IUCN SSC Species Survival Commission

Species

ISSUE 64

2023 Report of the IUCN Species Survival Commission and Secretariat

Stand-alone report
IUCN SSC Butterfly and Moth Specialist Group

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 and Centers for Species Survival (CSS) each year. Each SSC and CSS group contributes to this document by providing a yearly summarised description of their achievements, which is presented in standalone reports.

Structure of the IUCN SSC and CSS Stand-alone Reports

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

Title of the group

Photograph(s) of the Chair/Co-Chairs

Group information
Includes names of Chair/Co-Chairs, Vice-Chairs, Deputy Chairs, Red List Authory Coordinators, Program Officers, Species Survival Directors, and Species Survival Officers, their institutional affiliations, number of members and social networks currently active.

Logo of the 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 or CSS 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.

Animalia

Fungi

Plantae

National Species

Disciplinary

Action Partnership

Task Force

Red List Authority

Committee

Center for Species Survival

Example for the recommended citation:
Böhm, M. and Jordan, M. 2024. 2023 Report of the Butterfly and Moth Specialist Group. In: IUCN SSC and Secretariat. *2023 Report of the IUCN Species Survival Commission and Secretariat*. Gland, Switzerland: IUCN. 8 pp.

2023 Report

IUCN SSC Butterfly and Moth Specialist Group

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NUMBER OF MEMBERS
52

SOCIAL MEDIA AND WEBSITES
Facebook: IUCN SSC Butterfly & Moth Specialist Group
X: @IUCNButterflySG

Mission statement

The mission of the IUCN SSC Butterfly and Moth Specialist Group is to increase knowledge on the taxonomy, ecology and conservation status of Butterflies and Moths around the world and promote their long-term conservation.

Projected impact 2021–2025

Increased awareness of Butterfly and Moth status through assessment and outreach; increased action in Butterfly conservation through establishment of action plans (e.g. Swallowtails); increased capacity for species assessment and conservation planning within the Specialist Group.

Targets 2021–2025

ASSESS

T-003 Create a global inventory of Butterfly monitoring schemes and available time series data (with collaborators) to help us assess data gaps and capacity needs and build a Living Planet Index for Butterflies.
Status: On track

T-007 Support the development of national or regional Red List assessments for Butterflies and Moths and improve linkages between national Red Lists and the global IUCN Red List (facilitate upload of assessments from national Red Lists to the global IUCN Red List).
Status: On track

T-009 Complete a first global assessment of 1,500 species for a sampled Red List Index of Butterflies.
Status: On track

T-010 Publish on status and trends of the world's Butterflies and Moths (e.g. World Swallowtail assessment, Sampled Red List Index, key Moth group).
Status: Not initiated

T-011 Engage with Key Biodiversity Area processes, feeding Butterfly and Moth data into the process.
Status: Not initiated

T-016 Complete assessments of at least 100 key Moth species, e.g. Emperor Moths.
Status: On track

T-017 Identify additional priority groups for assessment and conservation planning, e.g. Green Status, Red List, Climate Change assessment.
Status: On track

T-019 Complete the Global Swallowtail Assessment.
Status: On track

T-020 Hold a one-day online IUCN Red List workshop for the Migratory Monarch Butterfly (*Danaus plexippus* ssp. *plexippus*).
Status: Achieved

T-022 Assess five species of *Polyommatus* from the Caucasus as the first step towards a regional Red List and conservation planning in the region.
Status: Not initiated

T-024 Support the petition process of the Migratory Monarch assessment.
Status: Achieved

PLAN

T-004 Conduct a conservation planning workshop for Swallowtails and produce a conservation plan for the group.
Status: Not initiated

T-012 Engage in at least two cross-taxon initiatives to increase group capacity in conservation planning.
Status: Not initiated

ACT

T-015 Develop guidance on the use of Lepidoptera farming for sustainable community development.
Status: Not initiated

Participants of the symposium on "Butterfly monitoring, trends and indicators: towards a global network" at Biology of Butterflies Conference in Prague, July 2023, including several IUCN SSC Butterfly and Moth Specialist Group members
Photo: Monni Böhm

NETWORK

T-002 Increase the global reach of the group to include a diversity of members covering at least 40 countries.
Status: On track

T-005 Develop regional subgroups to focus on regional Assess-Plan-Act.
Status: On track

T-006 Carry out capacity building for red listing within the group via training workshops/online Red List training courses.
Status: On track

T-018 Develop partnerships with relevant organisations (e.g. Butterfly Conservation, eButterfly) to improve access to conservation-relevant data, and coverage and capacity of monitoring of Lepidoptera.
Status: On track

T-023 Work closely with IUCN SSC Invertebrate Conservation Committee and other invertebrate SSC groups on activities relevant to Butterfly and Moth conservation.
Status: On track

COMMUNICATE

T-013 Improve communications with the membership and a wider audience through newsletters, blogs, Facebook and Twitter presence, podcasts, etc., with two major outputs per year around which engagement can be focused — e.g. around World Swallowtail Day, publication of scientific outputs, etc.
Status: On track

T-014 Develop a group website to showcase work and as a hub for distributing information and sharing resources.
Status: Not initiated

T-021 Deliver annual outreach activities with partner organisations.
Status: Not initiated

Activities and results 2023

ASSESS

Red List

T-007 Support the development of national or regional Red List assessments for Butterflies and Moths and improve linkages between national Red Lists and the global IUCN Red List (facilitate upload of assessments from national Red Lists to the global IUCN Red List). (KSR 6)

Number of new national Red List assessments published: 18

Result description: In the Red List update in 2023, 18 assessments of Korean Moth species were published on the IUCN Red List. This adds to the ten Lepidoptera species published on the IUCN Red List in 2022. The IUCN SSC Butterfly and Moth Specialist Group supports this process through assessment reviews.

Number of national Red List processes supported: 2

Result description: We continued to support national Red List assessment processes through review. In 2023, our focus was mainly on supporting the European red listing of Moths and Butterflies. Several Specialist Group members participated in the process of the European Red List for Butterflies. Monni Böhm attended two assessment workshops remotely for the European Red List of Moths. Assessments for both Red Lists will be reviewed for publication later in 2024. Specialist Group member Karen Aghababyan was awarded an SSC Internal Grant to support his efforts to Red List — and ultimately create conservation plans for — a group of five South Caucasus endemic *Polyommatus* Butterfly species. This brings the number of national or regional assessment processes supported in this quadrennium to five in total, i.e. South Africa, Kenya, Korea, Europe and the Caucasus. In addition, Specialist Group members Anna Walker and Kevin Burls are working on Red List assessments for Western North American Species, and on

producing Red List assessments for several Butterfly and Moth species that will subsequently be suggested species for addition to the Species of Greatest Conservation Need list in the New Mexico State Wildlife Action Plan (in collaboration with University of New Mexico students and relevant conservation organisations). Both of these processes will likely conclude in 2024.

T-009 Complete a first global assessment of 1,500 species for a sampled Red List Index of Butterflies. (KSR 6)

Number of new national Red List assessments completed: 1

Result description: This target has not yet been systematically pursued by the Group, due to time constraints and a focus on first completing the Global Swallowtail Assessment (see Target 019). However, by 2023, 346 species out of the sampled Red List Index (SRLI) list of 1,500 species had at least a first assessment published under the current *IUCN Red List Categories and Criteria*. This means that since the initial work on the project in 2008-2011, another 32 species had new global Red List assessments completed via other assessment processes, one of these in 2023; in addition, another nine species were updated from 1996 status assessments under previous assessment standards, all in 2018.

Number of global Red List reassessments completed: 3

Result description: This target has not yet been systematically pursued by the Group, due to time constraints and a focus on first completing the Global Swallowtail Assessment (see Target 019). However, 28 species out of the ca. 300 species that had already been assessed during the original project period (2008-2011) of the Sampled Red List Index project have since been reassessed via other assessment processes —three in this current quadrennium.

T-016 Complete assessments of at least 100 key Moth species (e.g. Emperor Moths). (KSR 6)

Number of new global Red List assessments completed: 19

Result description: Assessments for 19 species of Moths were published on the IUCN Red List in the 2023 update, all from Korea via South Korea National Red List project, reviewed by IUCN SSC Butterfly and Moth SG.

T-019 Complete the Global Swallowtail Assessment. (KSR 6)

Number of new global Red List assessments completed: 9

Result description: In 2023, nine Swallowtail assessments were published on the IUCN Red List. In collaboration with our partners at the Zoological Society of London (ZSL), we have managed to increase processing capacity for the remainder of the assessments. At least another 200 assessments have already been drafted and are now going through final sign-off. To help with capacity constraints, we submitted an IUCN SSC Internal Grant proposal in February 2023, which unfortunately was unsuccessful.

T-020 Hold a one-day online IUCN Red List workshop for the Migratory Monarch Butterfly (*D. plexippus ssp. plexippus*). (KSR 5)

One-day online workshop held: 1

Result description: We compiled a report on the one-day online Red List Migratory Monarch workshop held on December 15, 2022, and fed relevant outcomes from the meeting into the petition response for the assessment (see target 024).

T-024 Support the petition process of the Migratory Monarch assessment. (KSR 6)

Petition process concluded: Achieved

Result description: A petition against the Endangered status of the Migratory Monarch was submitted in January 2023. We drafted the response to the petition of the Migratory Monarch Red List assessment in collaboration with the original assessment team, between January and April 2023. We engaged with the petition process as and when needed. The IUCN Standards and Petitions Committee's (IUCN SPC) ruling on the petition was published on the IUCN Red List website in September 2023 and an updated Migratory Monarch assessment has since been published on the IUCN Red List website by the IUCN SPC. The Specialist Group has continued to engage in communications about the petition process and updated assessment as and when required — including communicating the outcome to the AZA SAFE Monarch program. For example, after an initial interview in March 2023 with Monika Maeckle (Texas Butterfly Ranch and San Antonio's Monarch Butterfly and Pollinator Festival), we followed up after the petition ruling. We also supported the original assessment team with communication about the petition process and ruling, and what it ultimately means for the Migratory Monarch.

Research activities

T-003 Create a global inventory of Butterfly monitoring schemes and available time series data (with collaborators) to help us assess data gaps and capacity needs, and build a Living Planet Index for Butterflies. (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: We attended the Biology of Butterflies conference in Prague in July 2023, where we presented a symposium on Butterfly Monitoring — in collaboration with Butterfly Conservation, Butterfly Conservation Europe, De Vlinderstichting, UK Centre for Ecology and Hydrology, and ZSL's Institute of Zoology — entitled 'Butterfly monitoring, trends and indicators: towards a global network'. Six talks were by Specialist Group members — some of which acknowledged SSC affiliation—, several more by close collaborators, as well as a poster introducing our Global Butterfly Index project, presented by Specialist

Graphium nomius (Papilionidae)
Photo: Shawan Chowdhury

Group member Holly Mynott. Specifically, Butterfly and Moth SG member Federico Riva presented the current data available for a Global Butterfly Index. The symposium was chaired by SG Co-Chair Monni Böhm and SG member Holly Mynott. We provided social media outreach throughout and after the conference about the symposium (see target T-013 for details) and featured a write-up in our annual newsletter, which will be published in early 2024.

T-017 Identify additional priority groups for assessment and conservation planning, e.g. Green Status, Red List, Climate Change assessment. (KSR 6)

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

Result description: The following assessment priorities were identified during 2023, especially with the view of upcoming SSC Internal and EDGE grants for the period 2023-24: (1) South Caucasus endemic Butterfly species *Polyommatus*: we prepared, submitted and were successful with a proposal supporting assessments of five of these species (SSC Internal Grant; see also Target 022); (2) *Dianesia carteri*: the only member of its family, the Metalmark Butterflies (Riodinidae), found in the Caribbean. Additionally, this species is the only member of its genus, and the genus is the only member of its tribe (Dianesiini). The species is found only in Cuba and the Bahamas. Specialist Group member Keith Willmott prepared a proposal to support the assessment of this distinctive species (Internal EDGE grant) which received funding for 2024; (3) The highly range-restricted Neotropical bamboo-feeding Euptychiina Butterflies: at least 46 species with highly restricted distributions. Specialist Group member Keith Willmott prepared a proposal to support data collection and capacity building toward an assessment of these highly restricted species (Internal EDGE grant) which was unsuccessful.

SSC Grant awarded

NETWORK

Membership

T-002 Increase the global reach of the Group to include a diversity of members covering at least 40 countries. (KSR 2)

Number of SSC members recruited: 9

Result description: In 2023, the Group welcomed nine new members from three countries. The group now has 52 members representing 24 countries.

SSC Grant awarded

Capacity building

T-018 Develop partnerships with relevant organisations (e.g. Butterfly Conservation, eButterfly) to improve access to conservation-relevant data, and coverage and capacity of monitoring for Lepidoptera. (KSR 3)

Increased number of collaborations: Ongoing.

Result description: We continued our collaborative work with our partner organisations, including Butterfly Conservation, Butterfly Conservation Europe, Vlinderstichting (Netherlands), the Living Planet Index team at ZSL, and the Centre for Ecology and Hydrology (UK). With these partners, we organised and delivered a symposium on Butterfly monitoring at the Biology of Butterflies conference in Prague. This included 15 oral presentations, of which six were by IUCN SSC Butterfly and Moth Specialist Group members. Presenters also included colleagues from the NSF-funded Research Coordination Network on Insect Status. Monni Böhm took part in the first annual meeting (AMNH New York, February 2023) of the Status of Insects Research Coordination Network, representing both the IUCN SSC Butterfly and Moth Specialist Group and IUCN SSC Terrestrial and Freshwater Invertebrate Red List Authority (TIRLA). As part of the RCN Status

Malachite Butterfly (*Siproeta stelenes*), Costa Rica
Photo: Monika Böhm

of Insects, we have further engaged with various researchers and organisations/ networks in North America, especially to discuss how Butterfly monitoring data can be best used for North American species assessments — e.g. with Albuquerque BioPark, Xerces Society, RCN Status of Insects, the University of Nevada Reno, etc. We also reviewed and commented on the Species Status Assessment (SSA) for three taxa of Amazonian Swallowtails for the US Fish and Wildlife Service (US FWS).

T-023 Work closely with IUCN SSC Invertebrate Conservation Committee and other invertebrate SSC groups on activities relevant to Butterfly and Moth conservation. (KSR 3)

Number of outputs created with Invertebrate Conservation Committee: 0

Result description: We continued working with Axel Hochkirch, Chair of the Invertebrate Conservation Committee (ICC) and Vicky Wilkins, Co-Chair of the Mid-Atlantic Island SG and member of ICC on a book chapter on conservation planning for an Insect Conservation Handbook. The book will be published in 2024. We also continued to work with the ICC on Guidelines for Invertebrate Management for Conservation which will also be completed in 2024. Towards the end of 2023, we started to engage in the IUCN SSC Terrestrial and Freshwater Invertebrate Red List Authority (TIRLA) project that aims to increase Red List output via the engagement of student assessors. We provided a list of potential Butterfly and Moth species to the project and are hoping to engage with student assessors in 2024. Co-Chairs Mike Jordan and Monni Böhm attended the 2023 CPSG Annual Meeting on October 5-8, 2023, in San Diego, US.

COMMUNICATE

Communication

T-013 Improve communications with the membership and a wider audience through newsletters, blogs, Facebook and Twitter presence, podcasts, etc., with two major outputs per year around which engagement

can be focused (e.g. around World Swallowtail Day, publication of scientific outputs, etc.). (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: In 2023, we produced regular digital communications on X (formerly Twitter) on the Butterfly Monitoring symposium at the Biology of Butterflies Conference in Prague (July 2023). We have unrolled the threads here for easier access: Threads #1, Threads #2, Threads #3. In addition, we also engaged with social media content for Moth Week (July 2023).

Scientific meetings

T-013 Improve communications with the membership and a wider audience through newsletters, blogs, Facebook and Twitter presence, podcasts, etc., with two major outputs per year around which engagement can be focused (e.g. around World Swallowtail Day, publication of scientific outputs, etc.). (KSR 12)

Number of scientific events in which the members participated: 2

Result description: Several IUCN SSC Butterfly and Moth Specialist Group members participated in the Biology of Butterflies conference in Prague, Czech Republic, in July 10-13, 2023. Seven members presented their work as part of the symposium on 'Butterfly monitoring, trends and indicators' (six talks, one poster), which was co-organised by the Specialist Group with partners on the Global Butterfly Index project. An additional number of members presented in other conference sessions. Here is a full list of Specialist Group member contributions from the conference: (1) The session on 'Systematics and biogeography of Lepidoptera: pattern and process' featured Leonardo Dapporto from Italy, presenting 'The genetic legacy of the Quaternary ice ages for West Palearctic butterflies'; (2) In the session on 'Butterfly monitoring, trends and indicators: towards a global network', Krushnamegh Kunte from India discussed 'Envisioning the Indian Butterfly Monitoring Scheme: Harnessing the power of a billion citizen scientists for tropical biodiversity monitoring and conservation'; (3) Chooi-Khim Phon from Malaysia shared experiences and challenges in 'Butterfly monitoring in Peninsular Malaysia: Experiences, challenges and the way forward'; (4) From the UK, Oskar Brattström presented 'The Nigeria Butterfly Network: Towards the establishment of a nationwide Nigerian butterfly monitoring programme' on behalf of SG member Joseph Izang; (5) Chris van Swaay from the Netherlands discussed 'From national to Continental to Global Butterfly Monitoring', while (6) Shao-Ji Hu from China explored integrating DNA barcodes into the Butterfly Monitoring Network; (7) Shawan Chowdhury from Germany explored how social media records hold valuable information for conservation planning, and (8) Federico Riva from the Netherlands analysed spatial, temporal, and taxonomic trends from Butterfly monitoring programs; (9) Additionally, Holly Mynott from the UK presented her poster 'Building a Global Butterfly Index'. (10) In the session on 'Conservation of butterflies and their habitats', Irma Wynhoff from the Netherlands discussed restoring the habitats of the myrmecophilous Butterfly *Phengaris teleius* (Maculinea) on former agricultural fields by sod translocation. Several Specialist Group members also attended and presented at the Butterfly Conservation Symposium 2023 held at Wyboston, Bedfordshire, UK in April 13-16, 2023. For example, Global Butterfly Index coordinator Holly Mynott presented her poster on Building a Global Butterfly Index. There were also presentations by Specialist Group members on the conservation of the Dusky Large Blue (*Maculinea nausithous*) (Irma Wynhoff), standardised Moth monitoring in Europe (Chris van Swaay), Lepidopteran response at a large, high-diversity restoration intended to restore connectivity and expand habitat (John Shuey), and underestimated threats for Butterflies (Simona Bonelli).

Acknowledgements

We would like to thank our partners and collaborators on the Global Butterfly Index project: Butterfly Conservation, Butterfly Conservation Europe, de Vlinderstichting, UK Centre for Ecology and Hydrology, and the Zoological Society of London (ZSL). We are grateful to the organisers of the 2023 Biology of Butterflies conference for accommodating our symposium idea on Butterfly monitoring and the leads of the RCN Status of Insects for their continued collaboration. Thank you to ZSL for providing project support for the Global Swallowtail Assessment. We are grateful to the IUCN SSC Chairs Office and On the Edge Conservation for the funding granted in 2023. The Co-Chairs would like to thank their respective organisations (Chester Zoo and Indianapolis Zoo) for supporting their time commitments to IUCN.

Summary of achievements

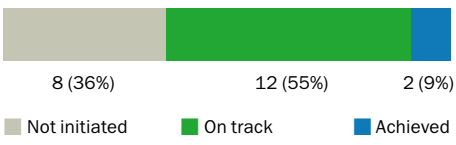
Total number of targets 2021–2025: 22

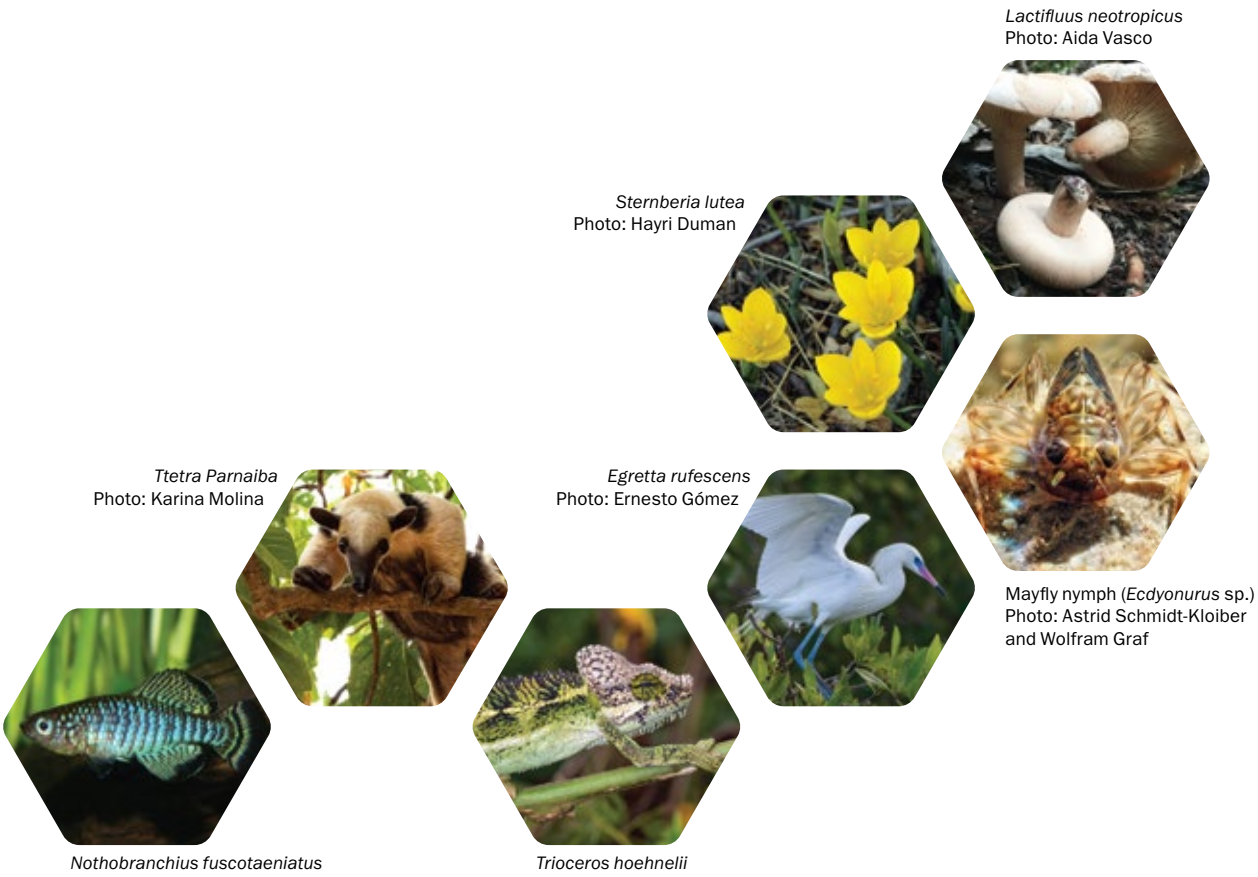
Geographic regions: 18 Global, 3 America, 3 Asia, 1 Europe

Actions during 2023:

Assess: 10 (KSR 5, 6)
Network: 3 (KSR 2, 3)
Communicate: 2 (KSR 12, 13)

Overall achievement 2021–2025:





Lactifluus neotropicus
Photo: Aida Vasco

Sternberia lutea
Photo: Hayri Duman

Ttetra Parnaiba
Photo: Karina Molina

Egretta rufescens
Photo: Ernesto Gómez

Mayfly nymph (*Ecdyonurus* sp.)
Photo: Astrid Schmidt-Kloiber and Wolfram Graf

Nothobranchius fuscotaeniatus
Photo: Csenge Nagy

Trioceros hoehnelii
Photo: Christopher V. Anderson