amphibian
survival alliance

Annual Report
FY2019

amphibians thriving in nature

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Acronyms and Abbreviations

Amphibian Ark	AArk
Amphibian Conservation Research Symposium	ACRS
Amphibian Red List Authority	ARLA
Amphibian Survival Alliance	ASA
Amphibian Survival Alliance Global Council	GC
Deutsche Gesellschaft für Herpetologie und Terrarienkunde	DGHT
Durrell Wildlife Conservation Trust	Durrell
European Association of Zoos and Aquaria	EAZA
Endangered Wildlife Trust	EWT
Global Wildlife Conservation	GWC
IUCN SSC Amphibian Specialist Group	ASG
Key Biodiversity Areas	KBA
Madagascar Flora and Fauna	MFG
Rainforest Trust	RT
Smithsonian Conservation Biology Institute	SCBI
Synchronicity Earth	SE
Zoological Society of London	ZSL

A Message from the Amphibian Survival Alliance

The Amphibian Survival Alliance (ASA) is only as strong as its partnership – the group of organisations that jointly combine to make ASA a reality, and form the essential network that enables a holistic and global response to the amphibian declines crisis. Our partners share news of their remarkable achievements, and benefit from being an integral part of a growing global community that celebrates and protects amphibians. In building the resources to promote and support the work of our partners, we help continue to build the momentum needed to effect real change and improve the outlook for amphibians everywhere.

In July 2018 we reconstituted our partnership so that all partners – both existing and new – could join ASA under its new governance by-laws and strategy. This has enabled us to reconnect with our partners, learn more about their work and ambitions, and determine their role in the partnership – be it championing amphibians in a specific country or region, promoting communications, tackling a specific threat, and/or investing in conservation action. It has also allowed us to reach out afresh to many more organisations, and develop and coordinate our partnership in an informed and strategic manner. The information we have gained is enabling us to suggest new collaborations and support new work. We now have over 50 partners (and rising) that are active, engaged and conducting fantastic projects all over the world. This Annual Report illustrates some of the tremendous work undertaken by ASA partners – a wonderful testament to the determination and creativity of this community. It is our sincere privilege to share these updates from another busy year of progress, and illuminate the achievements and individuals associated with these amazing organisations.

Alongside reconstituting the partnership, we launched a new ASA website to better communicate our strategic direction, with the IUCN SSC Amphibian Specialist Group (ASG) concurrently developing a new ASG website. As guided by expert advice, these communication platforms enhance the ability of ASA and ASG to meet the needs of our distinct yet overlapping audiences.

As we look to the future, there are many exciting challenges and opportunities on the horizon. With enduring thanks to the tremendous generosity of Dr. George B. Rabb, we are launching the ASA Conservation Grants in his honour. These grants will fund our partners to initiate vital conservation work, and will also be available to help in emergency situations, such as sudden catastrophic events imperilling threatened species. ASA is co-funding the update of the Amphibian Conservation Action Plan (ACAP) together with ASG and the Detroit Zoological Society, and will seek new ways of coordinating the implementation of ACAP across our partnership. Following the success of the Amphibian Conservation Research Symposium (ACRS) in April 2019 (in collaboration with Manchester Metropolitan University and Chester Zoo), we are hosting an ACRS session at the upcoming 9th World Congress of Herpetology in New Zealand, funding more Future Leaders of Amphibian Conservation to attend and share their work. We will also address vital fundraising priori-

ties, including our role in the Key Biodiversity Areas Partnership and mitigating the impact of amphibian disease.

As we take stock of the present and look to the future, we also strive to remember those who helped us get here. In April 2019, we lost another founder and great advocate of the amphibian conservation movement – the inimitable scientist, conservationist and artist Professor Tim Halliday (1945-2019). Tim was International Director of the IUCN SSC Declining Amphibian Populations Task Force from 1994 to 2006 – an initiative that spearheaded direct action for amphibians at a time when declines were poorly understood and profoundly under-prioritised. We were able to honour Tim in life with a Special Issue of *FrogLog* that was published in November 2018. Tim helped to edit this edition and therefore learned about many of the ways he had informed, supported and inspired a generation of amphibian conservationists. We continue to follow in his footsteps, and celebrate all those who have made it possible for amphibians to take their rightful place on the main stage of global conservation efforts. We will continue to encourage and champion new generations to build on these crucial foundations, and create a brighter future for amphibian conservation.

