence across multiple sites, including locations where traditional surveys and local observations had failed. When shared with local stakeholders, these findings helped reduce uncertainty, strengthened confidence in monitoring outcomes, and supported decisions to establish and expand protected stream sections. This case study illustrates how eDNA functions not only as an innovative, non-invasive monitoring technique, but also as a practical tool for translating scientific evidence into actionable information that supports both conservation management and community-led protection of endangered turtle populations.

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ORAL PRESENTATION ABSTRACT

Interdisciplinary and reproducible action to protect turtles in poaching hotspots [AC05]

Astrid Andersson, Karina-May Reyes, Molly Ferrill

The University of Hong Kong

Leveraging multiple conservation approaches helps maximise the impact of protective action for species at risk of illegal wildlife trade. Here, we demonstrate how a combination of technology, community engagement and demand reduction was incorporated into a holistic conservation strategy for highly threatened turtle species in Palawan, The Philippines. In 2022, local NGO Centre for Sustainability, PH, who has collaborated with the island's indigenous communities for >10 years, teamed up with a forensic scientist and professional filmmaker – both regionally based and specializing in wildlife trade. The group then co-organised a multi-pronged conservation project, involving 1) a workshop to upskill and equip rangers to microchip turtles on patrol, 2) engaging communities and ex-poachers to produce a short informational documentary for local authorities, and 3) producing a multi-lingual 3-minute animated demand reduction video to circulate in online marketplaces (e.g. forums, chat groups) in Asia. It is hoped that with further funding this approach applied in Palawan can be reproduced across poaching hotspots in Asia, and beyond, to establish a centralized Global Turtle Microchipping Database with data on microchipped turtles, and to produce documentaries that highlight issues specific to each locality.



ORAL PRESENTATION ABSTRACT

Progress Toward the Reintroduction of the Rote Turtle: An Integrated Small-Island Approach Combining Community Livelihoods, Climate Adaptation, and Spatial Planning [AC06]

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²Natural Resources Conservation Agency of East Nusa Tenggara Province (BBKSDA NTT)

The Rote turtle (*Chelodina mccordi*), presumed extinct in the wild, has experienced a critical population decline due to intensive historical poaching. This project applies a practical small-island conservation approach integrating repatriation, colony assurance, reintroduction, climate change adaptation, and spatial planning through the implementation of Other Effective area-based Conservation Measures (OECMs) that combine locally led management with formal government recognition. Progress to date includes establishment of a repatriation and colony assurance program serving as a head-starting facility and the successful soft-release reintroduction of Rote turtles in three freshwater lakes on Rote Island. These actions, implemented through collaboration among government agencies, non-governmental organizations, and formally recognized local community stewards responsible for site protection, monitoring, and no-take enforcement, represent a key milestone toward re-establishing wild populations and demonstrating effective OECM implementation in practice. In parallel, livelihood initiatives have strengthened community custodianship of freshwater habitats. Conservation efforts are ongoing; however, climate change poses increasing challenges under Rote Island's extreme conditions, including limited freshwater availability, low rainfall, and prolonged dry seasons. At broader scales, we operationalize CLUZ within a Marxan decision-support framework to guide habitat protection and management under projected climate and socio-economic scenarios. This approach links site-level reintroduction with landscape-scale spatial planning for recovery.



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ORAL PRESENTATION ABSTRACT

Engaging Youth Communities through Capacity Building Approach to Safeguard Native Freshwater Turtles [AC07]

Dr. Judy Wan, H. C., Ray Leung, K. H.

Ocean Park Conservation Foundation, Hong Kong

Hong Kong is a global hub for the wildlife trade, particularly involving freshwater turtles. To address this challenge, the Ocean Park Conservation Foundation, Hong Kong (OPCFHK) has supported diverse research projects while promoting public awareness through exsitu conservation and community engagement. Central to these efforts is capacity building through education, training secondary and university students as change agents. Pre and postprogramme surveys consistently demonstrated clear learning gains.

From 2021 to 2023, OPCFHK launched the first territorywide *Freshwater Turtle Ambassadors Programme*, engaging 100 secondary students. Results showed that 93.5% of participants gained greater understanding of threats to local turtles, 83.9% expressed willingness to spread conservation messages, and over 93% acquired practical techniques for studying native species. Building on this success, the *Freshwater University Student Educator Programme* (2023–2025) was established as an extension of the Ambassadors Programme. Over two years, it involved 40 university students, all of whom affirmed enhanced capacity to design and implement conservation education activities.



ORAL PRESENTATION ABSTRACT

Protecting Turtles as Heritage: The Role of Zooarchaeology in Conservation Practice [AC08]

Jada Ko

Turtle Conservancy, Ojai, California, US

Turtles have co-created ecological and cultural histories with human societies since ancient times. In China, many turtle species now considered endangered are known to be culturally important throughout history, functioning not only as subsistence resources but also as enduring cultural heritage that shaped social traditions, political authority, and power relations. However, this long history of human–turtle interaction remains poorly understood in ways that can inform present-day conservation, including an understanding of species-specific vulnerability to human impacts. In this paper, I present zooarchaeological case studies that integrate archaeological and biological analyses of turtle remains from archaeological sites across China to reconstruct narratives of past human–turtle relationships and provide baseline data necessary to evaluate long-term human impacts on turtle populations including changes in historical distribution, population health, and species responses to human pressures. By viewing turtles as both biological species and cultural heritage, this study demonstrates how zooarchaeology can complement contemporary conservation science, refine ecological baselines, and contribute heritage-informed perspectives to conservation practice.



