



Species

ISSUE 62

2022 Report of the IUCN Species Survival Commission and Secretariat



The IUCN Species Survival Commission (SSC)

The IUCN Species Survival Commission (SSC) is a science-based network of thousands of volunteer experts from almost every country of the world, all working together toward achieving the vision of “a just world that values and conserves nature through positive action to both prevent the loss and aid recovery of the diversity of life on earth.”

Members of SSC belong to one or more of near 200 Specialist Groups, Red List Authorities, Action Partnerships, Task Forces, and Conservation Committees that make up the Network, each focusing on a taxonomic group (plants, fungi, mammals, birds, reptiles, amphibians, fishes, and invertebrates), national species, or a disciplinary issue, such as sustainable use and livelihoods, translocation of species, wildlife health, climate change, and conservation planning.

Framed by the Species Conservation Cycle, SSC’s major role is to provide information to IUCN on biodiversity conservation, the inherent value of species, their role in ecosystem health and functioning, the provision of ecosystem services, and their support to human livelihoods. This information is fed into the IUCN Red List of Threatened Species.

2021-2025 Species Strategic Plan

The IUCN Species Strategic Plan encompasses the joint work of the IUCN Species Survival Commission and a number of partnerships to achieve more than 2,700 targets proposed by the Network during the 2021-2025 quadrennium.

To accomplish those targets, the Species Conservation Cycle was established, which is the conceptual framework for the Network activities. The Species Conservation Cycle’s main purpose is to guide efforts for valuing and conserving biodiversity through three essential components that are linked to each other:

ASSESS: Understand and inform the world about the status and trends of biodiversity.

PLAN: Develop collaborative, inclusive and science-based conservation strategies, plans and policies.

ACT: Convene and mobilise conservation actions to improve the status of biodiversity.



Their implementation requires two transversal components:

NETWORK: Enhance and support our immediate network and alliances to achieve our biodiversity targets.

COMMUNICATE: Drive strategic and targeted communications to enhance our conservation impact.

SSC Species Report

Annual progress in the implementation of the 2021-2025 Species Strategic Plan is documented in the SSC *Species Report*, which consists of a comprehensive description and analysis of the activities and results generated by the members of the SSC Network each year. Each SSC Group contributes to this document by providing a yearly summarised description of their achievements, which is presented in stand-alone reports.

Structure of the IUCN SSC Stand-alone Report

Stand-alone reports summarize the activities conducted and results generated by each group member of the SSC. Following, is the structure of the stand-alone report and the contents under each session.

Title of the SSC Group

Photograph(s) of the Chair / Co-Chairs

Group information

Includes names of Chair / Co-Chairs, Vice-Chairs, Deputy Chairs, Red List Authority Coordinators and Program Officers, their institutional affiliations, number of members and social networks currently active.

Logo of the SSC Group

Mission statement

Includes the mission of the group.

Projected impact for the 2021-2025 quadrennium

Includes the description of the impact on species conservation resulting from the implementation of the targets formulated by the group for the 2021-2025 quadrennium.

Targets for the 2021-2025 quadrennium

Includes the targets planned by the SSC Group for the 2021-2025 quadrennium ordered alphabetically by component of the Species Conservation Cycle. Each target is labeled with a numerical code (e.g., T-001, T-012) that identifies it in the SSC DATA database and its status for the reported year is indicated (Not initiated, On track or Achieved).

Activities and results

Includes the targets for which activities were conducted and results were generated during the reported year, ordered alphabetically, first by component of the Species Conservation Cycle, and second by Activity Category. Description of activities and results includes the indicator that best describes progress, its associated quantitative or qualitative result, and the narrative description of the activity conducted or result obtained. Each activity or result reported is linked to the Key Species Result to which it is mainly associated (e.g., KSR#1, KSR#5).

Acknowledgements

Includes the acknowledgements to funding agencies, partners, and persons who contributed to the progress of the targets of the group.