Helen Meredith, PhD
Executive Director
Amphibian Survival Alliance

News from the ASA Partnership

amphibian and reptile conservation

Amphibian and Reptile Conservation

By Jim Foster

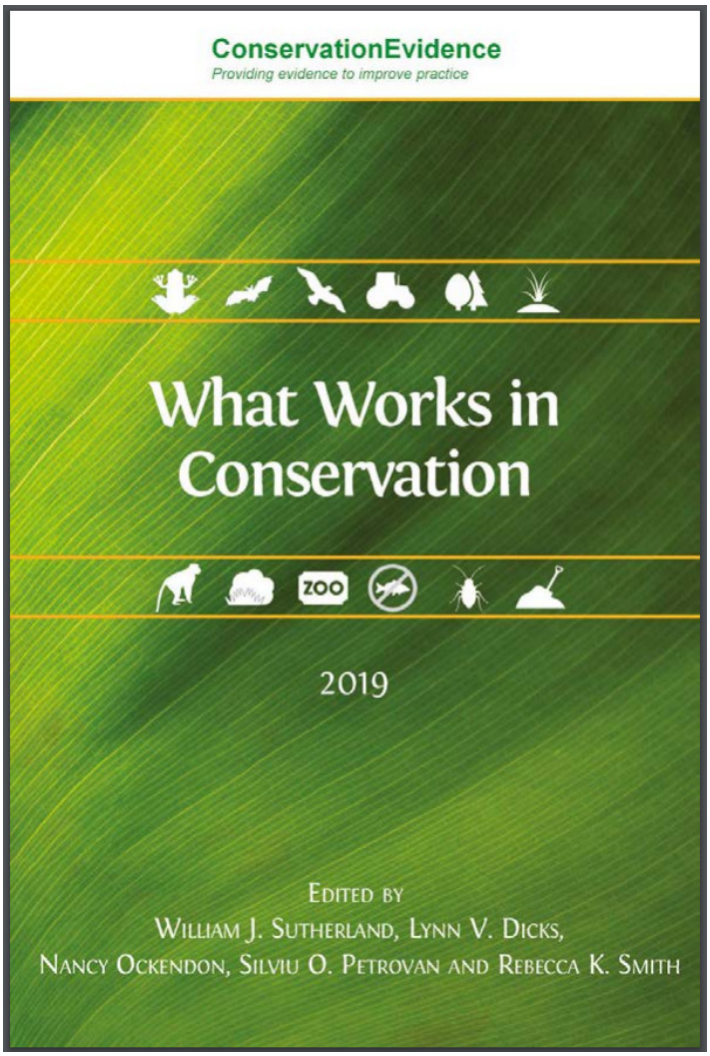
From July 2018 to June 2019 the Amphibian and Reptile Conservation (ARC) Trust has undertaken a range of activities to progress UK amphibian conservation. We have achieved this through three main ways of working: direct conservation action on the ground, working in partnership with others to take forward action and research, and through influencing policy. Highlights over this period include the following: We are trialling a new approach to head-starting for the rarest UK amphibian, *Pelophylax lessonae* (with funds from Amphibian Ark and others, and with advice from Zoological Society of London). We have undertaken projects to deliver landowner advice, habitat creation and habitat management on the ground, especially in relation to *R. temporaria*, *B. bufo* and *T. cristatus* in South Wales, and *Epidalea calamita* in North-west England, North Wales and Scotland. Some of our projects have also involved significant outreach activities to engage local communities. We have started co-supervision on two PhDs, one to diagnose declines of *Bufo bufo* (with the Universities of Wolverhampton and Salford), and one to investigate the effects of climate change, disease and invasive species on UK amphibians (with University of Plymouth and the Zoological Society of London). We have produced reports on the wider benefits of *Triturus cristatus* conservation, using an ecosystem services approach, and on the current conservation status of this species (with Natural Resources Wales). We have reviewed and produced recommendations on criteria for selecting protected sites for amphibians, and policy options for future management of the agricultural landscape. In relation to the threat of urbanisation, we have been assisting with a trial of a novel, landscape-scale approach to addressing development impacts on *T. cristatus*, known as "District Level Licensing" (with South Midlands Newt Conservation Partnership, Freshwater Habitats Trust and Naturespace Ltd), and advising government on associated policy. We have helped set up the "Wildlife Assessment Check," an online tool which helps users understand whether protected species are likely to occur on a given area proposed for construction, and which surveys and legislation might apply. December 2018 saw a successful conviction for an offence involving damage to amphibian habitat, in which we has assisted police with expert advice. We continue to work with police and other wildlife organisations to press for better laws and enforcement. In order to help with status assessments we have been working to produce IUCN Red List categories at country level for UK amphibians, and helped government agencies with reporting on status as required under international legislation. Along with others, notably ZSL, we have encouraged government to urgently address the threat to amphibians posed by introduced pathogens, notably *Bsal*. We have been working with partners overseas to develop RACE (Reptile and Amphibian Conservation Europe), to encourage a pan-European approach to the conservation of amphibians. On our nature reserves we have undertaken work to sustain amphibians, notably *E. calamita* in heathland and coastal habitats. Amongst our various communications over the last year are two national conferences, media appearances, training courses, newsletters, social media and website activity.