ORAL PRESENTATION ABSTRACT

Study of Indian Softshell Turtle in Chitwan National Park, Nepal [AC09]

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This study assessed the status, distribution, and threats to the Indian softshell turtle (*Nilssonia gangetica*) along the Rapti River in Chitwan National Park, Nepal. From September 2024 to April 2025, visual surveys were conducted across 53 sites, divided into three sections: Lothar to Sauraha, Sauraha to Kasara, and Kasara to Megghauli. A total of 72 individuals were recorded with higher abundance in less disturbed areas (Lothar–Sauraha and Sauraha–Kasara). Most turtles were seen basking or swimming in river habitats, particularly during sunny, mornings and afternoons. Nesting activity was observed only once, potentially due to habitat disturbance from soil and rock excavation. Four major threats were identified: fishing, habitat loss, hunting, and pollution.



Designing Survey Frameworks for Rare and Hard-to-Detect Chelonians: Inferences from *Manouria emys* [AC10]

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¹Smithsonian's National Zoo and Conservation Biology Institute

²The Akupara Foundation

Species that are rare, cryptic and/or threatened are often difficult to detect. Yet historically, survey methods have not accounted well for differential detection, even though such estimates are essential for conservation decision-making. Advances in survey methods and technologies, (e.g., occupancy modeling, camera traps, eDNA) offer improved approaches for estimating for community and population structure of difficult-to-detect wildlife.

The Asian Brown Tortoise, *Manouria emys*, is listed as Critically Endangered, yet its true status across its range remains uncertain. In Borneo, frequent social media observations suggest a current distribution that may be both widespread and locally relatively abundant.

To address this uncertainty, we are developing a survey framework designed to evaluate *M. emys* populations across multiple spatial scales. The approach integrates: (1) regional and local ecological species-specific knowledge, (2) collection and curation of opportunistic encounters, (3) unstructured, spatially explicit (i.e., GPS-tracked) search effort, (4) exploratory environmental DNA sampling, and (5) GPS telemetry of individual movements.

By testing this approach in Malaysian Borneo over the next 36 months, we intend to develop a protocol for assessing populations of *M. emys* across its range. Here, we present on the development of this protocol and its potential for use with other species in the region.



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ORAL PRESENTATION ABSTRACT

Initiating science-based conservation breeding program of critically endangered Malayan Giant Turtle (*Orlitia borneensis*) in Indonesia [RR01]

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The Malayan Giant Turtle (MGT) (*Orlitia borneensis*) is the largest freshwater turtle in Southeast Asia and is currently listed as Critically Endangered on the IUCN Red List. Once widespread across the Malay Peninsula, Borneo, and Sumatra, its populations have declined sharply due to hunting and habitat conversion, underscoring urgent need for conservation action.

Our rescue centre first received 19 confiscated adult turtles in 2003. Since then, the population has increased to 42 individuals, highlighting the species' reproductive potential. In response, we launched a collaborative conservation-breeding initiative in 2022 to establish an assurance colony. This effort resulted in eight hatchlings in its first year.

Despite this progress, broader conservation actions—including future translocations—remain constrained by limited ecological knowledge, outdated population and genetic data from wild populations, and the absence of reliable locality and pedigree records, increasing the risk of inbreeding and unintended crossbreeding.

Our four-year study has generated essential knowledge to support long-term, integrated population management and inform future conservation translocations. This work provides the foundation for a captive-breeding protocol, including health and husbandry management as well as genetic profiling, and is complemented by community-based in-situ conservation efforts on Belitung Island, aligned with the One Plan Approach for species recovery.



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ORAL PRESENTATION ABSTRACT

Reproductive Cycle Monitoring of Captive snail-eating turtles *Malayemys macrocephala* using Plasma vitellogenin and Radiography [RR02]

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Effective captive breeding and reintroduction programs rely on a clear understanding of reproductive biology, yet this remains poorly documented for many tropical freshwater turtles. This study investigates the reproductive cycle of the snail-eating turtle, *Malayemys macrocephala*, a Southeast Asian species increasingly threatened by religious release practices and egg harvesting. We monitored adult females, hatched and reared in captivity since 2007, through monthly blood sampling from May 2025 to January 2026—a period covering the onset through the peak of the reproductive season. We utilized vitellogenin, an egg yolk precursor protein, as a biomarker for reproductive status, analyzing plasma proteins via SDS-PAGE to identify female-specific bands. Radiographic (X-ray) imaging confirmed the presence of shelled eggs in October and December. We present the correlation between vitellogenin band intensity and egg presence across sampling periods. These findings offer practical physiological indicators for monitoring reproductive status, providing essential baseline data to enhance captive breeding management and conservation planning for the threatened freshwater turtles.



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ORAL PRESENTATION ABSTRACT

Diagnostic pathology: a tool for turtle conservation [RR03]

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Pentostomiasis and *Entamoeba* infections represent two significant disease threats to wild and captive turtle populations. Pentostomiasis, caused by endoparasitic crustaceans, can manifest with non-specific or respiratory clinical signs, while pathogenic *Entamoeba* spp. can cause severe, often fatal, necrohemorrhagic colitis. This presentation details these infections through two illustrative case studies, highlighting how subtle or overlapping gross findings can obscure their presence. Advanced diagnostic pathology, including histopathology to identify characteristic larval stages within granulomas and trophozoites invading colonic mucosa, is critical for definitive diagnosis. These cases underscore that accurate disease identification is foundational to effective management, informing targeted treatment, husbandry adjustments, and population-level interventions. Ultimately, they exemplify the indispensable role of diagnostic pathology in mitigating hidden health threats, thereby directly supporting the health, welfare, and conservation of endangered and threatened chelonian species.