Summary of achievements

Summarises information of the group's strategic plan for the quadrennium and progress achieved implementing targets for all the components of the Species Conservation Cycle during the reported year.

Example for the recommended citation:

Botton, ML and Shin, PKS. 2023. 2022 Report of the Horseshoe Crab Specialist Group. In: Nassar, JM, García, L, Mendoza, L, Andrade, ND, Bezeng, S, Birkhoff, J, Bohm, M, Canteiro, C, Geschke, J, Henriques, S, Ivande, S, Mileham, K, Ramos, M, Rodríguez, A, Rodríguez, JP, Street, B, and Yerena, E (Eds.). 2022 Report of the IUCN Species Survival Commission and Secretariat. International Union for Conservation of Nature. 6 pp.

Animalia

Fungi

Plantae

National Species

Disciplinary

Action Partnership

Task Force

Red List Authority

Committee

Center for Species Survival

2022 Report

IUCN SSC Horseshoe Crab Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: Asian Horseshoe Crab Group



CO-CHAIR

Mark L. Botton

Department of Natural Sciences, Fordham University, New York, New York, US

CO-CHAIR

Paul K.S. Shin

Department of Biology and Chemistry, City University of Hong Kong, Kowloon, Hong Kong, China

RED LIST AUTHORITY COORDINATOR

Kit Yue Kwan

College of Marine Sciences, Beibu Gulf University, Qinzhou, China

NUMBER OF MEMBERS

89

Mission statement

The four extant species of horseshoe crabs are imperilled because of overfishing for use as food, bait, the production of biomedical products derived from their blood, and because of habitat loss or alteration due to shoreline development and armouring against coastal erosion. The group aims to protect horseshoe crabs in the world through collaborative effort in conservation of their populations and habitats, and in raising public awareness of their importance in evolutionary history, marine coastal ecology and biomedical uses.

Projected impact 2021–2025

Two species of horseshoe crabs in Southeast Asia, the Mangrove Horseshoe Crab (*Carcinoscorpius rotundicauda*) and Coastal Horseshoe Crab (*Tachypleus gigas*), are currently Data Deficient. Our group is currently working on updating their Red List status based on information being provided by our members residing in the range states of both species. The assessment of the Green Status of Species has been completed for the Vulnerable American Horseshoe Crab (*Limulus polyphemus*) and

is being prepared for the Endangered Tri-spine Horseshoe Crab (*Tachypleus tridentatus*). Collectively, these activities should be completed during this quadrennium and lead to greater protection for all four species of horseshoe crabs.

Targets 2021–2025

ASSESS

T-003 Complete the Green Status of Species assessment for the Tri-spine Horseshoe Crab (*Tachypleus tridentatus*). Status: On track

T-004 Complete the Red List assessment for the two species of Asian Horseshoe Crabs, the Mangrove Horseshoe Crab (*Carcinoscorpius rotundicauda*) and the Coastal Horseshoe Crab (*Tachypleus gigas*). Status: On track

PLAN

T-005 Conduct regional conservation planning for the American Horseshoe Crab (*Limulus polyphemus*) to identify local and regional actions. Status: Not initiated

T-006 Develop a conservation plan for the Tri-spine Horseshoe Crab (*Tachypleus tridentatus*) through the Conservation Planning Specialist Group’s (CPSG) species conservation process. Status: On track

T-007 Plan worldwide outreach/education events concerning the conservation of horseshoe crabs and their coastal habitats for the annual International Horseshoe Crab Day on 20 June using social media. Status: Achieved

ACT

T-008 Explore the feasibility of naming Horseshoe Crabs as a World Heritage Species through UNESCO. Status: Not initiated

NETWORK

T-001 Develop best practices for adult and juvenile Horseshoe Crab population assessments for capacity building among members of the Specialist Group. Status: On track

T-002 Establish an Asian Horseshoe Crab Observation Network programme in partnership with government agencies, NGOs and/or conservation organisations. Status: Achieved

