



# Species

ISSUE 65

## 2024-2025 Report of the IUCN Species Survival Commission and Secretariat



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## 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.

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### 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.

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### 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 stand-alone reports.

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## 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.

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### Title of the group

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### Photograph(s) of the Chair/Co-Chairs

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### Group information

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

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### Logo of the group

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### Mission statement

Includes the mission of the group.

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### 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.

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### 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).

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### Activities and results

Includes the targets for which activities were conducted and results that were generated during 2024 (full year) and 2025 (first quarter), 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).

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### Acknowledgements

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

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### 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

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### Example for the recommended citation:

Owen, M, and Heineman, K. (2025). 2024-2025 Report of the CSS Biodiversity Biobanking: San Diego Wildlife Alliance. In: IUCN SSC and Secretariat. *Species: Annual Report of the IUCN Species Survival Commission and Secretariat 2024-2025*. Gland, Switzerland: IUCN. 6 pp.

## 2024-2025 Report

# CSS Biodiversity Biobanking: San Diego Wildlife Alliance



**DIRECTOR**  
Megan Owen  
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**SPECIES SURVIVAL  
OFFICER**  
Katie Heineman  
San Diego, US

### Mission statement

To safeguard present and future biodiversity by promoting expert and equitable acquisition, storage, and sharing of genetic resources for conservation and by increasing biobanking capacity in biodiversity hotspots worldwide.

### Projected impact 2021–2025

Not stated yet.

### Targets 2021–2025

#### ASSESS

**T-003** In collaboration with Animal Biobanking for Conservation Specialist Group, coordinate gap analysis of animal taxa currently represented in viable cell culture.  
Status: On track

**T-004** In collaboration with US partners, conduct gap analysis of the biobanking status of plants and animal species on protected by the Endangered Species Act.  
Status: On track

#### PLAN

**T-005** Contribute to IUCN policies and guidelines relevant to the use and distribution of biomaterials of threatened species.  
Status: On track

**T-006** Evaluate frameworks for communicating the cultural significance of biobanking specimens to local and indigenous communities.  
Status: On track

#### ACT

**T-009** Coordinate actions to secure threatened species in high quality biobanked collections that preserve maximal genetic diversity.  
Status: On track

#### NETWORK

**T-007** Organise and support training workshops in biobanking methods for practitioners in biodiversity hotspots.  
Status: On track

**T-008** Collaborate on funding proposals to build biobanking capacity with partners in biodiversity hotspots.  
Status: On track

#### COMMUNICATE

**T-010** Promote the CSS Biodiversity Banking Through Presentation and Sponsorship at Relevant Scientific Conferences.  
Status: On track

### Activities and results 2024-2025

#### ASSESS

##### Research activities

**T-004** In collaboration with US partners, conduct gap analysis of the biobanking status of plants and animal species on protected by the Endangered Species Act. (KSR 5)

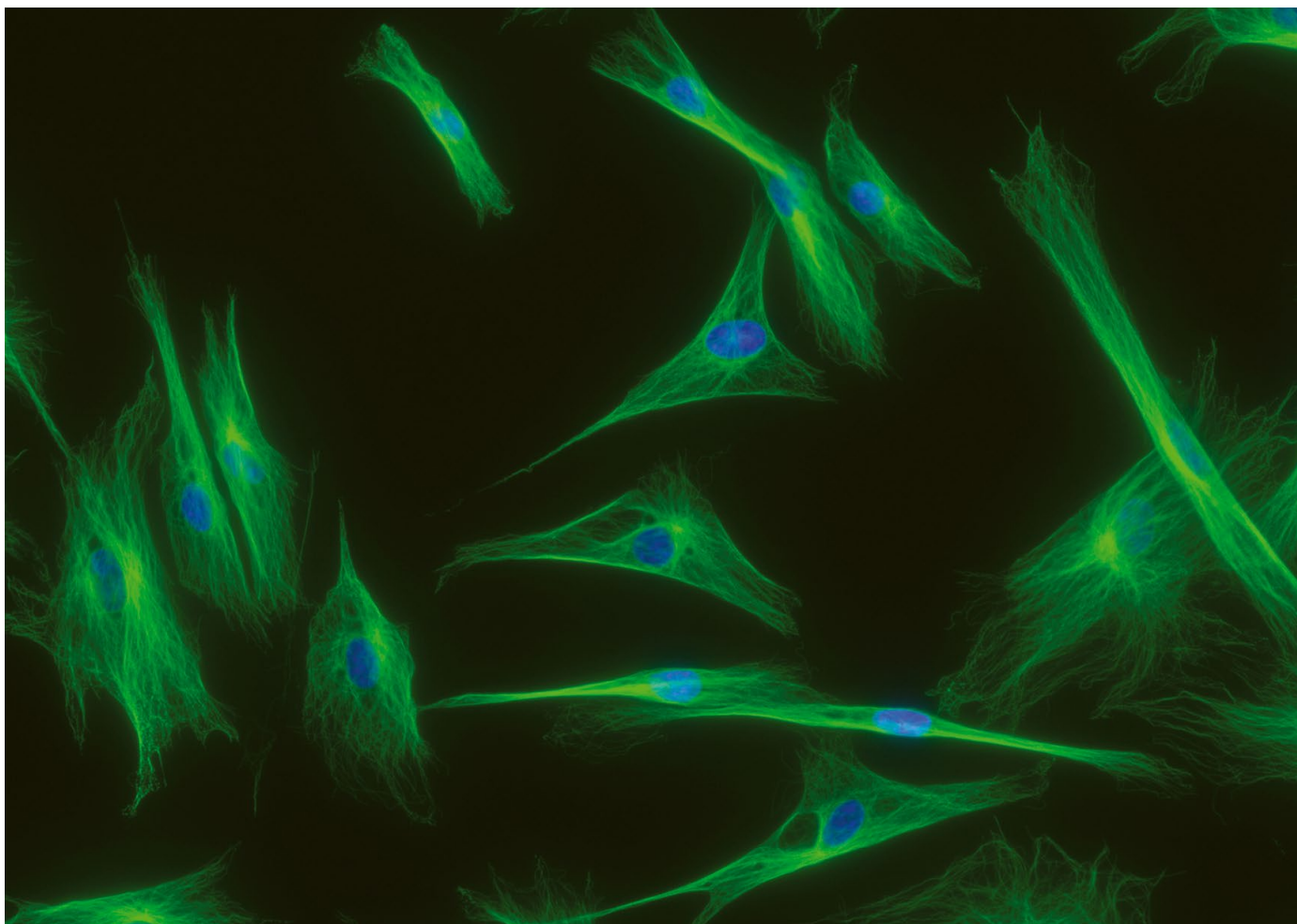
Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: In partnership with the US Department of Agriculture's National Laboratory for Genetic Resources Preservation and Center for Plant Conservation, the CSS contributed to the first in a series of papers about the longevity of endangered plant species in conservation biobanks. This paper is in press in *Frontiers in Plant Science* and is entitled 'Assessing the RNA integrity in dry seeds collected from diverse endangered species native to the USA'.

#### PLAN

##### Planning

**T-005** Contribute to IUCN policies and guidelines relevant to the use and distribution of biomaterials of threatened species. (KSR 8)



Whooping Crane (*Grus americana*) fibroblast cells colored by immunostaining at San Diego Zoo Wildlife Alliance Frozen Zoo  
 Photo: Elena Ruggeri, San Diego Zoo Wildlife Alliance

Number of technical documents to support the development of conservation plans/ strategies: 2

Result description: In 2024, we collaborated with the Co-Chair of the Animal Biobanking for Conservation Specialist Group on peer review of the IUCN policy on synthetic biology WCC-2020-Res-123. We also supported the Conservation Genetics Specialist Group in the development of their Biobanking Guidelines.

**T-006 Evaluate frameworks for communicating the cultural significance of biobanking specimens to local and indigenous communities.** (KSR 8)

Number of technical documents to support the development of conservation plans/ strategies: 1

Result description: In March of 2024, the CSS Biodiversity Banking held a workshop on benefits sharing in biodiversity banking facilitated by the IUCN SSC Conservation Planning Specialist Group. A report from this workshop is a document that can guide strategy for the CSS as we endeavour to incorporate indigenous knowledge into our biobanking practice.

**ACT**

**Conservation actions**

**T-009 Coordinate actions to secure threatened species in high quality biobanked collections that preserve maximal genetic diversity.** (KSR 10)

Number of threatened species benefiting from *ex situ* conservation action: 70

Result description: The seed bank and frozen zoo teams at the San Diego Zoo Wildlife Alliance secured more than 50 plant and species listed as Vulnerable, Endangered, or Critically Endangered in living conservation collections as orthodox seeds or living cell lines in 2024. This includes 308 individual animals for the Frozen Zoo team – inclusive of all collections – and 41 seed collections from the native plants of San Diego County by the SDZWA Native Plant Genebank. As for the first quarter of 2025, we documented the banking of 20 species from including 80 individual mammals, birds, reptiles, and amphibians by the SDZWA Frozen Zoo. Through partnerships with the US Fish and Wildlife Service and other partnerships, we were able to add two species never previously biobanked, including the Bolson Tortoise (*Gopherus flavomarginatus*) and Aruba Island Rattlesnake (*Crotalus durissus unicolor*).

**NETWORK**

**Capacity building**

**T-007 Organise and support training workshops in biobanking methods for practitioners in biodiversity hotspots.** (KSR 2)

Number of people trained in other fields: 13

Result description: CSS Biodiversity Banking supported members Animal Biobanking for Conservation SG, including Dr Joanna Sumner, Dr Oliver Ryder, and Dr Boripat Siriaronrat, in organising a Biobanking Workshop at the Conservation Planning SG meeting in Sydney, Australia. The goals of this workshop were to: (1) emphasise biobanking as an effective conservation tool and (2) discuss how to foster collaboration between zoos, natural history museums, and indigenous communities in promoting ethical application of biobanking in Oceania. Outcomes from this workshop include plans to conduct a gap analysis of threatened species held in biobanked collections in Oceania and samples held for native Oceania species abroad. This session was attended by 13 members of the SSC.

**Synergy**

**T-008 Collaborate on funding proposals to build biobanking capacity with partners in biodiversity hotspots.** (KSR 1)



Acorns of the Endangered Coastal Sage Scrub Oak (*Quercus dumosa*) that will be researched for cryobiobanking  
Photo: Stacy Anderson, San Diego Zoo Wildlife Alliance



Germination trials of orthodox seeds at San Diego Zoo Native Plant Genebank, similar to those conducted for recent Seed Longevity research study  
 Photo: Ken Bohn, San Diego Zoo Wildlife Alliance

Number of 'funding' partners established and maintained: 1

Result description: The CSS Biodiversity Banking co-developed proposals for biobanking grants sponsored by the Association for Zoos and Aquariums (AZA) including work related to cell culture protocol development in support of Critically Endangered Hawaiian bird.

**COMMUNICATE**

**Scientific meetings**

**T-010 Promote the CSS Biodiversity Banking Through Presentation and Sponsorship at Relevant Scientific Conferences.** (KSR 12)

Number of presentations delivered in scientific events: 4

Result description: Our team delivered presentations about the importance of biobanking in wildlife conservation at the UN Biodiversity Conference in Cali, Colombia, the WECARE conference in Bogor, Indonesia, and SSC Leaders Meeting in Abu Dhabi. CSS Biodiversity banking presented on our targets and goals for expanding biobanking capacity at the data infrastructure working group of the ZooMu Research Coordination Network held in Raleigh, North Carolina in March 2025.

Number of scientific events coordinated: 1

Result description: The CSS Biodiversity Banking co-hosted a parallel session entitled 'Animals, plants, and more: Biobanking is an essential conservation tool' at the SSC Leaders Meeting in Abu Dhabi on October 28, 2024. This session featured presentations from representatives from the Animal Biobanking for Conservation SG, Amphibian SG and Seed Conservation SG, all of whom shared their experiences integrating biobanking into conservation action within the SSC network. In total, 40 SSC leaders attended the session and took a survey designed to characterise their interests and needs in terms of biobanking capacity. Through this survey we learned that 50% of responding SSC Specialist Group have experience collecting field samples for biobanking and 70% identified access to long term biological repositories as a limitation to their biobanking work. These result points to the fruitful potential of connecting field practitioners with biobanking facilities within the SSC network through a more integrated global network of biobanks.

**Summary of achievements**

**Total number of targets 2021–2025: 8**

**Geographic regions: 5 Global, 3 America**

**Actions during 2024-2025:**

Assess: 1 (KSR 5)

Plan: 2 (KSR 8)

Act: 1 (KSR 10)

Network: 2 (KSR 1, 2)

Communicate: 2 (KSR 12)

**Overall achievement 2021–2025:**



8 (100%)

■ No longer a priority   
 ■ Not initiated   
 ■ On track   
 ■ Achieved

Suweon Treefrog  
(*Dryophytes suweonensis*)  
Photo: Amael Borzee



Marsh Cinquefoil  
(*Comarum palustre*)  
Photo: Magnus Goransson



*Phallus aureolatus*  
Photo: Juliano Baltazar



Eurasian Griffon (*Gyps fulvus*)  
Photo: Andre Botha



Black Rhino (*Diceros bicornis*)  
Photo: Save The Rhino Trust Namibia



Azores Nursery Spider  
(*Pisaura acoreesins*)  
Photo: Paulo A.V. Borges



Black and White Snapper  
(*Macolor niger*)  
Photo: David B. Snyder