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ORAL PRESENTATION ABSTRACT

Conservation-Oriented Clinical Management of Asian Turtles Seized from Illegal Wildlife Trade in Bangladesh [RR04]

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Illegal wildlife trade poses a persistent threat to global biodiversity, with South Asia serving as a major transit hub for trafficked reptiles, particularly freshwater turtles and tortoises, of which approximately 15,000 individuals have been seized during the last decade. In late September 2025, the WCCU intercepted a major shipment of live turtles and tortoises at Hazrat Shahjalal International Airport, preventing their illegal export and sending them to the Turtle Conservation Centre, CCA, for urgent veterinary care and rehabilitation. The seized animals included 790 juvenile Indian Roofed Turtles (*Pangshura tecta*), 116 Indian Star Tortoises (*Geochelone elegans*), one adult Indian Eyed Turtle (*Morenia petersi*), and two Indian Flapshell Turtles (*Lissemys punctata*).

The animals were packed into tight, poorly ventilated luggage, resulting in dehydration, stress, and shell damage, with some showing early signs of necrosis. Upon arrival at the center, immediate emergency intervention started with lukewarm water soaks to rehydrate and relieve stress. They were then given KMnO₄ baths for decontamination, and their carapaces and plastrons were gently scrubbed. The animals were sorted by species, weight, and health. Weak tortoises were fed herbivorous formulas via a tube and received heat-lamp therapy to aid their recovery.

Pangshura tecta were placed in 8-inch-deep aquatic tanks. The tanks were disinfected with water hyacinth to reduce the risk of carrying snail eggs that could cause gut problems, allowing the turtles to feed, bask, and rest. *Geochelone elegans* were housed in sand-substrate trays with supervised sunlight for thermoregulation and vitamin D.

Different medications were used for each species. *P. tecta* received oral enrofloxacin (10 mg/kg) in their tank water, while *G. elegans* with respiratory problems were given intramuscular ceftazidime (20 mg/kg every 48 hours). Roundworms in the star tortoise feces were treated with fenbendazole (50 mg/kg orally, repeated every 14 days).

The adult *Morenia petersi* had severe shell necrosis, covering 65% of its carapace. It was treated twice daily with saline cleansing, chlorhexidine debridement, silver sulfadiazine application (20-minute dwell time), saline rinse, and metronidazole topping. This treatment resulted in significant healing.

The turtles were fed high-fiber veggies like water spinach, pumpkin, carrots, grass, and cucumber. *P. tecta*, being omnivores, also ate fish feed and live fish. By January 8, 2026, 361 *Pangshura tecta* and 62 *Geochelone elegans* had died due to transport trauma, dehydration, and pre-existing health issues. However, the *Morenia petersi* and *Lissemys punctata* survived. The eyed turtle fully recovered its carapace.



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ORAL PRESENTATION ABSTRACT

Rescue and Rehabilitation: A Tool for the Conservation of the Freshwater Turtles of the Ganga River Basin. [RR05]

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Freshwater turtles of the Ganga River Basin are in crisis, declining rapidly under increasing pressures of habitat loss, fragmentation, improper fishing practices, and consumptive exploitation. The native turtle populations have drastically declined. To respond to this, rescue and rehabilitation centres were established across the basin, serving as recovery stations for confiscated, displaced, and injured turtles. Collectively, these centres have received over 11,000 individuals, including eight globally threatened species, each requiring species-specific quarantine, clinical stabilization, veterinary care, and husbandry intervention. With sustained scientific and technical guidance from the Wildlife Institute of India under the National Mission for Clean Ganga project, facilities have been systematically upgraded, infrastructure retrofitted, and standardized rescue-to-release rehabilitation protocols developed. Enclosures have been modified with focused integration of species-appropriate husbandry, including environmental enrichment, specialised feeding, and veterinary interventions. Positive outcomes from these interventions include the successful release of more than 9,000 clinically assessed, healthy turtles determined fit for survival in natural habitats. Delivering appropriate rescue, rehabilitation, and post-release readiness ensures that only healthy individuals are returned to the wild, contributing directly to population reinforcement and long-term restoration of threatened freshwater turtle populations in the Ganga Basin.



ORAL PRESENTATION ABSTRACT

Successes and Challenges in Restoring Cambodia's National Reptile, the Southern River Terrapin (*Batagur affinis*) in Cambodia. [RR06]

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The critically endangered Southern River Terrapin (*Batagur affinis*) is Cambodia's National Reptile and one of the world's 25 most endangered chelonians. In Cambodia, the species survives only in the Sre Ambel River system in Koh Kong Province. Remaining populations face severe threats from targeted hunting, accidental capture in fishing gear, illegal fishing, sand mining that destroys nesting sandbanks, and illegal riparian logging. Since the species' rediscovery in 2000, a long-term partnership between Wildlife Conservation Society, Fisheries Administration, Mandai Nature, and Turtle Survival Alliance has worked to conserve *B. affinis*. WCS implements key interventions including nest and habitat protection, head-starting and release, post-release monitoring, SMART patrol, education and awareness, and livelihood alternatives. Since 2002, 50 nests have been secured, producing 501 hatchlings with a 65% hatching success rate. Since 2015, 217 head-started subadult terrapins have been released into the Sre Ambel River. Most individuals are microchipped and fitted with acoustic transmitters, enabling monthly monitoring of movements, habitat use, and survival. From 2018–2021 cohorts, 78% of released individuals survived. Captive breeding milestones were achieved at the Koh Kong Reptile Conservation Centre, with 22 nests and 366 eggs produced in 2025. These results demonstrate steady progress toward restoring *B. affinis* in Cambodia.