T-009 Conduct two online training sessions/seminars on juvenile horseshoe crab survey protocols through the Asian Horseshoe Crab Working Group to support participants joining the Asian Horseshoe Crab Observation Network. Status: Achieved

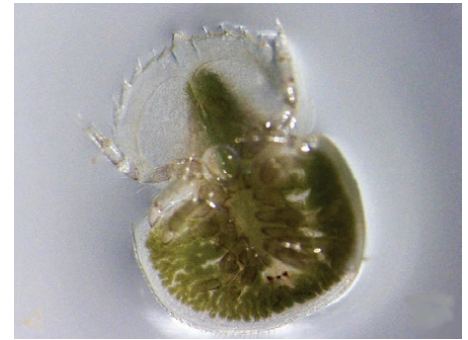


American Horseshoe Crab
(*Limulus polyphemus*) embryo
Photo: Mark Botton



American Horseshoe Crab
(*Limulus polyphemus*) spawning
Photo: Mark Botton

American Horseshoe Crab
(*Limulus polyphemus*) first instar larva
Photo: Mark Botton



Mangrove Horseshoe Crab
(*Carcinoscorpius rotundicauda*)
spawning in Hong Kong, China
Photo: Kevin Laurie

COMMUNICATE

T-010 Publish a book based on papers presented at the 3rd and 4th International Workshops on the Science and Conservation of Horseshoe Crabs in 2015 and 2019.

Status: Achieved

T-011 Publish an overview on the threats and conservation of horseshoe crabs for *Imperiled: The Encyclopedia of Conservation*.

Status: Achieved

T-012 Organise/coordinate at least three meetings or workshops on the science and conservation of horseshoe crabs for various stakeholders.

Status: Achieved

Activities and results 2022

ASSESS

Red List

T-004 Complete the Red List assessment for the two species of Asian Horseshoe Crabs, the Mangrove Horseshoe Crab (*Carcinoscorpius rotundicauda*) and the Coastal Horseshoe Crab (*Tachypleus gigas*). (KSR 6)

Number of species that have been assessed through the different tools: 0

Result description: Further data and information were collected for the Red List Assessment (RLA) of the Mangrove



Students learning horseshoe crabs on International Horseshoe Crab Day in China
Photo: Zaohong Weng

Horseshoe Crab (*Carcinoscorpius rotundicaudata*) across its geographical range in Asia and the RLA document was finalised.

Green List

T-003 Complete the Green Status of Species assessment for the Tri-spine Horseshoe Crab (*Tachypleus tridentatus*). (KSR 6)

Number of new Green Status of Species assessments completed: 0

Result description: Initial discussion was held with the Marine Conservation Coordinator from the IUCN SSC Global Center for Species Survival regarding Red List Assessment and Green Status of Species Assessment.

PLAN

Planning

T-006 Develop a conservation plan for the Tri-spine Horseshoe Crab (*Tachypleus tridentatus*) through the Conservation Planning Specialist Group's (CPSG) species conservation process. (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Based on the advice from a discussion with the Marine Conservation Coordination from the IUCN SSC Global Center for Species Survival, further advice from the Conservation Planning Specialist Group will be sought

for conservation planning for the Tri-spine Horseshoe Crab (*Tachypleus tridentatus*) which is listed as EN on the Red List.

T-007 Plan worldwide outreach/education events concerning the conservation of horseshoe crabs and their coastal habitats for the annual International Horseshoe Crab Day on June 20th using social media. (KSR 9)

Participation in outreach/education events on International Horseshoe Crab Day: Ongoing.

Result description: More than 25 activities were organized in China, Japan, Malaysia, Bangladesh, Germany, and USA in celebration of the Third International Horseshoe Crab Day during the period of June 2022. These activities include a seminar in Bangladesh; a horseshoe crab carnival and juvenile horseshoe crab release activity in China; a drawing competition in Germany; activities on Sone Higata mudflat, horseshoe crab lesson at Karita elementary school, beach cleanup, spawning observation, eco-tour, and a special exhibition in Japan; one world ocean carnival in Malaysia; public talk and juvenile horseshoe crab rearing and release activity in Taiwan; and exhibition and a public talk in the USA.