AmphibiaWeb

By Michelle Koo

AmphibiaWeb, motivated by alarming global amphibian declines observed as far back as the 1980s, created and maintains an online resource (https://amphibiaweb.org) that synthesizes information on amphibian biology, taxonomy, and declines. Our data-driven approach aims to produce a web page for every species of amphibian (over 8,000 and counting), including range and voucher maps, media files of calls, videos, and images, and expert and literature-based species accounts; all information is created by and for scientists, students, and the public, and is curated by AmphibiaWeb. We use biodiversity informatics and web tools for sustainability and research-friendly utility. We provide the ability to browse by taxonomy, phylogeny, and geography (including by country and state), and current literature lists on new species, disease, and declines. Every week, we feature and archive a news highlight with a photo of the week to showcase the best of the almost 40,000 images of amphibians in our database. Our latest projects include initiating a Trait Database for amphibian life history traits and upgrades to the Amphibian Disease portal (https://amphibiandisease.org) to track fungal pathogen sampling for *Bd* and *Bsal*. The latter was created by AmphibiaWeb as part of the National *Bsal* Task Force's Technical Advisory Committee, where AmphibiaWeb's Michelle Koo heads the Data Management Working group with USDA Forest Service and NW PARC leader Dede Olson. This year we joined the Surveillance Working Group to work on incorporating *Bsal* monitoring into undergraduate courses. (Read more about the *Bsal* Task Force on salamanderfungus.org.) We also recently released a new family-level interactive phylogeny and a Phylogeny & Taxonomy Primer to explain what phylogenies and taxonomy are, why they change, and their importance to understanding and conserving amphibian diversity. Through these efforts, AmphibiaWeb aims to be a comprehensive research tool and educational platform for the biology and conservation of amphibians.

Conservation Evidence



By Claire Wordley

Conservation Evidence is working with several 'Evidence Champions' to improve the use of evidence in decision-making for amphibians. Froglife is an Evidence Champion who are encouraging their staff to check Conservation Evidence when deciding conservation actions, and are also increasingly testing the impacts of their work. Similarly, SAVE THE FROGS! Ghana is also checking Conservation Evidence to choose the most appropriate action, and testing actions where the evidence is currently scarce or absent. Both of these Evidence Champions have received training in evidence use and generation from Conservation Evidence. The IUCN Red List of Threatened Species (IUCN Red List) is another Evidence Champion, linking every species page on their website to the evidence for how to conserve that species and other species in the same family on the Conservation Evidence website. This is already helping to link more people with the evidence for what might work to conserve the species that they are interested in. Funders such as the Whitley Awards and the Rufford Foundation, who fund amphibian related projects along with others, are also Evidence Champions. They are asking grant applicants to check Conservation Evidence for what might work to conserve their species, meaning that the project proposals are evidence-based from the start. Finally, Conservation Evidence has published many practitioner papers on ways to conserve amphibians in our journal. Since 2018 we have published papers on translocating endemic Korean Treefrogs, treating Valcheta Frogs for chytrid fungus, and avoiding chytrid fungus in frog eggs. Publishing these papers from on the ground conservationists allows them to share their knowledge and experience without paying expensive journal fees.

If you are interested in finding out more about becoming an Evidence Champion then please contact hd438@cam.ac.uk.

Detroit Zoological Society

By Detroit Zoological Society

The Detroit Zoological Society's National Amphibian Conservation Center (NACC) operates through collaborative and broad-spectrum conservation actions. The conservation center achieves *ex situ* conservation efforts through longstanding participation in breeding and reintroduction programs. The NACC participates in novel reproductive, husbandry, and welfare research and the current director, Dr. Ruth Marcec-Greaves, acts as reproductive advisor to a number of amphibian breeding programs within the Association of Zoos and Aquariums (AZA). The NACC implements *in situ* conservation through field surveys, climate surveys, and habitat restoration both locally and abroad. Conservation through education is an important goal of the Detroit Zoological Society, and the NACC operates multiple ongoing citizen science programs, locally and abroad, which foster enthusiasm for amphibians and their conservation. While the NACC engages in a great deal of hands on conservation, they also focus on conservation organization and management. The Detroit Zoo is a participant in the administration of amphibian conservation through multiple avenues. For example, Dr. Ruth Marcec-Greaves is vice-chair of the Amphibian Taxon Advisory Group for the AZA, and over the last year she has been working on renewing and editing the regional collection plan which will advise AZA institutions on participation in amphibian conservation programs. Additionally, the Detroit Zoological Society has recently partnered with the IUCN SSC Amphibian Specialist Group in order to assist in the update of the Amphibian Conservation Action Plan.

The NACC at the Detroit Zoo has many active conservation programs, but is always ready to take new action and collaborate in the fight against amphibian extinction.

Deutsche Gesellschaft für Herpetologie und Terrarienkunde

By Axel Kwet

The DGHT is leading or involved in a variety of projects aimed at the conservation of amphibians and their habitats. Since September 2018 DGHT is co-financer and project executing organisation within the new amphibian captive breeding project "Citizen Conservation#Amphibians," together with the ASA partner Frogs and Friends and with the Verband der Zoologischen Gärten. Citizen Conservation is a network of professional and private animal breeders and caretakers with the goal to establish a captive breeding program that has broad public participation and support, where endangered amphibian species can survive and multiply under controlled and humane conditions and can serve as a backup in case wild populations are wiped out.

In September 2018 specialists and members of the DGHT working group for anurans published an expert opinion on general husbandry guidelines for anurans, which defines a framework for the species- and animal-friendly keeping of anurans based on a wealth of experience in this field of herpetology. In September 2018 experts from the DGHT working group for urodelans published a second issue of their guidelines for the conservation breeding of endangered newt and salamander species in both German and English. The aim of both publications is to provide fundamental knowledge for the conservation of endangered species.

In November 2018 the DGHT working group for field herpetology in collaboration with the Austrian Herpetological Society, the Swiss KARCH, the Luxemburgian Musée National d'Histoire Naturelle, and the German NABU nominated the Alpine Newt (*Ichthyosaura alpestris*) as "Amphibian of the year 2019." This campaign aims to gain public attention for this and other wild herps in Central Europe and to fascinate and sensitize even the youngest for this animal group. It includes various activities such as an international meeting and distributing free printed materials.

The DGHT chair Markus Monzel attended meetings of the CITES Animal Committee in preparation of CoP18 and provided recommendations of proposals for amendment of Appendices I and II supporting the listing in Appendix II of several amphibian species and genera (*Echinotriton chinhaiensis*, *Echinotriton maxiquadratus*, *Hyalinobatrachium* spp., *Centrolene* spp., *Cochranella* spp., *Sachatamia* spp., *Paramesotriton* spp., *Tylotriton* spp.).