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ORAL PRESENTATION ABSTRACT

Post-Release Monitoring of Captive-Reared Malayan Snail-Eating Turtles, *Malayemys macrocephala*: Population Estimates and Dispersal Patterns [RR08]

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The Malayan snail-eating turtle, *Malayemys macrocephala*, is common in Thai agricultural areas, rendering it susceptible to constant human disturbance. Despite its prevalence, data on population dynamics and post-release dispersal remain scarce. This study estimated the population size, distribution, and dispersal of captive-reared turtles released into a naturalized environment. Eggs collected from agricultural sites in Phra Nakhon Si Ayutthaya province in 2008 were incubated and reared at Chulalongkorn University until the turtles reached approximately 14 years of age. Sixty-four individuals were marked with PIT tags, morphologically measured, and released into a 3,200 m² conservation area in Saraburi province. Five field surveys were conducted between February and April 2022. Using the Cormack-Jolly-Seber (CJS) model, estimated population sizes at 1, 2, 4, 6, and 8 weeks post-release were 35, 8, 15, 8, and 3, respectively. Dispersal distances ranged from 4 to 85 meters from the release site. The observed rapid decline in estimated population size may reflect dispersal into nearby natural tributaries, low trap efficiency, predation, or habitat suitability issues. These findings provide critical baseline data for optimizing monitoring protocols and conservation strategies for released freshwater turtle populations.



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ORAL PRESENTATION ABSTRACT

Turtle Survival Center: 13 Years of Critically Endangered Asian Turtle Assurance Colony Management [RR09]

Cris Hagen and Clinton Doak

Turtle Survival Alliance

Turtle Survival Alliance (TSA) is a leader in transforming passion for turtles into effective conservation action through a global network of living collections and recovery programs. The mission of Turtle Survival Alliance is to protect and restore wild populations of tortoises and freshwater turtles through science-based conservation, global leadership, and local stewardship. March 2026 marks 13 years of operation for TSA's Turtle Survival Center (TSC) in South Carolina, U.S.A. The TSC is TSA's only U.S.-based facility and center of operations for captive turtle population management. The TSC currently maintains two dozen species of endangered and critically endangered Asian turtles that have been carefully chosen for captive management to increase their chances for continued survival. A few of these species are presumed functionally or totally extinct in the wild. The TSC has produced over 1,100 offspring from 27 species since its inception and participates in 16 Association of Zoos & Aquariums' (AZA) managed studbooks and Species Survival Plans. Repatriation to range countries where needed is a high priority of our management plan.

Rehabilitation and Reintroduction of Asian Turtles



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ORAL PRESENTATION ABSTRACT



Bridging In-Situ and Ex-Situ Conservation: Showcasing the Role of Zoos and Aquariums through Beale's Eyed Turtle Conservation at Ocean Park, Hong Kong [RR10]

Ashley Kwok, Calvin Fung

Ocean Park Hong Kong

Beale's Eyed Turtle (*Sacalia bealei*), a small aquatic species distinguished by its characteristic ocelli, faces severe threats from habitat loss and hybridization, necessitating urgent conservation action. In Hong Kong, collaborative initiatives led by the Ocean Park, Ocean Park Conservation Foundation Hong Kong, Lingnan University, and the Hong Kong Society of Herpetology Foundation have established a pioneering ex-situ breeding program. Notable achievements include the first successful hatch in 2020, increased egg production with 14 eggs collected in 2023, and five healthy hatchlings in 2025, supported by enhanced husbandry protocols.

Beyond ex-situ success, Ocean Park plays a vital role in bridging in-situ and ex-situ conservation by fostering public education, support research, and convening stakeholders through IUCN CPSG workshops. This integrated approach demonstrates the essential role of zoos and aquariums in uniting scientific research, captive breeding, and community engagement to safeguard the future of Beale's Eyed Turtles and other threatened species.



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ORAL PRESENTATION ABSTRACT

Protecting Vietnam's micro-endemic turtle *Cuora picturata* through technology, patrols, and public engagement [EB01]

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Vietnam is one of the world's most important freshwater turtle diversity hotspots, with around 25 turtle species, yet many are now threatened with extinction due to illegal trade and persistent poaching pressure. In 2025, the Center for Technology and Nature Conservation (CTNC) launched an integrated research-and-protection program for the micro-endemic Southern Vietnamese box turtle *Cuora picturata* across the Tay Hoa forest complex (Central Vietnam). From four survey periods (April, August, October, and December 2025), CTNC documented 71 turtle records, including *C. picturata* (7 records), *Cuora mouhotii obstii* (18), *Indotestudo elongata* (16), *Mauremys annamensis* (14), and several other species (e.g., *Amyda cartilaginea*, *Cyclemys pulchrestriata*, *Manouria impressa*, *Cuora cyclornata*). Two *C. picturata* were confirmed in the wild and, following one rescue-and-release protocols, three individuals were fitted with radio transmitters to study habitat use and strengthen site protection through targeted monitoring. In parallel, CTNC delivered SMART training to 67 staff (Deo Ca, Tay Hoa, Song Dinh protection forest), supported Tay Hoa patrol digitization with five smartphones, reached ~2,000 students through school programs, and engaged >10,000 people via community outreach and commune radio broadcasts. Between November–December 2025, CTNC patrols program removed ~200 snares and helped deter 10 repeat offenders, demonstrating how science, technology, and community action can rapidly reduce threats while building a long-term recovery pathway for *C. picturata* and other wildlife.



ORAL PRESENTATION ABSTRACT

Shell meet shell: the influence of the big-headed turtles on the freshwater snails [EB02]

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The big-headed turtle (*Platysternon megacephalum*) is a critically endangered species living in rocky hill streams in Hong Kong where the freshwater snail (*Sulcospira hainanensis*) constitutes a majority of its diet. Freshwater snails are known to exhibit various anti-predator behaviours such as seeking shelter or leaving the water. To investigate how chemical (olfactory) cues from the big-headed turtle affect snail behaviour, we conducted a series of 40-min experiments using four treatments which represent ascending levels of predatory risks – (1) aged tap water (control), (2) dead snails, (3) turtle, and (4) a mixture of dead snails and turtle. Our findings showed that snails hid in a shelter more frequently and consistently throughout the experiment in the turtle treatment. In contrast, the dead snail treatment triggered an initial increase in movement which declined over time. These results indicated that the freshwater snails respond to predation in a cue-specific manner, using the shelter when detecting turtles while increasing movement when noticing other threats. Understanding how the big-headed turtle influences the behaviour of freshwater snails — a dominant grazer in Hong Kong hill streams — provide insights into potential cascading effects of this predator-prey interaction on stream ecosystem dynamics and the turtle's ecological roles in Hong Kong.