NETWORK

Capacity building

T-001 Develop best practices for adult and juvenile horseshoe crab population assessments for capacity building among members of the Specialist Group. (KSR 2)

Documentation of standardised survey protocols: Achieved.

Result description: The 2021 result summary from the Observation Network under the Asian Horseshoe Crab Working Group was released in June 2022 through Facebook and WeChat groups. Five indicators of juvenile horseshoe crabs are used to analyse the core distribution areas and availability of suitable nursery habitats, which include (1) quadrat mean density, (2) quadrat highest density, (3) percentage of quadrat with occurrence, (4) Lloyd mean crowding, and (5) patchiness. Indicator to reflect healthy juvenile population structure is still being explored. This set of data will serve a basis for ongoing refinement for horseshoe crab population assessment across Asia.

T-009 Conduct two online training sessions/seminars on juvenile horseshoe crab survey protocols through the Asian Horseshoe Crab Working Group to support participants joining the Asian Horseshoe Crab Observation Network. (KSR 2)



A student poster to promote horseshoe crab conservation organized by Persatuan Benih Hijau Society in Malaysia in 2022
Photo: Baiqi Choong



Artworks from students from a horseshoe crab awareness program at Neuwirtshaus Primary School, Germany in 2022
Photo: Dorkas Kaiser, Katrin Nassal

Number of training sessions/seminars offered: 6

Result description: Six online training sessions on systematic sampling of horseshoe crabs for the participating member institutions were conducted from March to July 2022.

Synergy

T-002 Establish an Asian Horseshoe Crab Observation Network programme in partnership with government agencies, NGOs and/or conservation organisations. (KSR 2)

Collection of standardised Asian Horseshoe Crab population data across their geographical range: Ongoing.

Result description: The application for 2022 Observation Network surveys has been initiated. There are ten new institution members and in total, the Network has 26 institution members from China (including Hong Kong), Japan and the Philippines, with 40 monitoring stations.

COMMUNICATE

Communication

T-010 Publish a book based on papers presented at the 3rd and 4th International Workshops on the Science and Conservation of Horseshoe Crabs in 2015 and 2019. (KSR 12)

Number of publications: 1

Result description: The book *International Horseshoe Crab Conservation and Research Efforts: 2007-2020*, edited by members of the IUCN SSC Horseshoe Crab Specialist Group, was published in 2022. The books contain 40 papers of updated research and studies of horseshoe crabs under the topics of Evolution Genetics and Adaptations, Population Dynamics and Ecology, Conservation Efforts and Management Education, and Biology and Physiology.

T-012 Organise/coordinate at least three meetings or workshops on the science and conservation of horseshoe crabs for various stakeholders. (KSR 12)

Number of meetings/workshops: 0

Result description: Proposals were sought from members whose organization would plan to host the 5th International Workshop on the Science and Conservation of Horseshoe Crabs in 2024, and a host organization was identified.

Acknowledgements

The IUCN Horseshoe Crab Specialist Group thanks all members who have contributed their time and effort in assisting the group to complete various planned activities. We are grateful for their input, together with different institutions and organizations, in organizing various activities to celebrate

the International Horseshoe Crab Day, to raise public awareness on the importance of the conservation of horseshoe crabs. We also thank the late Professor Jennifer Mattei, a long-standing member of our Steering Committee, whose effort in establishing Project Limulus and promoting citizen science in the conservation of horseshoe crabs is much appreciated.

Summary of achievements

Total number of targets 2021–2025: 12

Geographic regions: 4 Global, 3 America, 7 Asia

Actions during 2022:

Assess: 2 (KSR 6)

Plan: 2 (KSR 8, 9)

Network: 3 (KSR 2)

Communicate: 2 (KSR 12)

Overall achievement 2021–2025:

