



**The IUCN Species
Survival Commission**

QUARTERLY REPORT
MARCH 2021

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Cover Photo:
Black-spotted Rock Frog (*Staurois guttatus*) LC.
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Executive Summary

We know how to do conservation. During the last four years we have seen plenty of evidence of it. From assessment to action, the SSC network keeps delivering. Over ten thousand volunteers in 163 groups in 174 countries show us the meaning of commitment to the cause of conservation. Over ten thousand volunteers that carve out portions of their valuable time to devote to SSC. They do this while building impressive careers, maintaining active field and lab research programs, teaching, leading conservation organizations, influencing public policy, raising families and creating the next generation of conservation-minded citizens. There is no amount of recognition of this effort that is enough. Many challenges still lay ahead, and SSC will continue delivering positive conservation outcomes.

As we examine priorities, seek feedback, and listen to the many voices within the SSC network, two major themes keep reemerging: *diversity* and *conservation action*. In the [December 2020 SSC Quarterly Report](#), we saw that the typical SSC member is a male in his sixties from the North. This demographic group has contributed widely to SSC, and we are counting on their continued contribution to the Commission. Especially in helping us diversify and strengthen a growing membership. Attracting members from biodiverse-rich regions of the world, women, young professionals, and experts outside academia, can only improve our vision of conservation. From traditional knowledge to remote sensing, evidence-based approaches must consider all sources of data available. Including a multiplicity of opinions and world views is paramount.

The ultimate goal of SSC is to save species from extinction. The [Species Conservation Cycle](#) is our framework to do this. The knowledge that we summarize in *assessments*, then operationalize in *plans* and implement in *action*, seeks to reverse the decline in biodiversity. An increased focus on conservation action has been a guiding force for the SSC Chair's team since 2016, and will continue in the years ahead.

This *SSC Quarterly Report* illustrates the trends in our work. Two conservation interventions, on guanacos and Colombian hippos, triggered responses from governmental authorities within days or weeks of being initiated. This is very encouraging and we are deeply grateful to the Argentine and Colombian governments for their feedback and positive response.

A strategy examined at the SSC Steering Committee, which will contribute to diversify membership and enhance conservation action, is the establishment of National Species Specialist Groups (NSSGs). Currently being piloted in countries in Africa, Asia and South America, NSSGs are expected to increase our involvement in informing national evidence-based conservation priorities and attracting emerging conservation talent.

The Lichen Specialist Group presents the results of a recent assessment workshop. They illustrate the virtues of remote work. Why did we always need to spend several days discussing in person in order to deliver high quality assessments? Our future, even post Covid-19, will surely rely more on virtual meetings. Their value has been clearly demonstrated.

During the last 40 years, oceanic sharks and rays have declined more than any other group of organisms, with the possible exception of reef forming corals. Our oceans are witnesses of the biggest losses of biodiversity, as documented by the *IUCN Red List of Threatened Species*. The outgoing co-chairs of the Shark Specialist Group summarize their experience during the last decade or so, and highlight their contributions to the Species Conservation Cycle. A tremendous number of achievements that we are deeply grateful for.

Key Biodiversity Areas, known by their acronym, KBAs, continue to expand as a tool to convert the data summarized by the *IUCN Red List of Threatened Species* and the *Red List of Ecosystems*, into spatial datasets for definition of conservation priorities. Simeon Bezeng, together with several colleagues, take us through the KBA process and opportunities for engagement by the SSC network.

On 18 March 2021 we witnessed the launch of the [Center for Species Survival Brazil](#) (CSS Brazil). Product of a partnership between SSC, the Conservation Planning Specialist Group and Parque das Aves, the center is a national hub that brings together people and initiatives in the identification of species at risk of extinction and in the development of strategic plans, boosting cooperation and actions to save species, working specially for the native fauna of Brazil.

Our *Quarterly Report* ends on a sad note. We remember Phillip Bishop, Co-chair of the Amphibian Specialist Group between 2009 and 2020. He was well known and much loved by many in the SSC network. Phil will be sorely missed by all of us.

Resumen Ejecutivo

Sabemos cómo hacer conservación. Durante los últimos cuatro años hemos sido testigos de ello. Desde la evaluación hasta la acción, la red de la CSE sigue cumpliendo. Más de diez mil voluntarios en 174 países en 163 grupos nos muestran el significado del compromiso con la conservación. Son más de diez mil voluntarios dedicando parte de su valioso tiempo a la CSE. Hacen esto mientras construyen carreras impresionantes, llevan adelante programas de investigación en laboratorio y de campo, enseñan, lideran organizaciones de conservación, influyen en las políticas públicas, forman familias y forjan la próxima generación de ciudadanos con mentalidad conservacionista. No hay suficiente reconocimiento a todo este esfuerzo. Aún quedan muchos desafíos por delante, y la CSE continuará brindando resultados de conservación positivos.

A medida que evaluamos prioridades, consultamos y escuchamos las muchas voces dentro de la CSE, dos temas principales siguen resurgiendo: *diversidad* y *acción de conservación*. En el *Informe Trimestral de la CSE, diciembre de 2020*, los datos nos mostraron que el típico miembro de la CSE es hombre, en sus sesenta años, y del norte. Reconocemos que este grupo demográfico ha contribuido ampliamente a la CSE y continuamos contando con su

contribución, especialmente para ayudarnos a diversificar y fortalecer una membresía creciente. Atraer nuevos miembros de regiones del mundo ricas en biodiversidad, mujeres, jóvenes profesionales y expertos fuera de la academia, mejorará nuestra visión de la conservación. Desde el conocimiento tradicional hasta la detección remota, los enfoques basados en evidencia deben considerar todas las fuentes de datos disponibles. Incluir una variedad de opiniones y visiones del mundo es primordial.

El fin último de la CSE es salvar a las especies de la extinción, y el [Ciclo de Conservación de Especies](#) es nuestro marco de referencia para hacer esto. El conocimiento que resumimos en *evaluaciones*, luego operacionalizamos en *planes* e implementamos en *acción*, busca revertir el declive de la biodiversidad. Un mayor enfoque en la acción de conservación ha sido un punto clave para el equipo del presidente de la CSE desde 2016, y continuará en los años venideros.

Este *Informe Trimestral* ilustra la evolución en nuestro trabajo. Dos intervenciones de conservación, en guanacos e hipopótamos colombianos, resultaron en respuestas positivas por parte de las autoridades gubernamentales, a los pocos días o semanas de su envío. Esto es muy alentador y estamos profundamente agradecidos con los gobiernos de Argentina y Colombia por sus positivas respuestas.

Una estrategia examinada en el Comité Directivo de la CSE, que contribuirá a diversificar nuestros miembros, e impulsar acciones de conservación, es el establecimiento de Grupos Nacionales de Especialistas en Especies (NSSG por sus siglas en inglés). Este modelo se está probando actualmente en países de África, Asia y América del Sur, y se espera que los NSSG aumenten nuestra participación en informar las prioridades de conservación nacionales basadas en evidencia y atraer talentos de conservación emergentes.

El Grupo de Especialistas en Líquenes presenta los resultados de un taller realizado recientemente con el fin de hacer evaluaciones, ilustrando las virtudes del trabajo a distancia. ¿Por qué pensamos que debemos pasar varios días discutiendo en persona para poder ofrecer evaluaciones de alta calidad? Nuestro futuro, incluso después de Covid-19, seguramente dependerá más de las reuniones virtuales. Su valor ha quedado claramente demostrado.

Durante los últimos 40 años, los tiburones oceánicos y las rayas han disminuido más que cualquier otro grupo de organismos, con la posible excepción de los corales formadores de arrecifes. Nuestros océanos son testigos de las mayores pérdidas de biodiversidad, de acuerdo a los datos que documenta la *Lista Roja de Especies Amenazadas de la UICN*. Los copresidentes salientes del Grupo de Especialistas en Tiburones resumen su experiencia durante la última década y destacan sus contribuciones al Ciclo de Conservación de Especies. Una gran cantidad de logros por los que estamos profundamente agradecidos.

Las Áreas Clave de Biodiversidad, conocidas por sus siglas en inglés KBAs, continúan expandiéndose como una herramienta para convertir los datos resumidos por la *Lista Roja de Especies Amenazadas de la UICN* y la *Lista Roja de Ecosistemas*, en conjuntos de datos espaciales para la definición de prioridades de conservación. Simeon Bezeng, junto a varios colegas, nos explican el proceso de KBAs y las oportunidades de participación de la CSE.

El 18 de marzo de 2021 fuimos testigos del lanzamiento del [Centro para la Supervivencia de las Especies de Brasil](#) (CSE Brasil). Producto de una alianza entre la CSE, el Grupo de Especialistas en Planificación de la Conservación y

Parque das Aves, el centro es un eje nacional que reúne a personas e iniciativas en la identificación de especies en riesgo de extinción y en el desarrollo de planes estratégicos, impulsando la cooperación y las acciones. para salvar especies, trabajando especialmente para la fauna endémica de Brasil.

Nuestro *Informe Trimestral* termina con una nota triste. Recordamos a Phillip Bishop, co-presidente del Grupo de Especialistas en Anfibios entre los años 2009 y 2020. Conocido y querido por muchos en la red CSE, todos echaremos de menos a Phil.

Résumé

Nous savons comment faire de la conservation. Au cours des quatre dernières années, nous en avons vu de nombreuses preuves. De l'évaluation à l'action, le réseau CSE continue de livrer. Plus de dix mille volontaires répartis dans 163 groupes et 174 pays nous montrent le sens de l'engagement pour la cause de la conservation. Plus de dix mille volontaires qui consacrent une partie de leur temps précieux à la CSE. Ils y parviennent tout en menant des carrières impressionnantes, en maintenant des programmes de recherche actifs sur le terrain et en laboratoire, en enseignant, en dirigeant des organisations de conservation, en influençant les politiques publiques, en élevant des familles et en créant la prochaine génération de citoyens soucieux de la conservation. Aucune reconnaissance de cet effort n'est suffisante. De nombreux défis restent à relever, et la CSE continuera à produire des résultats positifs en matière de conservation.

Alors que nous examinons les priorités, cherchons à obtenir un retour d'information et écoutons les nombreuses voix qui s'expriment au sein du réseau de la CSE, deux thèmes majeurs reviennent sans cesse: la diversité et les mesures de conservation.

Dans le rapport trimestriel du CSE de [décembre 2020](#), nous avons vu que le membre typique du CSE est un homme d'une soixantaine d'années originaire du Nord. Ce groupe démographique a largement contribué à la CSE, et nous comptons sur leur contribution continue à la Commission. Surtout en nous aidant à diversifier et à renforcer un nombre croissant de membres. Attirer des membres issus de régions du monde riches en biodiversité, des femmes, des jeunes professionnels et des experts non universitaires ne peut qu'améliorer notre vision de la conservation. Des connaissances traditionnelles à la télédétection, les approches fondées sur les faits doivent prendre en compte toutes les sources de données disponibles. Il est primordial d'inclure une multiplicité d'opinions et de visions du monde.

L'objectif ultime de la CSE est de sauver les espèces de l'extinction. Le [cycle de conservation des espèces](#) est notre cadre de travail pour y parvenir. Les connaissances que nous résumons dans les évaluations, puis que nous concrétisons dans des plans et mettons en œuvre dans l'action, visent à inverser le déclin de la biodiversité. L'accent accru sur les mesures de conservation a été une force directrice pour l'équipe du président du CSE depuis 2016, et se poursuivra dans les années à venir.

Ce *Rapport Trimestriel* de la CSE illustre les tendances de notre travail. Deux interventions de conservation, sur les guanacos et les hippopotames Colombiens, ont déclenché des réponses des autorités gouvernementales quelques

jours ou semaines après avoir été lancées. C'est très encourageant et nous sommes profondément reconnaissants aux gouvernements Argentin et Colombien pour leurs réactions et leur réponse positive.

Une stratégie examinée par le Comité Directeur de la CSE, qui contribuera à diversifier les membres et à renforcer l'action de conservation, est l'établissement de groupes nationaux de spécialistes des espèces (GNSE). Actuellement à l'essai dans des pays d'Afrique, d'Asie et d'Amérique du Sud, les GNSE devraient accroître notre participation à l'élaboration de priorités nationales de conservation fondées sur des données probantes et attirer de nouveaux talents en matière de conservation.

Le groupe de spécialistes des lichens présente les résultats d'un récent atelier d'évaluation. Ils illustrent les vertus du travail à distance. Pourquoi avons-nous toujours dû passer plusieurs jours à discuter en personne afin de fournir des évaluations de haute qualité ? Notre avenir, même après Covid-19, reposera sûrement davantage sur les réunions virtuelles. Leur valeur a été clairement démontrée.

Au cours des 40 dernières années, les requins et les raies océaniques ont connu un déclin plus important que tout autre groupe d'organismes, à l'exception peut-être des coraux formant des récifs. Nos océans sont les témoins des plus grandes pertes de biodiversité, comme le montre la liste rouge des espèces menacées de l'IUCN. Les Co-présidents sortants du groupe de spécialistes des requins résumant leur expérience au cours de la dernière décennie et soulignent leurs contributions au cycle de conservation des espèces. Un nombre impressionnant de réalisations dont nous sommes profondément reconnaissants.

Les zones clés pour la biodiversité, connues sous leur acronyme ZCB, continuent de se développer en tant qu'outil permettant de convertir les données résumées par la [Liste rouge des espèces menacées de l'IUCN](#) et la [Liste rouge des écosystèmes](#), en ensembles de données spatiales pour la définition des priorités de conservation. Simeon Bezeng, ainsi que plusieurs collègues, nous présentent le processus ZCB et les possibilités d'engagement du réseau CSE.

Le 18 Mars 2021, nous avons assisté au lancement du [Center for Species Survival Brazil](#) (CSS Brazil). Produit d'un partenariat entre CSE, le groupe de spécialistes de la planification de la conservation et Parque das Aves, le centre est un pôle national qui rassemble des personnes et des initiatives dans l'identification des espèces menacées d'extinction et dans le développement de plans stratégiques, stimulant la coopération et les actions. pour sauver des espèces, en travaillant spécialement pour la faune indigène du Brésil.

Notre rapport trimestriel se termine sur une note triste. Nous nous souvenons de Phillip Bishop, Co-président du groupe de spécialistes des amphibiens entre 2009 et 2020. Il était bien connu et très aimé par de nombreux membres du réseau du CSE. Phil manquera cruellement à chacun d'entre nous.

Recent Activities



CONFERENCES

Where the SSC chair's office attended or offered a lecture.



MEETINGS

Where the SSC chair's office participated.



INTERVENTIONS

Letters sent to Governments or Companies to propose actions for species and habitats under threat.



Conferences And Meetings

(Jon Paul Rodríguez, JPR; Domitilla Raimondo, DR; Kira Mileham, KM; Bibiana Sucre, BS; Orlando Salamanca, OS; Jafet Nassar, JN; Aritzaithe Rodríguez, AR; Nahomy De Andrade, ND; Mayerlin Ramos, MR; Edgard Yerena, EY; Simeon Bezeng, SB)

CONFERENCES

- *O movimento #ReverseTheRed e a estratégia de centros nacionais SSC*. Official Launch Center for Species Survival Brazil, Foz do Iguaçu. 18 March 2021. Online event. (JPR)

MEETINGS

- *WAZA Council Meeting*, Barcelona. 25 January 2021. Online event. (KM)
- *Reverse the Red and the IUCN One Programme*, Caracas. 26 January 2021. Online webinar.(JPR)
- *Conservation Evidence: Needs for Evidence Use*, Whitley Fund for Nature, London. 28 January 2021. Online event. (JPR)
- *SSC Steering Committee meeting*, Caracas. 9-12 February 2021. Online. (JPR, DR, KM, BS, OS, JN, AR, ND, MR, EY, SB)
- *Ghana freshwater Key Biodiversity Areas training workshop*. 15-18 February 2021. Online. (SB)
- *BirdLife South Africa Regional Conservation Strategic Planning meeting*, Johannesburg, South Africa. 17-18 February 2021. (SB)
- *IUCN National Committee meeting*. Johannesburg, South Africa. 25 February 2021. Online. (SB, DR)

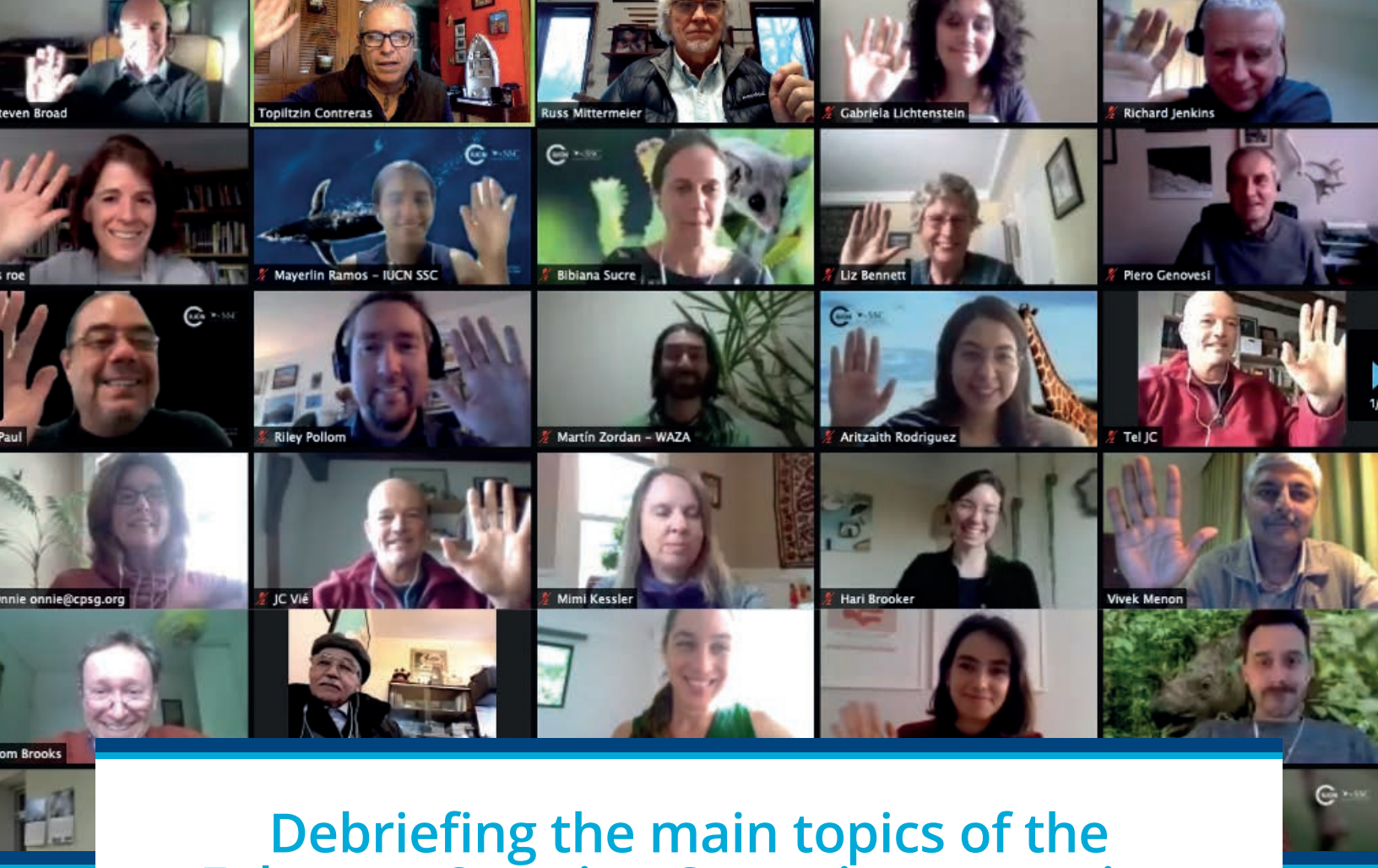
- Taller Plan Acción *Amazona barbadensis*, Provita, Echo Bonaire, with support from the Conservation Planning SG. 1-3 March 2021. Online. (JPR, BS)
- *Indianapolis Zoo, the Global Center for Species Survival and the SSC Chair's Office*. Indianapolis, USA, 2-8 March 2021. (JPR, KM, BS, AR)
- *Reunión virtual de los Estados del área de distribución del jaguar y organizaciones relevantes, Convención sobre el Comercio Internacional de Especies Amenazadas de Fauna y Flora Silvestres (CITES)*, Geneva. 5 March 2021. Online. (JPR)
- *Kenya National Species Specialist Group Meeting*. 05 March 2021. Online. (SB, DR)
- *Red List Committee, RedList iDiv Project meeting*. 05 March 2021. Online. (SB, JPR)
- *Animal Culture and the SSC*, Caracas. 11 March 2021. Online. (JPR, EY)
- *Reunión de Comité Sudamericano de UICN con el director general, Bruno Oberle*, Quito. 11 March 2021. Online (JPR, BS)
- *Species focused capacity building needs for Post-2020*, Newcastle University. 15 March 2021. Online. (JPR)
- *FAO-EHA Technical Expert Meeting on Reducing Emerging Infectious Disease Risks through Forest Ecosystem Health, Food and Agriculture Organization of the United Nations and EcoHealth Alliance*, Rome, New York. 18-19 March 2021. Online. (JPR)
- *KBA Committee Meeting*, Cambridge. 18-19 March 2021. Online. (JPR, SB)
- *Conservation Evidence: Implementation Pathways*, Whitley Fund for Nature, London. 22 March 2021. Online. (JPR)
- *GEO BON Advisory board meeting*, Montréal. 22 March 2021. Online. (JPR)
- *TRAFFIC Board of Trustees meeting*, Cambridge. 23 March 2021. Online. (JPR)
- *Conservation Leadership Community of Practice meeting*, Pew Trusts, Washington, DC. 25 March 2021. Online. (JPR)

INTERVENTIONS

- ***Informing about WCC Resolution to halt the implementation of the National Plan for the Sustainable Management of Guanaco (Plan Nacional para el Manejo Sostenible del Guanaco) in Argentina.*** In January the SSC Chair informed the Minister of Environment of Argentina about the approval of the World Conservation Congress resolution (WCC 2020 Rec 097) requesting the halt of the implementation of a National Plan for Sustainable Management of Guanaco in Argentina, to introduce changes aimed at guaranteeing the viability of the management of guanaco (*Lama guanicoe*) across its entire national distribution range, and the effective control of overexploitation and poaching. On March 15th IUCN SSC received a positive answer from the Secretariat of Environmental Policy on Natural Resources of Argentina's Ministry of Environment and Sustainable Development informing about the decision to revisit the current Plan in consensus with regional governments, through working sessions on all the key aspects of the Plan, in

a participatory fashion, involving the IUCN SSC South American Camelid Specialist Group (GECS) as well as all relevant stakeholders, having in sight improving the current Plan and eventually approving a new one.

- **Openness of IUCN SSC to the incorporation of traditional knowledge to species assessments.** In February, the SSC Chair sent a letter to representatives of the Inuit People of the north circumpolar region in regards to their concerns about the incorporation of traditional knowledge (TK) into the conservation assessment of species (expressed in two letters received in December 2020). The Chair announced that discussions have been initiated within the IUCN Red List Committee (RLC) on how to incorporate TK into Red List assessments, thus opening an opportunity for a wider conversation on the role of TK in IUCN's evidence-based approaches to policy. He proposed a series of virtual meetings in the near future that might lead to concrete steps in accordance with other IUCN instances.
- **Hippos in Colombia, risks of impact on biodiversity and human safety: Scientific-technical recommendations.** The SSC Chair and the Chair of the IUCN SSC Invasive Species Specialist Group (ISSG), Piero Genovesi, expressed their concern to the Environment Minister of Colombia, Carlos Eduardo Correa, in a letter sent on February, about the impact of African hippos as invasive species in some river ecosystems of this South American country. The IUCN SSC recommends competent authorities to urgently start a program for managing the population of hippos, using carefully selected techniques to maximize efficacy and minimize stressor pain to the animals. The SSC offered its advice on the management of this situation. Colombian colleagues informed that the Ministry responded positively and the Viceminister for Environmental Policy and Regulations informed about the initiation of a participatory drafting of a [National Strategy for the Management of Hippos](#), in consultation with the scientific and conservation community. An [article](#) in *EcoAméricas* reported on the letter and on the issue.
- **Meaningful actions to address the only immediate threat to the vaquita, Mexico.** The SSC Chair urgently expressed the Commission's concern to the environmental Mexican authorities in a letter sent in March about the rapid decline of the vaquita, highlighting that today's population is numbering only about 10 individuals. The vaquita (*Phocoena sinus*) is the most endangered marine mammal species in the world. It has a very restricted distribution, occurring only in the upper Gulf of California in Mexico. The present range of the vaquita appears to be concentrated in an extremely small area. The first priority to save vaquitas must be to immediately remove gillnets, with a strong focus on the legally predesignated Zero Tolerance Area.
- **Concern about illegal hunting of threatened bustards in Azerbaijan.** In March, Nigel Collar and Mimi Kessler, Chair and Deputy Chair of the IUCN SSC Bustard Specialist Group (BSG) sent a letter to the Minister of Ecology and Natural Resources of the Republic of Azerbaijan expressing deep concern over the illegal hunting of Little Bustards (*Tetrax tetrax*) that recently took place in Azerbaijan, even within Protected Areas, involving men with rifles and falcons. They also expressed concern about Great Bustards (*Otis tarda*) which were also reported as illegally hunted. Both the Little Bustard and the Great Bustard are protected by law in Azerbaijan. The Little Bustard is Near Threatened and the Great Bustard is Vulnerable, both on the IUCN Red List and in the Azerbaijan Red Book. BSG respectfully requested the Ministry to use its powers to ensure that illegal hunting of these species does not happen again, and Azerbaijan's reputation as a safe haven for threatened wildlife is restored. This country is of vital importance to the survival of both species.



Debriefing the main topics of the February Steering Committee meeting

In the new normal established by the pandemic, the SSC Steering Committee held multiple virtual meetings to advance our planning and action. We look forward to meeting face to face soon, but in the meantime work goes on.

During the February Steering Committee Meeting, several important topics were covered, many focused on strengthening the SSC Network in the new quadrennium.

Network management

With the aim to improve the processes and performance of the SSC Network, a working group was created to shape actions for improving membership diversity, addressing gaps in the network, and boosting group management.

Membership diversity

The goal is to invite groups to review their membership diversity data (e.g. gender, age, geography, institutional setting), design a plan to improve representation, and track progress against that

plan. This process would also apply at the leaders level. Another priority is to develop a communications strategy to showcase underrepresented constituents of SSC, with special emphasis on encouraging the engagement of youth.

Addressing taxonomic and thematic gaps

The Network Coordinators based at the Global Center for Species Survival at Indianapolis Zoo, jointly with Conservation Committees and Regional Vice-Chairs, will work on identifying taxonomic, geographic and disciplinary priorities to be proposed to the Steering Committee.

Improving group management

The SSC Network grows every day not only in number of members but also in taxonomic representation. New Specialist Groups are eager to learn from more experienced ones about best practices for running their groups, assessing, planning and acting. Major tasks being explored from the Chair's Office include carrying out training sessions on different issues of group management, and developing guidelines and webinars promoting good practices of other groups.

National Species Specialist Groups (NSSGs)

With the purpose of capitalizing the expertise of SSC members in support of national conservation agendas, facilitating science-based decision making in favor of policies for halting species loss, and creating a platform for attracting young, emerging conservation talent, National Species Specialist Groups are a new proposed structure within SSC that organises species experts at the national level.

NSSGs will bring together experts from all taxonomic groups, the marine, freshwater and terrestrial realms, and cross-cutting disciplines. Their establishment will follow the same steps as any other SSC group, but will also request the opinion of IUCN National Committees, as well as government institutions that hold the biodiversity conservation mandate.

Conservation actions

The ultimate purpose of SSC's work is to improve the status of threatened species. Emphasis in conservation action, was therefore identified as a priority for the next quadrennium.

At the meeting, the discussion focused on the need to support and encourage SSC Groups to increase conservation action but not make it mandatory. In this sense, four points were identified: 1) the need to develop a common understanding of what conservation action means; 2) the need to diversify the membership and include more action implementers; 3) the role of SSC versus IUCN Members and other partners needs to be clarified; and 4) resource mobilization is required to implement action.



Niebla ramosissima VU.
Photo © Rikke Reese Næsberg

Moving lichen assessments forward through virtual workshops

Jessica L. Allen, PhD

Co-Chair, IUCN SSC Lichen Specialist Group

One year ago, in March 2020, a virtual lichen Red List workshop was held that engaged twenty-two participants representing 14 institutions from throughout the Americas. In rapid response to the Covid-19 pandemic, the workshop shifted online as countries across the globe put measures in place to slow the spread of the disease.

The workshop included training and discussion of Red List assessments. Over the following six months specialist group members coordinated completing assessments over email and using the [Global Fungal Red List Initiative](#) website, some conducted field work to gather additional data, and others consulted herbarium specimens. The workshop and subsequent follow-up resulted in the completion of 28 final assessments that were published in the [December 2020 Red List update](#). Many more draft assessments are still in progress.

These 28 species assessments represent diverse taxa, including 23 genera and 15 families. They also span many Red List categories, with three Critically Endangered, 12 Endangered, nine Vulnerable, and four Least Concern. They represent a major step forward in the number of lichen assessments published, and advancement of global lichen conservation. The [IUCN SSC Lichen Specialist Group](#) (LSG) is grateful for financial support from the Mohamed bin Zayed Species Conservation Fund and IUCN-Toyota Partnership that made this work possible.

Some of the lichen species assessed are:



Arctic Orange-Bush Lichen (*Seiophora aurantiaca*) occurs only along the coastline of the Inuvialuit Settlement Region in the Canadian Western Arctic, where it can be found growing on the tundra. As an Arctic and coastal species, climate change impacts pose serious threats, including coastal erosion, saline wash from storm surges, and permafrost melting. Thus, it is assessed as Endangered. Assessors: Paul Sokoloff and Troy McMullin.

Image Credits: Arctic Orangebush Lichen (*Seiophora aurantiaca*) EN.
© Troy McMullin / Canadian Museum of Nature



Gladys' Mountain Spikes (*Lepra andersoniae*) is a rock-dwelling lichen endemic to the Appalachian Mountains of eastern North America. Its name honors Gladys P. Anderson (1888-?) who collected the type specimen in the early 20th century. Shifts in habitat quality due to logging, invasive species, and climate change, along with recreation, are threats to this species currently assessed as Endangered. Assessor: James C. Lendemer.

Image Credits: Gladys' Mountain Spikes (*Lepra andersoniae*) EN.
© Jason Hollinger



Niebla ramosissima is a calcareous soil dwelling species that is narrowly endemic to San Nicolas Island, California. It is adapted to absorb water through fog as the amount of precipitation on the island is very low. Shifting and degradation of its habitat due to invasive species and climate change are major threats to *N. ramosissima*, and it is currently assessed as Vulnerable. Assessor: Rikke Reese Næsborg.

Image Credits: *Niebla ramosissima* VU.
© Rikke Reese Næsborg



Peruvian Orange-Bush Lichen (*Teloschistes peruensis*) is a bright orange species that grows only in the fog oases of the coastal deserts of southern Peru and north-central Chile on open, sandy ground. It is currently known from only two locations, one in Chile and one in Peru. The remaining individuals of *T. peruensis* are threatened by many human activities, including development, recreation, and livestock grazing, and it is currently assessed as Critically Endangered. Assessors: Daniel Ramos, Reinaldo Vargas, María de los Ángeles Herrera Campos, Justin Moat, Oliver Whaley, Christian Parrinello, and Frank Bungartz.

Image Credits: Peruvian Orange-bush Lichen (*Teloschistes peruensis*) CR.
© Reinaldo Vargas

Woven Spore Lichen (*Texosporium sancti-jacobi*) is a soil crust lichen that grows in arid western North America. Its distinctive gold-dusted reproductive structures make it one of the most eye-catching species in soil crust communities of the west. Livestock grazing, development, agriculture, invasive species, increased fire intensity, recreation, and nutrient deposition are all threats to this species, leading to its Endangered status. Assessors: Daphne Stone, Heather Root, Jason Hollinger, Roger Rosentreter, Amanda Chandler, and Jessica Allen.



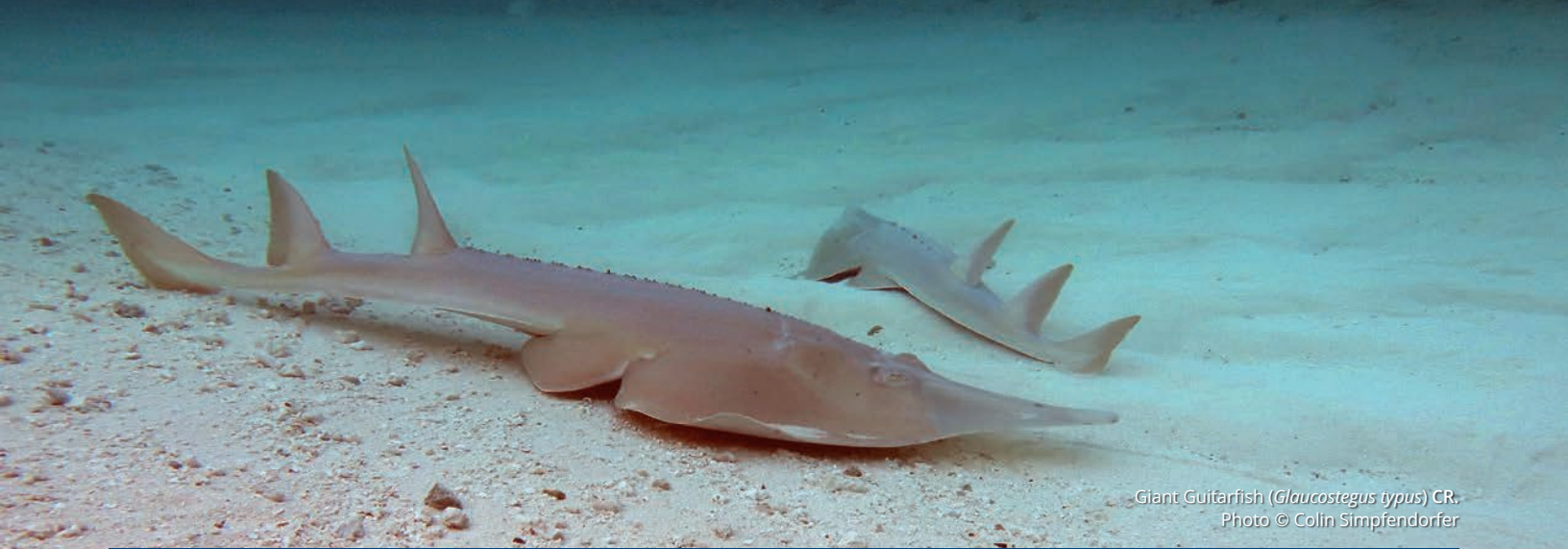
Image Credits: Woven-spore Lichen (*Texosporium sancti-jacobi*) EN.
© Daphne Stone

Coastal Popcorn Lichen (*Mobergia calculiformis*) can be found in the fog desert along the Pacific coast of the Baja California peninsula, in Mexico. The lichen has a unique growth form, looking like inflated kernels of popcorn. It adheres to small stones, boulders and cliffs, and has historically been documented from habitats along the Pacific coast, from northwestern Mexico all the way into California. In the US the species must now be considered extinct. In Mexico only few viable populations remain, one protected by the biosphere reserve of Guadalupe Island, all others on the Baja peninsula mainland. The species is assessed as Endangered, because the mainland populations are threatened by expanding agriculture and urbanization, and, particularly in the north, by an ambitious infrastructure project, the Escalera Nautica. Assessors: María de los Ángeles Herrera-Campos, Christian Parinello, and Frank Bungartz.



Image Credits: Palomitas Costeras (*Mobergia calculiformis*) EN.
© Frank Bungartz

The LSG held another virtual workshop in January and is working towards its goal of assessing 50 additional species in 2021, with an emphasis on species from the arctic and Galápagos Islands and on lichens harvested for use as food and medicine.



Giant Guitarfish (*Glaucostegus typus*) CR.
Photo © Colin Simpfendorfer

A shark's eye view of conservation

Nicholas Dulvy and Colin Simpfendorfer

Co-Chairs of the IUCN SSC Shark Specialist Group, 2009 until 2021

One of the three great lineages of fishes — the sharks, rays and ghost sharks (Class Chondrichthyes) — embody many of the assessment and conservation problems that beset all of our groups. Some are charismatic, while many others are less so. For some we have an overwhelming amount of data, for most others we have little. A few species are persecuted because of the perceived risk to humans, whereas many are heavily exploited. For some they are iconic wildlife to be preserved, but others they are food and income. For the past decade, it has been our pleasure to contemplate these paradoxes and to learn from the members of the Shark Specialist Group (SSG) and the Species Survival Commission (SSC) on how to turn these challenges into conservation opportunities. Here we summarize some learnings and lessons along the SSG assess, plan, act journey.

ASSESS

The first twenty years were a very heavy lift for the initial SSG leaders, Samuel 'Sonny' Gruber and Sarah Fowler, whose successes included building a membership drawn from all over the world, producing a global status report, and a comprehensive global Red List Assessment of all 1,000 or

so known species. The assessment process was done but many were burnt out, disillusioned with the process and or skeptical of the criteria. However, beyond the assessors and report writers, few knew of the status of sharks.

Strong science well communicated. After a few false dawns the manuscript summarizing this work was eventually accepted in the new journal *eLife*. Then the hard work really began — for three solid weeks to develop a communications strategy, with an IUCN press release, a PR Newswire release, our institutional press releases, infographics, YouTube videos, and factsheets. This combination of *strong science well communicated* worked and has been a template of our science communication successes over the past decade. Our training taught us that trustworthy science advice is founded upon published science. Hence, we don't unleash communications unless there is an underlying science product. In six years [this paper](#) has been viewed 32,000 times, downloaded nearly 4,000 times and cited neatly 800 times and now many people know that at least a quarter of sharks and rays are threatened.

Lifting the lid on the Ocean. We have just completed the first reassessment and are working on the calculation of a Red List Index for 1970-2020. This will give the first comprehensive and unbiased view of the effects of fishing on marine biodiversity. Unlike plastic pollution, habitat loss and climate change which can easily be seen with the eye — the effects of fishing are invisible. We only see the outcome of fisheries behind the glass of ice cabinets of supermarkets. Very few people in the world have worked on or observed the effects of fishing over time through stock assessment processes, time-series analyses or through fieldwork over spatial gradients. With this new reassessment we hope to reveal the effects of fishing on a highly sensitive class of marine biodiversity to a broader global audience. Initial observations suggest we have brought down the number of Data Deficient species as information collection has dramatically increased and as we learn to better determine status. The level of threat is increasing, a sign that we need to continue efforts to improve management. Overfishing remains far-and-away the most significant driver of marine biodiversity loss in our oceans. With this Chondrichthyan Red List Index we hope to lift the lid on the oceans and the problems of overfishing, as well as habitat loss and climate change.



Colin Simpfendorfer releasing a tagged juvenile smalltooth sawfish (*Glaucostegus typus*) CR. Photo © Colin Simpfendorfer

PLAN

The original *eLife* paper effectively laid out our work program for the remaining decade. We identified which lineages (families) were most likely to disappear entirely. Most of these most at risk families were dominated not by sharks, but instead these families were mainly what we branded as #flatsharks — the skates, rays and dorsoventrally flattened sharks, notably the angel sharks. Once we understood the status of all species, and especially the taxonomic priorities and the spatial priorities, we had the scientific basis for setting priorities and planning. The highest ranked families included sawfishes, wedgefishes and guitarfishes and angel sharks and these became the focus of much of our conservation planning work.

Bycatch is a wicked problem. The prevailing wisdom promoted by the media was that shark finning was driving extinction risk. The shark finning issue overshadowed the insidious problem of intense coastal trawl and gillnet fisheries catching flatsharks as the collateral damage. This problem continues to be compounded by the use of the term 'bycatch'. In the fisheries world, this term is often code for 'this is not a priority for fishermen so it's not a priority for managers'. There are lots of arguments for calling species bycatch (they are not valuable, they are not a big part of the catch), but the outcome is the same – little to no monitoring or management. We have seen repeated serial depletions over time, where fisheries focus on a target species until it is depleted driving a shift in focus onto the next 'bycatch' species. The classification of species as bycatch enables unmanaged serial depletions and local and regional extinctions. Think of dugongs, manatees, small cetaceans, seabirds, turtles and now sharks, rays and large teleosts that are all threatened by 'bycatch'. Whatever we call it, it's all about 'F' as Colin would say. With 'F' being the symbol for fishing mortality. These species are being overfished and we need to find ways to reduce interactions with fishing gear. Clearly, the wicked problem of 'bycatch' is an issue around which many specialist groups can find common ground and focus our efforts on. Notwithstanding this massive global generic bycatch problem, we had to start somewhere.

We toyed with the idea of starting conservation planning for sawfishes. The challenge and tension were that we knew barely anything about them outside of Florida, USA and Australia. Few scientists seemed to know anything about them, apart from Co-chair Simpfendorfer and Deputy Chair Sonja Fordham and the few others who sat on the US Sawfish Recovery team. They just seemed vanishingly rare and hence seemed to be an unpromising focus for conservation action. But the case was made that if we can't make the argument to conserve sawfishes based on their Endangered and Critically Endangered status then it would be hard to make it for any other taxa. This is where we began to engage the Conservation Planning team at the SSC, then led by Mark Stanley Price. We read the recently published *Strategic Planning for Species Conservation: A Handbook* and many SSC action plans and felt overwhelmed by the granularity. Many plans focused on a single species in a single country, yet we had seven species found across nearly 100 tropical countries and little to no data with only 59 peer-reviewed papers published on these species. Nevertheless, we took the approach of "build it and they will come" and this has since served us well.

After a year of led by Programme Officer Lucy Harrison, over 125 SSC members engaged through knowledge surveys and through the regional focal points who wrote sections of the report. ZSL stepped up by hosting and funding, along with Save Our Seas and the NOAA. The workshop was a staggering success, the first output was a revision of the Red List Assessments, enabled by new taxonomic resolution which reduced the number of species

from seven to five. With a new base of knowledge, the next few days focused on conservation planning. The planning was challenging. Ideally, we would work with local NGOs and governments to develop a plan of work to be implemented by local actors. But we now know there are five species distributed across 90 countries but only 25 participants. Almost no-one in the world knew about these fishes, let alone had the capacity to volunteer for actions, especially governments and donors. The team set about writing the report, which in retrospect was part situational analysis part coarse conservation planning. But the planning could only be generic, we were unable to tie actions to a species or place or identify partners to deliver or donors to fund. And indeed, this report was not endorsed by the Conservation Planning SG for these reasons. Yet, we have found this repeatedly with every group we have assessed since, and we suspect this is true of all wide-ranging data-poor species groups. We still maintain that we can't really do the granular conservation planning needed until we have a strategic global situational analysis. Nearly seven years on we are struggling to bring sawfish conservation to the ground at the scale more similar to other IUCN SSC action plans and conservation strategies. Many donors will not pay for planning, but there is no point in funding local conservation that occurs in a vacuum outside of global strategic situational analysis. Many in the SSC are acutely aware of this problem. We learnt much from the Leaders meetings along the way and a lot of credit has to go to Cat SG for sharing their regional-to-local and 'Family going on a mountain hike' approaches. Two key challenges remain. First, to impress upon funders that planning is an ongoing process of building conservation capacity, which needs dedicated funding. Second, strategic global planning is key to guide effective regional and local conservation actions.



Colin Simpfendorfer presenting Intervention at CITES Convention of Parties. Photo © Nick Dulvy

From these humble beginnings donors started to fund the 'great sawfish search', especially the Save Our Seas Foundation which poured US \$600,000 into the quest. Scientists sought sawfishes all over the world using a multitude of techniques mostly centered on historical ecology and social science surveys of ecological knowledge. Since 2014, there have been 252 documented search activities across 64 nations. We now know that sawfish are gone from 55 of the 90 nations where they were once found, amounting to extinction from nearly 60% of their former range. Conservation progress has been slow, but considerable capacity has been built around the world, donors are increasingly engaged as are aquaria all over the world. The aquarium community and Sawfishes Conservation Society with the Shark SG launched International Sawfish day on 16th October 2018. The next year there were over 100 tweets from 500 tweeters, with engagement from nearly 9,000 users and 11 million impressions. We could never have conceived that so many people would be engaged in sharing the plight of sawfishes just five years after our first workshop!

ACTION

Strategic partnerships. The renewed engagement with zoos and aquaria was an unexpected bonus and no doubt was aided by the tireless work of Kira Mileham (SSC Director of Strategic Partnerships). We now have a Memorandum of Understanding with Georgia Aquarium and close relationships with Wildlife Conservation Society, Zoological Society London, Dallas World Aquarium, and Seattle Aquarium. Indeed, Georgia Aquarium hosted our second “Sawfish: Progress and Priorities” meeting in 2017. This meeting showed that we still have to get the basics right. Sawfishes are in such a dire state that they unequivocally need strict protections and enforcement, however sawfishes are protected in only 19 countries. They are still trawled up nearly daily in Bangladesh, five years after the global alarm bell was rung. Not only did the sawfish strategy work spawn planning exercises for Angel sharks in the Northwestern Atlantic and Mediterranean Sea, but also for Devil and Manta Rays, and we are now working toward comprehensive planning for all 55 species of rhino ray — sawfishes, wedgefishes, giant guitarfishes and guitarfishes.

The high impact of the Red List Status summary plus the initial sawfish conservation status opened doors and made things happen. This strong science and planning precipitated the Shark SG becoming associated with a wider coalition called the Global Shark and Ray Initiative composed of Wildlife Conservation Society, WWF, TRAFFIC, Shark Trust and Shark Advocates International. This led to the development of a comprehensive planning exercise focusing on four pillars: Saving Species, Sustainable Fisheries, Responsible Trade and Responsible Consumption. As is usual, the process of planning, such as the learning and development of common understanding of vision, goals and objectives was more important than the paper plan. This eventually drew a number of donors, including the Disney Conservation Fund, and also indirectly led to the creation of the Shark Conservation Fund (www.sharkconservationfund.org) who have pumped US \$22 million into shark conservation over the past 4 years.

CITES. The Red List assessment process led by Shark SG founder, Sarah Fowler, and the subsequent high-profile paper sowed the seeds for international trade regulation. CITES reached its 50th birthday in 2014, but despite its longevity and success for terrestrial plants and animals, there was little attention to marine species. There were no commercially exploited marine fishes listed on the CITES appendices despite clear evidence of poor conservation status and significant international trade of exploited marine fishes.

Multiple stalling tactics and arguments were used to put-off listings, while some were valid others less so. One of the most critical arguments was that marine fishes can't be driven to extinction. This myth resists busting and has surprising and undeserved longevity. But the weight of evidence brought to bear on this argument by the various marine Specialist Groups overwhelmingly shows that marine fishes can go locally, regionally, and now globally extinct and that international trade is a significant factor in extinction risk. This myth, and others, were resoundingly rebutted by Amanda Vincent and colleagues in a landmark paper brought to the floor of CITES. But also, marine fisheries experts become increasingly comfortable with the Red List criteria. This didn't happen by accident, it happened for two reasons. First, it happened through the publication of a series of analyses that showed harmony between fisheries management criteria and the thresholds of the Red List A criterion and analyses that the scientific advice on marine fish listings was not particularly precautionary and out of whack with the terrestrial listings. Second, and most importantly, at the 2013 Conference of Parties in Bangkok, we counted at least 20 members of the Shark SG on national delegations, a small but non-trivial fraction of the 2–3,000 delegates. While we all

understand that people wear different hats, it was comforting to know that governments were getting advice from colleagues that had been involved in the Red List assessment process. The power of the Red List is partially in the status category, but more importantly it lies in the data stories assessors tell their colleagues in fisheries agencies and environment departments. Through the process of assessing more and more fisheries scientists understood the salience of the Assessments and the coherence and consistency with fisheries, management decision making processes, particularly in the developing world. We were further buoyed up and educated by the IUCN-TRAFFIC-WWF delegation at every meeting. Now, after a decade of effort, there are 45 sharks and rays on the CITES Appendices and these listings are driving efforts to assess and drive sustainability across many nations. The key now will be about translating listings to conservation action and finally conservation success. With most of the listed species being widely distributed and highly migratory this will not be a simple task.

Making 30x30 work for sharks and rays. As we enter the UN Decade of Ocean Science for Sustainable Development, and look to the new 30x30 targets for Marine Protected Areas (MPAs), the Shark SG is well placed to ensure that these initiatives benefit sharks and rays. Over the past decade, one-third of the growth of Marine Protected Areas was driven by those designated for sharks. But these MPAs were mainly in places of high abundance but relatively low diversity of coral reef sharks in the western Pacific Ocean. The challenge is two-fold — to make these parks work and to ensure the race for 30% MPA coverage by 2030 works for the relatively wide-ranging sharks and rays. The Red List reassessments and improved distributional mapping undertaken by the Shark SG will provide a solid contribution to what will inevitably be a decade of spatial ocean planning.

Finally, THANK YOU. It takes more than a village. None of this would have been possible without the intellect, experience and energy of our Deputy Chair Sonja Fordham who provided a coherent backbone of policy positions and tireless crafting of press releases. We thank the hard work and flexibility of the Program Officers and Global Shark Trends team without whom little would have been achieved, especially Lucy Harrison, Rachel Walls, Julia Lawson, Riley Pollom, Zoe Crysler, Helen Yan, and Wade VanderWright. Finally, we thank the officers and members of the Shark SG and the SSC and IUCN staff for giving so freely of their time and expertise over the past decade. We look forward to seeing marine conservation and the Shark SG continue to grow and succeed into its fourth decade.



Global Sawfish Conservation Strategy, group photo outside zoological Society, London. Photo © Shark Specialist Group



(KBA) validation and delineation workshop held in Senga Bay, Malawi in October 2018. Photo © Catherine Sayer

What the SSC Network can do to support the identification of Key Biodiversity Areas, and why they should

Simeon Bezeng Bezeng⁽¹⁾, Thomas Starnes⁽²⁾, Andrew Plumptre⁽³⁾, Will Darwall⁽²⁾

(1) IUCN SSC Regional Red List Programme Officer and BirdLife South Africa; (2) IUCN Global Species Programme;

(3) Key Biodiversity Areas Secretariat

At the World Conservation Congress (WCC) in Bangkok, Thailand, in 2004, the IUCN Membership adopted resolution WCC 2004 Res 3.013 calling for “a worldwide consultative process to agree on a methodology to enable countries to identify Key Biodiversity Areas.” Following the adoption of this resolution, WCPA-SSC Joint Task Force on Biodiversity and Protected Areas led a 12 year global consultation to develop a methodology for identifying Key Biodiversity Areas (KBAs), defined as sites that contribute significantly to the global persistence of biodiversity. *A Global Standard for the Identification of Key Biodiversity Areas* (IUCN, 2016) was officially launched alongside the KBA Partnership at the World Conservation Congress in Hawai’i in 2016. The KBA standard is built on five criteria and each criterion has quantitative thresholds to ensure that KBA identification is objective, transparent and repeatable. These criteria include **A: Threatened biodiversity, B: Geographically restricted biodiversity, C: Ecological integrity, D: Biological processes and E: Irreplaceability through quantitative analysis.**

The *IUCN Red List of Threatened Species* is a fundamental data source for the application of many of the KBA Criteria, especially Criterion A on Threatened Biodiversity. During the Red List assessment process, assessors compile data on species’ distribution, ecology and population size. Much of the same information and expert knowledge is required in KBA identification. IUCN SSC Specialist Groups are known for their involvement in the Red List, often serving as the Red List Authority for their respective taxonomic groups. By extension, the Specialist Groups also represent the key

biodiversity knowledge holders to be consulted as part of the KBA identification process. The Red List assessors are often best placed to identify the most important sites for the conservation of the species which they assess, and KBA assessments often involve consultation with Red List assessors of these KBA 'trigger species'. Using the Red List assessment to help identify globally important sites for species will help to build a network of sites to ensure their conservation. Here we discuss how Red List assessments contribute to the KBA identification process, and suggest ways to align Red List assessments and KBA identification within the 'Assess' phase of the SSC Assess-Plan-Act species conservation cycle.

Mapped area of occupancy (AOO), extent of suitable habitat (ESH) and species range maps can all be used as assessment parameters in the KBA Standard. Point locality data mobilised during species monitoring projects and deposited in various open access data repositories such as [Global Biodiversity Information Facility \(GBIF\)](#) are invaluable to the KBA identification process. Published or unpublished data on species presence at sites and counts of mature individuals can also be instrumental in confirming the importance of a proposed site for that species. These key monitoring data are essential to account for specific thresholds for reproductive units, global and site population size, etc. Five years into the KBA Programme, we have observed many instances where sites could merit KBA status but the KBA proposers have been unable to show recent evidence of species presence at the site. The following points outlined below could be used as evidence to support KBA identification.

- 1. Recent confirmation of species presence (with 8 - 12 years).** There are many instances where a potential site may contain a threshold proportion of a species' global population based on range, ESH, AOO etc. but there is no confirmed presence of the species within the site from the last 8 - 12 years. This is particularly true of elusive species such as phreatic molluscs living their entire life cycle below the water table. We strongly encourage anyone with biological records to make their data available through GBIF, iSpot, iNaturalist, eBirds, BirdLasser etc. so that it can be used by the scientific community (Photo 1). It could make the difference between being able to confirm a KBA or not.
- 2. A minimum number of 5 or 10 reproductive units of the species at the site.** The reproductive units threshold is built into several of the KBA criteria in order to ensure that there are sufficient reproductive units within a site to maintain the site population beyond the current generation. This can be directly observed or inferred e.g. by a number of spatially distant pools containing frogspawn or a number of active burrows indicating the threshold number of breeding pairs, but even then such evidence can be difficult to obtain. Typically, Red List assessors do not have capacity to confirm a minimum number of reproductive units at all potential sites of importance for a species. However, an integrated approach to Red List assessment and KBA identification could allow for reproductive units to be confirmed for one or two targeted sites during the assessment.
- 3. Point localities, including type localities, which are not mapped in the Red List assessment.** There are many instances where a species is known only from its type locality. Often the coordinates of the type locality are provided in the text information on the Red List assessment, and this is certainly helpful in ensuring that any KBA proposal is sited in the right place. It is now possible to include mapped point localities alongside the mapped range and AOO in the Red List assessments, and this is strongly encouraged. Where species are known only from one locality or a handful of localities, this is extremely helpful in KBA assessments.

- 4. Assessment parameters.** Where potential KBAs do not meet the thresholds based on range, but could qualify based on other assessment parameters such as AOO, ESH maps, it would be useful if they were provided in the Red List assessment. Many of the KBA criteria can be invoked using any one of a number of assessment parameters including AOO, ESH, range and number of localities. Mapped ranges almost invariably include areas where the species is not actually present, and ESH and AOO maps tend to be more refined. These refined parameters effectively make it 'easier' for an important site (i.e. a potential KBA) to meet the KBA thresholds for containing a given proportion of the global population. It is typically easier to identify KBAs for species with ESH and AOO maps, and their inclusion in Red List assessments is to be encouraged.
- 5. Additional data.** Sometimes a Red List assessment may miss a relevant dataset or peer reviewed paper contributing vital knowledge on a species' population or distribution. In some cases this could effectively amount to a range extension which would impact a KBA proposal for a species i.e. because it will affect the proportion of the global population calculated to be present within a site. We encourage Red List assessors to check for any reliable information on GBIF which may affect elements of the assessment including the mapped range and AOO. This is part of the Red List assessment process itself, not an additional requirement. However it emphasises the importance of ancillary data in the subsequent KBA assessment process.

We have highlighted some of the data gaps frequently encountered in KBA identification and suggested how Red List assessments and assessors can help to address them. Furthermore, we have emphasised that Red List assessors are often the key biodiversity knowledge holders in KBA assessments and an integrated approach to Red List and KBA assessments ensures the maximum efficiency for identifying critical sites for species conservation. To provide a recent example of an integrated assessment approach, we illustrate with a project led by IUCN Global Species Programme in Malawi with the Malawi Department of Fisheries and with the involvement of many Red List assessors and reviewers who are members of the SSC. The [Biodiversity information for the Lake Malawi/Nyasa/Niassa Catchment Eastern Africa: Data for decision-makers](#) project coordinated Red List assessments for all freshwater species native to Lake Malawi/Nyasa/Niassa (henceforth LMNN) catchment in eastern Africa which were in need of assessment (Photo 2). As part of this process, point occurrence data were collated in a dedicated [GBIF dataset](#) containing over 6,000 occurrences of c. 250 species. For example, [six observations](#) of the endemic cichlid *Tropheops kumwera* were added to the GBIF dataset. These points of occurrence were subsequently used to inform the species' Red List assessment and they were also mapped in the Red List assessment itself ([Konings, 2018](#)). The recent observations of the species were also critical in proposing a Key Biodiversity Area for this species – [Lake Malawi Southeast Arm](#). This project exemplifies how recent and updated Red List assessments played a pivotal role in identifying globally important sites for those species following the KBA approach.

KBAs should be identified nationally as far as possible and the KBA Programme is encouraging the establishment of KBA National Coordination Groups (KBA NCG) in countries to oversee and guide KBA identification. Red List assessments usually involve national experts and it is useful during the red-listing process to raise the idea of establishing these groups to then follow up on KBA identification, delineation, monitoring and conservation. The idea is that the KBA NCGs will push for KBA recognition within the country and incorporation in policy and legislation to ensure the conservation of the sites identified.

There is a global interest to harness KBA data as widely as possible, which will be essential to track progress towards achieving the Post-2020 Global Biodiversity Framework. For example;

- KBAs are used by the private sector for planning and risk mitigation, such as by international development banks through the Integrated Biodiversity Assessment Tool (IBAT);
- KBAs are recognised by international conventions including the Convention on Biological Diversity and the Sustainable Development Goals as important sites for biodiversity conservation;
- Coverage of KBAs by protected areas and other effective area-based conservation measures (OECMs) is an indicator used by various international processes and agreements, including under the Convention on Biological Diversity and the Sustainable Development Goals;
- KBAs are being used by governments to guide strategic expansion of protected area networks e.g. through their National Biodiversity Strategy and Action Plans (NBSAPs);
- KBAs can guide conservation priority setting;
- KBAs identify the sites for which a country has a global responsibility for conservation (recognising that additional sites may be nationally important);
- KBAs provide a standardised approach to assessing sites of importance for biodiversity across the world;
- KBAs are used for guiding conservation funding and support to sites, including the Critical Ecosystem Partnership Fund (CEPF) and Global Environment Facility (GEF), both of which are KBA Partners;

The underlying data, especially Red List assessment data that informs KBA identification, is being mobilised by the network of over 10,000 SSC volunteers and we encourage the SSC network to engage actively in the KBA identification process. We equally encourage SSC members to join the KBA Community, where regular communications on KBAs are provided, including training sessions, webinars, funding opportunities, through bi-monthly updates (join [here](#)).



Citizen scientists in South Africa contributing valuable species records during field expeditions that can be used to inform a species presence at site. Photo © Linda Hart



Brazilian Three-banded Armadillo (*Tolypeutes tricinctus*) VU.
Photo © Liana Sena

Center for Species Survival Brazil officially launched

Fabiana Lopes Rocha⁽¹⁾, Carmel Croukamp⁽²⁾

(1) CSS Brazil head officer, (2) CEO Parque das Aves

The Center for Species Survival Brazil (CSS Brazil) organized a virtual event on March 18th to officially announce its establishment in Brazil. The center is a national hub that brings together people and initiatives in the identification of species at risk of extinction and in the development of strategic plans, boosting cooperation and actions to save species, working specially for the native fauna of Brazil.

Brazil is one of the most biodiverse countries with the second-highest number of endemic species in the world. Unfortunately, there are countless Brazilian species, from plants and fungi to animals, under the threat of disappearing forever. The good news is that conservation works, there is solid evidence of the recovery of species, but we need to scale this work to be able to reverse biodiversity decline.

To boost species conservation efforts in Brazil the IUCN Species Survival Commission (SSC) partnered with the IUCN SSC Conservation Planning Specialist Group (CPSG) and Parque das Aves, to create the Center for Species Survival Brazil, a national hub to capitalize on experience and tools of the IUCN network and help governments, NGOs, and communities to upsurge their conservation goals and achieve them. The center came to build upon the existing structure of

CPSG Brasil, which has been integrated into the country's conservation fabric for over 15 years, as well as the strong actions of SSC Specialist Groups in Brazil.

The center is part of a wave of hubs under the Reverse the Red umbrella, the global movement to stimulate cooperation and develop strategic actions for conservation. Brazil is one of the seven countries that has established a Center for Species Survival. Others exist in Portugal (Oceanário de Lisboa), United Kingdom (The Deep Aquarium), Argentina (Fundación Temaikén), Singapore (Wildlife Reserves Singapore), Australia (Zoo Aquarium Association Australasia), and United States (Albuquerque Biopark, Georgia Aquarium), which also holds the Global Center for Species Survival (Indianapolis Zoo).

The event – *igniting cooperation and optimism*

Due to the COVID-19 pandemic, the launching of the CSS Brazil was held virtually last March 18th and was transmitted live on YouTube. Thirteen speakers and three moderators participated in the three blocks of talks, followed by questions and answers sections by the three hundred, very participative live attendants through the chat.

Jon Paul Rodríguez, SSC Chair, opened the first block, alongside Onnie Byers (CPSG Chair), Karina Andrade (IUCN Sur director), and Stephanie Arellano (IUCN Sur program officer). “The IUCN Species Survival Commission partners with Reverse the Red to ensure the survival of wild species and ecosystems. Committed to three essential steps: assess-plan-act Reverse the Red can help us become the first generation to stop biodiversity decline” said Jon Paul Rodríguez. “I see the center as a model for collaborative, science-based effective conservation around the world”, said Onnie Byers. The event also included representatives of ICMBio, the Brazilian governmental environmental agency, CSS Brazil officers, and all the CPSG Brasil core members.

Many participants made queries about how the center could contribute and integrate national strategies. Rodrigo Jorge, from ICMBio, coordinator of the National Red List, was one of the speakers to discuss this matter: “I would say that the main bottleneck for the integration of the Global and National Red List is solved with the creation of CSS Brazil. We need a close articulation. With CSS support, we have made greater progress in this last year than in the last seven years”.

The event was a good sample of how CSS Brazil plans to operate. Working hand-in-hand with the IUCN commission members, IUCN secretariat, government agencies, universities, zoo community, local people, and all those that have a passion for conservation.

“The objective of this launch was to introduce ourselves, to demonstrate how we can work together, but in reality, what we hope is that you will be the protagonists of this story, like multipliers and fighters for the species agenda in Brazil,” said Fabiana Rocha, CSS Brazil head officer.

Carmel Croukamp, Parque das Aves CEO, and co-founder of the center closed the event by thanking all the participants and declaring the center officially opened. The event had a great repercussion on the conservation community in Brazil. The event is available on [YouTube](#) and has now roughly 2,000 views.

Center for Species Survival Brazil, how it works

A key aspect of Reverse the Red is to combine grassroots and country or region-specific approaches with global tools. Brazil has an existing national red listing infrastructure, one which aspires to converge with the *IUCN Red List of Threatened Species*. This may have serious implications for the prioritization and planning to conserve species and for the development of conservation policies. As an example of the impact, there are over 4,700 Brazilian species that were assessed nationally but are not yet listed globally. Besides, a recent comparison indicates 37% of category mismatch on the 1,426 endemic species of Brazil that were assessed both nationally and globally (CSS Brazil, unpublished data). The center facilitates and builds capacity for the IUCN Red List in Brazil and connects people and data between the national and global levels.

By integrating conservation planning into the regional resource center as well as global Red Listing, it is possible to identify which species most need help, and then convene and facilitate multi-stakeholder workshops within Brazil to make a strategic plan to save the species. CPSG provides training in key skill sets, analysis workshops, and provides facilitators to mediate the creation of plans to save species.

The center promotes the implementation of actions following IUCN assessment and planning procedures, and working together with a range of partner organizations. CSS Brazil took up as a flagship project the conservation crisis of the Birds of the Atlantic Rainforest: this is currently the largest continental avian extinction crisis on the planet, with many species with 100 or fewer individuals remaining in total distribution.

Parque das Aves and partners carry this forward by creating and executing fieldwork initiatives and projects which follow CPSG's strategic, multi-stakeholder plans to save species. The flagship project is a kind of arena to test out forms of cooperation for Brazil and determine what can be achieved through different formats; what CSS Brazil achieves here can be followed through for many different species groups.



To learn more about this initiative, please visit: [Instagram](#) [Facebook](#) [Globe](#)

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Who shapes the SSC?

Remembering Phillip Bishop



A leading amphibian conservationist, who dedicated his career to understand and protect amphibian populations.

Wallace's flying frog (*Rhacophorus nigropalmatus*) LC. on Phillip Bishop face.
Photo © Debbie Bishop

Born in Devon, southern England, Phil Bishop attended the University College, Cardiff in Wales for his undergraduate degree in Zoology (1978) and his Master's degree in Parasitology (1981). In 1994, Phil completed his PhD in Zoology at the University of the Witwatersrand, in Johannesburg, South Africa, where he studied a variety of aspects of frog behaviour, including the chorus of frog mating calls.

Phil was really passionate about teaching others about amphibians and the roles that they play in their ecosystems and had a natural talent to share knowledge. That was how, in 1997, he became a Senior Teaching Fellow at the University of Otago — IUCN Member institution —, where he continued to investigate amphibian communication and behavioral ecology, along with diseases that threaten amphibian populations and other factors affecting their conservation. Phil received two Excellence in Teaching awards in 2010, and in 2015 he was promoted to the Director of the Ecology Degree Program, serving until 2020. He had been appointed to the role of Head of the Zoology Department, to start January 2021, prior to his diagnosis and sudden passing.



Phil's commitment to conservation extended beyond the lab. He took on leadership roles in a variety of international organizations and actively participated on the global conservation stage. He served as the Chief Scientist for the Amphibian Survival Alliance, led the New Zealand Frog Research Group and was Co-chair of the IUCN SSC Amphibian Specialist Group during the quadrenniums 2009-2012, 2013-2016 and 2017-2020. Phil was also a member of the Conservation Planning Specialist Group, Conservation Translocation Specialist Group, and Species Monitoring Specialist Group.

He authored or co-authored over 100 publications, such as 'Skin peptide defences of New Zealand frogs against chytridiomycosis' (2010); 'Differential polymorphism in cutaneous glands of archaic *Leiopelma* species' (2011); 'Cutaneous gland secretions of *Leiopelma pakeka* as a potential mechanism against rat predation' (2012); 'Detecting frogs as prey in the diets of introduced mammals: a comparison between morphological and DNA-based diet analyses' (2014); including many articles about what humans can do to protect amphibians in the face of climate change and lost or fragmented habitats.

Leader, friend, colleague and mentor, Phil Bishop will be remembered as an original titan of amphibian conservation. His work has been described as "foundational to the development of the Amphibian Specialist Group and to the broader field of amphibian conservation", by his colleagues. Phil leaves an enormous hole in the lives of those who were fortunate enough to know this extraordinary human being.

"I firmly believe we need to help the young people of today realise the importance of a sustainable lifestyle for the future of the planet, the amphibians and primates (humans included)."

Professor Phillip Bishop.



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