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ORAL PRESENTATION ABSTRACT

Field Body Temperature and Microhabitat Use of the Spiny Hill Turtle (*Heosemys spinosa*) in Borneo [EB03]

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Information on the field thermal ecology of tropical terrestrial turtles remains limited, particularly for forest-dwelling species. This study reports field body temperature patterns and associated microhabitat use of the Spiny Hill Turtle (*Heosemys spinosa*) in Sarawak, East Malaysia (Borneo). A total of five adult individuals (four females and one male) of *Heosemys spinosa* were fitted with temperature-sensitive radio-transmitters as a part of larger ecological study between April 2017 to December 2018. Core body temperature readings were taken with implanted Thermochron temperature data loggers placed inside the coelomic cavity. A total of 12,321 field body temperature records were obtained, with values ranging from 22.0 to 33.5 °C. Ground temperatures measured at sites of turtle encounters were consistently narrow (24.0–24.4 °C). Periods of prolonged inactivity were recorded, during which individuals remained within refugia for 3–7 consecutive days while maintaining relatively stable body temperatures of 23.5–25.5 °C. Individuals were most frequently associated with shaded, densely vegetated microhabitats and typically emerged from refugia from mid-day onwards. The study highlights major aspects of the life histories of a tropical terrestrial turtle relevance to understanding habitat requirements and hence of interest, among others, in the conservation and management of the threatened species.



ORAL PRESENTATION ABSTRACT

Surviving Outside the Sanctuary: Reproductive Dynamics of *Malayemys macrocephala* in Thai Paddy Fields [EB04]

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The Malayan snail-eating turtle, *Malayemys macrocephala*, is a protected species inhabiting Southeast Asian agricultural areas, especially the paddy field. Because their habitats lie outside protected zones, these turtles face intensive disturbance from human activities. To gain insight for conservation management, this study assessed the reproductive strategy and estimated reproductive population size of *M. macrocephala* using mitochondrial and microsatellite (SSR) polymorphism. DNA samples were collected from 308 trapped turtles and hatchlings in a 16-hectare paddy field in central Thailand. Parentage assignment was carried out by the maximum likelihood analysis in the COLONY program. Seven cytochrome b haplotypes were detected in these offsprings. SSR analysis confirmed multiple nesting and multiple paternity as key strategies; at least 10 females laid multiple clutches, and 62% of clutches were sired by multiple males. Comparisons between subsequent clutches suggested female sperm storage for at least 10 weeks. The estimated reproductive population size was 128 individuals. While potentially sufficient to avoid immediate inbreeding constraints, this number falls below the 500 individuals expected to minimize genetic drift. Consequently, long-term monitoring of the *M. macrocephala* population in this agricultural landscape is essential for their continued viability.



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ORAL PRESENTATION ABSTRACT

Individuality as a lever for conservation management: unveiling personality traits in the endangered Beale's eyed turtle (*Sacalia bealei*) [EB05]

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Globally, freshwater turtles represent one of the most threatened vertebrate groups, with many populations experiencing marked declines due to rapid environmental changes. Conventional population assessments often overlook individual variabilities, potentially hindering effective conservation strategies. This study addresses this gap by adopting an individualistic perspective to investigate animal personality traits in a population of endangered Beale's eyed turtles (*Sacalia bealei*) in Hong Kong. Leveraging recent advances in computer vision model, I will present a semi-automated methodology for collecting high-resolution behavioral data from free ranging populations of *S. bealei* in Hong Kong. Through this approach, I will explore how consistent individual differences in behaviors along the boldness-shyness and exploration-avoidance continua influence key life history traits (e.g., foraging niche and movement patterns). By elucidating these individual-level behavioral drivers, this research aims to provide refreshed perspective into the ecological dynamics and demographic processes of threatened turtle populations. Ultimately, this individualistic approach offers a framework for developing more nuanced, behaviorally informed conservation strategies tailored to enhance the resilience of endangered freshwater turtles.



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From Reintroduction to Restoration: Examining Habitat Preferences and Settling Time in Reintroduced Burmese Star Tortoises in Central Myanmar [EB06]

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³ Wildlife Conservation Society–Cambodia Program

⁴ Turtle Survival Alliance

The Burmese Star Tortoise (*Geochelone platynota*) is a Critically Endangered species endemic to the Dry Zone of central Myanmar, facing extinction due to illegal overexploitation for international pet markets. Reintroduction is the only option for recovering *G. platynota* and restoring its functional role. We investigated the spatial preferences among seasons and settling periods of reintroduced *G. platynota* between two release cohorts. Radio telemetry tracking of two release cohorts was conducted, and detection data were analyzed in relation to habitat covariates. Two dispersal metrics were used to compare settling time across two release cohorts (wet and dry season releases). We observed that *G. platynota* avoids steeper slopes and rugged terrain, preferring open areas during the wet and cool-dry seasons, while seeking shelter under trees and shrubs in the dry season. The first cohort released in wet season exhibited a longer settling time of 77.69 ± 7.32 days (mean $\pm$ SE) compared to the second cohort released in the cool-dry season, which showed a stabilized movement pattern after an exploration phase lasting 45.2 ± 3.47 days (mean $\pm$ SE). These findings are vital for improving conservation management by informing site and seasonal selections for reintroduction and addressing seasonal habitat preferences.



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POSTER PRESENTATION ABSTRACT

Bacteriological Health Assessment of the Critically Endangered Bostami Turtle (*Nilssonia nigricans*) and Its Shrine Pond Habitat: Conservation and Public Health Implications in Bangladesh

Sabrina Ferdous (presenter)¹, Rokeya Ahmed¹, Rubiya Subrina², Ashfiya Ananna², Mohammad Showkat Mahmud², Rahima Begum²

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The Bostami turtle (*Nilssonia nigricans*) is a Critically Endangered species that survives within a long-established shrine pond system in Bangladesh, where high animal density and close human contact raising concerns regarding zoonotic disease transmission. This ongoing study aims to investigate the bacteriological status of Bostamiturtles and its shrine pond habitat, with a specific focus on zoonotic bacteria of public health importance. So far, microbial analysis has been performed on turtle oral and cloacal swabs (6 samples) and pond water samples (8 samples from different location within the shrine pond). All samples were analyzed using selective and differential culture media for presumptive identification of enteric and aquatic bacteria. *Escherichia coli* and *Salmonella* spp. detected in 75%, and 37.5% of pond water samples and 100%, and 83.3% of turtle samples respectively. This result suggests fecal contamination and environmental circulation of enteric bacteria. Additionally, non-pigmented *Pseudomonas* spp. and *Vibrio* spp. were isolated from pond water as well as from turtle rectal sample. Confirmatory biochemical and molecular identification of isolate, along with further characterization of zoonotic potential are ongoing. The high prevalence of enteric bacteria and opportunistic bacteria highlights potential health risks to *N. nigricans* and zoonotic risks within shrine pond environment.



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POSTER PRESENTATION ABSTRACT

Potential fungal pathogens isolated from the endangered yellow-margined box turtle (*Cuora flavomarginata*) in northern Taiwan

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Fungal diseases have emerged as an arising health concern in wild herptile, largely driven by intensified climate change and human activities. Previous studies have indicated that such infections could lead to health impacts, population declines and even mortality in severe cases, posing particular risk to already endangered one. Recently, novel fungal species have even been isolated from various chelonian species exhibiting ulcerative shell and skin lesions. Similar symptoms have been observed in the endangered yellow-margined box turtles (*Cuora flavomarginata*) within northern Taiwan. However, the underlying causes remain poorly understood as limited research was done before. Hence, this study demonstrates the first genetic identification of fungi associated with suspected shell infections on the plastron scutes of *C. flavomarginata* along the watershed of Feitsui Reservoir in Taiwan. Using agar isolation and molecular analysis, a total of 16 fungal species were successfully isolated from the whitish flakes collected from 12 turtle individuals. The predominant fungal species existed on the plastron are environmental saprophytes. Four potential opportunistic pathogens, *Sarocladium* sp., *Geotrichum candidum*, *Metarhizium* sp. (Ascomycota) and *Mucor* sp. (Mucoromycota), have been identified and reported in previous cases of chelonian mycoses. The occurrence of distinct fungal pathogens across different individuals indicates that shell lesion may arise from multiple causative agents rather than a single etiological species. Shell lesion in the early stage are examined to be present around the seam regions, which are composed mainly of soft alpha keratin, a pattern that may be reflected by the limited keratinolytic capacity of opportunistic fungi. High humidity within the study area favours the fungal growth, and future environmental conditions under climate change may further exacerbate infection risk. My findings have provided baseline information of potential fungal pathogens, however further studies are required to determine the long-term impact of these opportunistic fungi and the conservation strategy on *C. flavomarginata*.



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POSTER PRESENTATION ABSTRACT

Underwater Eyes: A novel non-invasive approach to study freshwater turtles

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Effective conservation of endangered freshwater turtles requires monitoring tools that provide robust and informative ecological data. Traditional baited hoop trapping has been widely used for field turtle surveys in Asia but presents several limitations, such as turtles being able to escape and the risk of captured individuals drowning. In this study, we tested the feasibility and effectiveness of baited remote underwater video (BRUV) systems in hilly streams in Hong Kong, southern China. The remote videos were able to detect the presence of freshwater turtles, specifically the critically endangered Big-headed Turtle (*Platysternon megacephalum*).

Preliminary data indicates that BRUV can effectively detect the presence of Big-headed Turtles, with most first detections occurring within two hours after deployment of the BRUV. In addition, BRUVs provide insights regarding the turtles' activity patterns, aquatic behaviours, and interspecific interactions — such ecological data would be difficult to obtain through conventional survey methods.

While challenges remain, such as sex, individual identification, and accurate size estimation, this novel approach provides a practical and time-efficient method for collection of occurrence and abundance data, without stress associated with trapping and handling. Our findings suggest that integrating BRUVs into monitoring programs not only increases turtle detection rates and facilitates the detection of larger turtles that are rarely captured by hoop traps, but also enhances our understanding of turtle ecology while significantly minimising disturbance and stress to these animals.



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POSTER PRESENTATION ABSTRACT

Homebodies or Explorers? Tracking the Critically Endangered Big-Headed Turtle (*Platysternon megacephalum*) movements through mark-recapture

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Understanding spatial ecology is essential for the conservation of the endangered freshwater turtles. This study presents results from a two-year mark-recapture and monitoring effort in Hong Kong's montane streams. The study investigated the movement patterns and site fidelity of a healthy population of Big-headed Turtles (*Platysternon megacephalum*) - a stream specialist and heavily impacted by poaching and habitat degradation across its range in Southeast Asia and southern China.

Individual turtles were uniquely identified using shell notching techniques and microchips, with recapture events recorded across multiple stream pools. A total of 14 individuals were involved in three or above recapture events within the approx. 1.2 km-long transect during the survey. Based on the available data, our findings suggest that this species exhibits strong site fidelity, with most individuals remaining within the same or adjacent pools (< 60 m apart) during the 20-month monitoring period. No long-distance movements (> 300 m) were recorded among the recaptured individuals in the study, indicating their home ranges can be highly restricted when food sources are abundant and habitats are well-protected. This highlights the importance of preserving integrity of the stream ecosystems for their survival. Regular patrolling combined with intensive mark-recapture can provide an effective and scientifically robust approach for monitoring and conserving this cryptic and critically endangered species.



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POSTER PRESENTATION ABSTRACT

Numerical cognition in freshwater turtles: What cues do *Mauremys sinensis* use to discriminate quantity?

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Recent studies have demonstrated that captive freshwater turtles exhibit remarkable numerical discrimination abilities. Most individuals of the Chinese stripe-necked turtle (*Mauremys sinensis*) and red-eared slider (*Trachemys scripta elegans*) can accurately discriminate ratios as fine as 9:10. However, the mechanisms underlying their quantity judgments remain unclear. Do turtles rely on overall surface area, object density, or the minimum convex polygon formed by the objects? Our understanding of how these animals process numerical information remains limited. In this study, we trained ten *Mauremys sinensis* individuals and conducted tests using a tablet computer. In the area-based tests, all turtles quickly learned to select the larger red region. Our experimental design further demonstrated that the effect of area ratio was stronger than that of absolute area difference. We then designed a series of “conflict trials”, in which both sides displayed the same number of red objects, but one side had higher object density and a smaller convex polygon, whereas the other had lower density and a larger convex polygon. On the same day, we also presented standard numerosity trials with standard answers, which served as a daily performance baseline for each individual. Among the ten turtles, three preferred to choose the side with the higher density, and two preferred the side with the larger convex polygon. The remaining five individuals failed to show a consistent preference and resolved the task either by (1) random choice, or (2) consistently selecting the same side. These findings reveal substantial individual variation in how turtles integrate visual information when making quantity-related decisions. Interestingly, regardless of whether object density or minimum convex polygon size was used as a cue, individuals that showed clearer and more consistent preferences tended to exhibit better overall performance. This pattern suggests that the ability to rapidly extract and integrate relevant information may contribute to higher accuracy. Understanding such cognitive variation could be valuable for conservation programs, particularly in translocation or reintroduction efforts where behavioral flexibility and information integration may affect survival outcomes.



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POSTER PRESENTATION ABSTRACT

Operation *Mauremys*: Rebalancing Propagule Pressure to Restore Native Turtle Dominance in Hong Kong and beyond

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Urban wetlands in Hong Kong are increasingly dominated by the invasive red-eared slider (*Trachemys scripta elegans*), introduced through the pet trade and culturally motivated mercy release. Spatial analyses across ten major wetlands show sliders concentrated in highly urbanised catchments, reflecting sustained human-mediated propagule pressure. Native turtles such as *Mauremys reevesii* remain more widespread but persist at substantially lower densities. Notably, *Mauremys* are also common in the pet trade, indicating that invasion success is driven less by trade presence than by relative propagule pressure.

We developed a two-species, stage-structured population model to test whether native dominance can be restored within ten years by strategically altering propagule inputs. Slider releases were parameterised using estimates from 30–40 turtle-selling outlets, average sales volumes, and proportions associated with religious release or abandonment. We simulated annual supplementation of 1,000 *Mauremys* under scenarios reducing slider releases by 0%, 50%, 80%, and 90%.

Supplementation alone did not shift dominance. Without intervention, natives comprised 12% after ten years; an 80% reduction in Slider releases increased this to 32%, and with a 90% reduction, some wetlands exceed 50% native share.

These results demonstrate that culturally informed reduction of invasive propagule pressure is essential for native recovery and provide a scalable framework for turtle conservation programs across Asia.



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POSTER PRESENTATION ABSTRACT

Genetic Assessment of Confiscated Hawksbill Turtles (*Eretmochelys imbricata*) in China Reveals Transboundary Poaching Hotspots and Cryptic Diversity

Huaiqing Chen

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The critically endangered hawksbill turtle (*Eretmochelys imbricata*) faces severe pressure from the illegal tortoiseshell trade, with Hainan Island, China, emerging as a major regional confiscation hub. However, the geographic origins of trafficked individuals remain poorly understood. To elucidate these patterns, we analyzed 720-bp mitochondrial control region sequences from 107 hawksbills sampled between 2015 and 2020, comprising 102 individuals from the illegal trade and five rescued from the Xisha Islands. We identified 25 haplotypes, including nine novel haplotypes, all clustering within Indo-Pacific clades I and III. Mixed-stock analysis (MSA) identified the Philippines (57.5%; 95% CI: 44.8%–69.8%) and East Malaysia (26.1%; 95% CI: 15.5%–37.8%) as the primary sources, pinpointing the geographic interface between the South China Sea and the Sulu Sea as the principal extraction zone for the Hainan trade. Significantly, the identification of nine novel haplotypes within the trade cohort points to the existence of cryptic or unsurveyed nesting populations in the South China Sea and adjacent regions. As the first large-scale genetic assessment integrating both traded individuals and native hawksbill turtles around Hainan Island, this study underscores the urgent need to strengthen international enforcement and to expand genetic research to elucidate the population structure of this critical region.



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POSTER PRESENTATION ABSTRACT

Localized dysbiosis and functional reprogramming of the skin microbiome in captive-bred green turtles with skin ulceration

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Sea turtle skin microbiota forms a key host barrier that supports microbial homeostasis and defense against pathogens, yet its disruption during ulceration remains poorly understood. Here, we combined metagenomic sequencing and 16S rRNA profiling to investigate microbial diversity, community composition, co-occurrence patterns, functional potential, antibiotic resistance genes (ARGs), and putative pathogens in healthy skin (SHG), non-lesional skin of ulcerated turtles (NSG), and lesional skin (LSG) of captive-bred green turtles (*Chelonia mydas*). Lesional skin showed reduced alpha diversity, marked community divergence, and a shift from deterministic to stochastic assembly, indicating breakdown of host ecological filtering. These changes were largely confined to lesions, while NSG remained similar to healthy skin. Lesional communities also exhibited simpler, more modular networks. Functionally, lesions were enriched in nucleotide metabolism, ribosome, and central carbon metabolism, but depleted in quorum sensing and fatty acid metabolism. Although total ARGs abundance was similar among groups, lesions showed clear restructuring of ARGs composition, resistance mechanisms, and high-risk ARGs burden. Putative pathogens also shifted from *Clostridium* dominance in healthy skin to co-dominance by *Clostridium* and *Enterococcus* in lesions. These findings reveal localized but profound microbiome dysbiosis associated with skin ulceration in captive-bred green turtles.



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POSTER PRESENTATION ABSTRACT

Sea Turtle Conservation and Practices in the South China Sea

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The green turtle (*Chelonia mydas*) is a Chinese national first-level protected wild animal, and the only sea turtle species that nests in Chinese waters. The Xisha Islands are currently the largest green turtlenesting ground in China, which is crucial for the survival and reproduction of the green turtle population. However, it still faces many threats. In recent years, our research team has mainly carried out ecological monitoring and protection evaluation of the nesting grounds in terms of the distribution of nesting grounds, environmental quality assessment, and environmental pollutants (trace elements, plastics, and microplastics). The research found that green turtle nesting habitats on 12 islands and reefs, including North Island, Middle Island, and South Island of the Qilanyu, as well as Jinqing Island and Ganquan Island within the Yongle Islands. The total area of these nesting grounds is 0.1062 km² (106,200 m²). Among them, the nesting ground area of North Island in Qilanyu is the largest (0.0436 km²), and the beach utilization rate is the highest (70.75%). Combining remote sensing satellite image mapping and field investigation, it was found that green turtles tend to choose areas with large island area, wide beach, high vegetation coverage, slope range between 8.76% and 13.46%, and less human activities for nesting. These areas should be given key protection and management. In addition, the monitoring found that the beach area of North Island has been decreasing year by year, and the rising tide caused by typhoons has flooded the sea turtle nests, resulting in an average nestloss rate of 35.25%. The accumulation of plastics and microplastics on the beach will affect the nesting and hatching of turtles. Based on the above threats, it is recommended to carry out long-term monitoring of the important sea turtle nesting grounds in Xisha and carry out restoration work for the threats faced.



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POSTER PRESENTATION ABSTRACT

From Robust Baselines to Practical Guidelines: Robust Design Demography and Sampling Evaluation for the Endangered Yellow-Margined Box Turtle (*Cuora flavomarginata*)

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CALL FOR PAPER BY INTEGRATIVE CONSERVATION

Integrative Conservation is producing a special Issue to provide an open-access platform for ICAT participants to share their work on Asian turtles with a wider audience. Authors participating in oral and poster presentations are both encouraged to submit their manuscripts directly to the journal. For more information and submission, please click this [link](#) before 31 August 2026.



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Call for Papers

Biology and Conservation of Turtles and Tortoises in Asia

Submission deadline: Monday, 31 August 2026

About one-third of the world's 359 living turtle species are classified as endangered or critically endangered by the IUCN. Half of these species (32 species) are found in Asia, where they are being driven to extinction largely due to poaching and habitat loss/degradation. The International Conference on Integrated Conservation of Asian Turtles (ICAT) addresses this urgent issue by uniting global experts, institutions, and early-career conservationists to foster cross-sector collaboration. With a focus on integrating science, technology, and practice, ICAT aims to advance conservation strategies through keynote lectures, symposia, research presentations, and field visits. A central theme is bridging the gap between disciplines - scientists, zookeepers, veterinarians, policymakers, and educators - to tackle challenges like poaching, disease transmission, and genetic compatibility in reintroduction programs. ICAT aspires to catalyze unified, effective action to safeguard Asia's imperiled turtles and promote sustainable conservation solutions across the region.

One of the challenges in Asian turtle conservation is the limited scientific understanding of these animals, which hinders conservation efforts such as conservation breeding and reintroduction. Compared with regions such as North America and Europe, fewer ecological studies have been conducted on Asian turtles, partly because fewer experts work in the area and wild turtle populations are rare.

The aim of the Special Issue is to provide an open-access platform for the conference participants to share their work on Asian turtles with a broader audience. A peer-review process can ensure that the work being published is scientifically rigorous and robust, and an open-access format will enhance its visibility and accessibility.

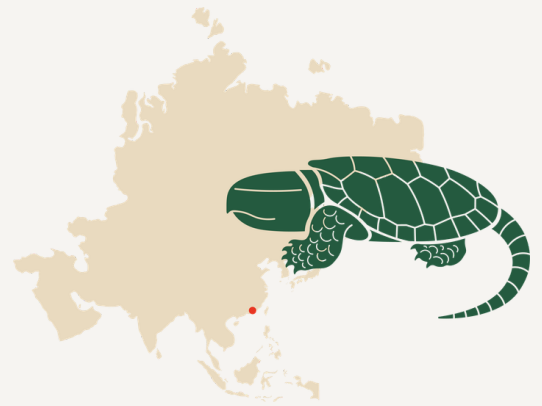
Topics for this call for papers include but are not restricted to:

- Rehabilitation and reintroduction of Asian turtles
- Ecology and natural history of Asian turtles
- Wildlife trade and forensics
- Conservation strategies and management of Asian turtle populations



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