In 2019 DGHT funds are financing two amphibian conservation projects: a project on the optimisation of a former fishpond area for crested newts and midwife toads among others receives support from "Hans Schiemenz Fund" and a project on evaluation, monitoring and conservation of one of the last surviving high-altitude Harlequin Toad populations (*Atelopus* sp.) in Colombia is funded via DGHT/ZGAP Species Conservation Fund together with Zoologische Gesellschaft für Arten- und Populationsschutz e. V.. Additionally, DGHT is co-sponsoring a workshop which will take place in November 2019 in Medellin, Colombia with 20 key experts and Harlequin toad conservationists working across the *Atelopus* range countries with the aim to create an Atelopus Survival Initiative (ASI).

Endangered Wildlife Trust

By Jeanne Tarrant

Critically Endangered Amathole Toad finds safe home

The Glenara Farm, near Hogsback in the Eastern Cape province, South Africa has been selected for Nature Reserve status through the process of Biodiversity Stewardship and will officially be called the Elandsberg Private Nature Reserve. These 1,200 hectares will be the first, and only, formally protected area at which the Critically Endangered Amathole Toad occurs. In November, the "Notice of Intention to Declare" was published in the Eastern Cape Provincial Gazette.
Donor – Rainforest Trust

Good post for Endangered Reed Frogs

A Facebook post about the captive breeding and subsequent release of Endangered Pickersgill's Reed Frog – one of our focal species – in partnership with Johannesburg Zoo, achieved over 8,000 views and some great, positive feedback. We posted the news in the lead up to the release of some 200 captive-bred Pickersgill's Reed Frog back into the wild in September 2018. Our role is that of *in situ* partner, making us responsible for habitat protection and management, and post-release monitoring. This is the first reintroduction of a threatened frog species in South Africa and is the culmination of a decade of collaborative work by multiple stakeholders. The frogs were bred at the Johannesburg Zoo following collection of adult frogs from two sites in Durban in September 2017, assisted by the EWT. The captive-bred juveniles were released at Mount Moreland, with the story generating over 150 popular articles, as well as being featured in several documentaries, including by CNN and 50/50. Since then, a further 50 frogs have been released to a new site, and the programme is set to continue with more releases to additional new sites – all towards improving the chances of the long-term survival of this species and achieving the objective of downlisting its threat status.
Donors – Disney Conservation Fund; Rainforest Trust; Rand Merchant Bank

Frog Ranger

The Threatened Amphibian Programme was the extremely proud and happy recipient of a Ford Ranger from the Ford Wildlife Foundation. The handover took place on 16 October at the Ballito Ford Dealership, KwaZulu-Natal. With a team of five members now, this sponsorship has been extremely helpful in saving on use of personal vehicles for our project work, especially in KwaZulu-Natal for our Pickersgill's Reed Frog Recovery work.
Donor: Ford Wildlife Foundation

Frogs in the Classroom

During the fiscal year, our programme engaged 825 junior school learners with our newly developed 'Frogs in the Classroom' course across four schools in the Durban area. The course adopts a similar learning strategy to the EWT's very successful 'Cranes in the Classroom' course. We also engaged directly with approximately 770 learners through World Wetlands Day and Leap Day for Frogs, in February 2019.
Donors: Rand Merchant Bank; Tiger Brands

Star achiever

Dr Jeanne Tarrant received the EWT's Programme Manager of the year award at the 2018 EWT Conservation Week, in recognition of her outstanding work towards the protec-

tion, and highlighting the plight, of South Africa's amphibians.

Making progress with Reed Frogs

The second Pickersgill's Reed Frog Forum was held on 30 April 2019, hosted by the South African Association for Marine Biological Research (SAAMBR) in Durban. This forum is held annually to report on progress against the Biodiversity Management Plan for the Endangered Pickersgill's Reed Frog. The EWT is the lead implementing agent for this Plan (with Dr Jeanne Tarrant as the co-author). Excellent progress has been made by all active role-players, especially the EWT in terms of habitat protection, habitat management, public awareness and community engagement.

Donors – Disney Conservation Fund; Rainforest Trust; Rand Merchant Bank; Tiger Brands

Protecting the enigmatic Table Mountain Ghost Frog

We expanded the geographic scope of our work, starting a new project in the Western Cape in November on the Critically Endangered Table Mountain Ghost Frog, which aims to conduct never-before-done research to advise improved habitat management for it and four other threatened or localised species that occur only on the mountain.

As part of this new project, the first stakeholder meeting of the Table Mountain Freshwater Ecosystems Project was held on 13 May 2019 in Cape Town. Most key stakeholders were present – SANBI, SANParks, City of Cape Town, the EWT and CapeNature. The meeting covered all of our research and fieldwork implemented since January, including baseline ecological and habitat assessments, species surveys, tadpole occupancy, and movement studies. To date, we have found the Critically Endangered Table Mountain Ghost Frog at both higher and lower elevations than previously recorded in all streams on the mountain. We have also discovered an undescribed *Galaxias* fish at 12 of 136 sampling sites. The purpose of the meeting was a move toward outlining the conservation needs for the Table Mountain Ghost frog; in particular that we will be compiling in a Conservation Plan for the species.

Donor - Table Mountain Fund

ASA Partners - IUCN SSC Amphibian Specialist Group; Rainforest Trust

Foundation for the Conservation of Salamanders

By Lauren Augustine

In 2018 FCSal continued a vital part of our mission to fund salamander conservation, education and/or research initiatives and funded $9,323.00 in research projects through our annual grant process. The details about these grants and updates from the researchers can be found on our website.

We celebrated the 3rd Annual Salamander Saturday. There were 32 registered Salamander Saturday events around the world. This is another critical part of FCSal's mission to disseminate information about the threats to salamanders and their habitats.

We welcomed two new board members, Jasper Leavitt and Patrick Heney to the team. You can learn about our new board members on our website.

FCSal initiated a new project partnering with Emerging Wildlife Conservation Leaders (EWCL) to launch the Amphibian Report Card, an educational and collaborative tool to support amphibian conservation efforts. By crowd-sourcing expert input, the Amphibian Report Cards aim to provide both an assessment of the conservation status of U.S. amphibian species as well as recommendations on how to contribute to their conservation. FCSal now maintains this database and hopes this can further our mission to increase awareness about salamander diversity, biology, and conservation. Follow the link to learn more or become a contributing scientist by submitting a report card.

As we look back on our amazing accomplishments in 2019, we're excited to plan for our upcoming year:

- November 1st, 2019- Grant applications for 2020 open
- January 15th, 2020 - Grants applications are due
- May 2nd, 2020- Salamander Saturday

For more information about FCSal or to donate, please visit our website at www.FCSal.org.

Froglife

By Laurence Jarvis

Froglife is a national UK wildlife conservation charity concerned with the conservation of the UK's amphibian and reptile species and their associated habitats. Over the past year Froglife's amphibian conservation initiatives have ranged from practical conservation actions, public engagement, citizen science and research projects. Froglife's long-standing Toads on Roads campaign has continued with volunteers from 165 toad patrols around the country saving over 98,843 common toads. These huge public engagement efforts are helping to save common toad populations which have declined in the UK by 68% over the past 30 years (Petrovan & Schmidt, 2016). In order to gain a fuller understanding of the causes in their decline Froglife have been trialling a citizen science project aiming to determine the mortality risk of juveniles as they disperse from ponds towards roads. This critical life stage is highly vulnerable and little is known of the fate of juveniles (Petrovan & Schmidt, 2019). We hope to elucidate further information on the dispersal activities of juvenile Common Toads so we can carry out the most effective conservation actions.

In 2018, Froglife continued its research into examining the effectiveness of under-road wildlife tunnels for amphibians using intra-red cameras. We are monitoring cameras in 25 tunnels at four sites across the UK as well as a site in France. In May 2019, Froglife published a paper demonstrating the effectiveness of tunnels for Great Crested Newts at a site in North Yorkshire (https://link.springer.com/article/10.1007/s10344-019-1263-9).

Hampton Nature Reserve is a 300 acre site which lies to the south of Peterborough containing over 320 ponds. The Reserve supports a wide range of wildlife including Smooth Newts, Slow Worms, Grass Snakes, Dragonflies and Butterflies. Great Crested Newts are present in exceptionally high numbers due to the abundance of breeding ponds and excellent terrestrial habitat. During 2018-19, Froglife carried out crucial habitat restoration works on ponds including scrub removal, reed management and creation of hibernacula. This has enhanced the habitats available for Great Crested Newts as well as Smooth Newts and Adders.

Our London Tails of Amphibian Discovery (T.O.A.D.) project, funded by the National Lottery Heritage Fund, is a four year project aimed at conserving Common Toads across Greater London. Froglife is carrying out a range of activities including: practical habitat enhancement for common toads; development of toad patrols at key sites; toad-focussed public engagement events; Swimming with Dragons sessions for children; and Wildlife Gardening Workshops for the general public. Over 7,000 people have taken part in toad activities in the last nine months. Of particular interest is our Virtual Reality experience which takes people through a toad tunnel to understand the world from a toad's point of view. As part of the project Froglife have been promoting the use of our Dragon Finder app. This is a free download developed by Froglife for Android phones and tablet devices that allows people to identify and record sightings of amphibians and reptiles across the UK. During 2018-19, 584 people submitted sightings which is proving very helpful for documenting species distributions.

FUNDAECO

By Ingrid Arias

During the last year, FUNDAECO has advanced in amphibian conservation through the implementation of the following strategies:

Habitat protection. FUNDAECO continues to manage 2 amphibian reserves in Guatemala: La Firmeza Amphibian Reserve (In Sierra Caral) and San Isidro Reserve (in Huehuetenango, Guatemalan Highlands). Reserve parkguards implement weekly patrolling activities in order to ensure habitat protection. During 2019, the San Isidro Reserve was expanded in 45 hectares, thanks to the support of Global Wildlife Conservation. These reserves contribute to the protection of habitat of 22 species that are Critically Endangered, Endangered, Vulnerable and endemic.

Amphibian population monitoring activities in AZE sites. Under Carlos Vazquez´s lead, the local staff implement monitoring activities, in order to generate information regarding populations and status of amphibians in Alliance for Zero Extinction (AZE) sites in Guatemala. 90% of the AZE species has been confirmed thanks to these monitoring activities.

Training of community park guards in amphibian monitoring activities. During field visits and monitoring activities, parkguards receive advanced training with Carlos, in order to increase their capacities and ensure long term monitoring of species.

Environmental education. FUNDAECO implements environmental education with 6 communities surrounding the amphibian reserves. Education material has been produced and is used during presentations and educational activities with children, as part of the management of the reserves.

National and regional coordination. FUNDAECO is part of the Mesoamerican Amphibian Conservation Network, and actively participates in regional coordination and exchange of information. Also, FUNDAEO is part of the ASA Global Council and contributes in the development of global strategies to advance in amphibian conservation. FUNDAECO continues to establish new alliances in order to ensure habitat protection for amphibians in Guatemala.

Global Wildlife Conservation

By Lindsay Renick Mayer

Amphibian conservation is among the highest priorities for Global Wildlife Conservation (GWC), an ASA partner organization whose mission is to conserve the diversity of life on Earth.

Using the Amphibian Conservation Action Plan (ACAP) as our guide, we are working with partners at the global, regional, site, and species level. Supporting the identification of Key Biodiversity Areas (KBAs) and updating the IUCN Red List of Threatened Species enables us to identify priority sites and priority species, which in turn leads the development of our amphibian projects.

Highlights of activities between July 2018 and June 2019 include:

The Global Amphibian Assessment. GWC supports projects and initiatives that feed into the IUCN Red List of Threatened Species for numerous group of species. One such initiative is the Global Amphibian Assessment, run by the Amphibian Red List Authority of the IUCN SSC Amphibian Specialist Group. GWC's support ensures that the ASG can continue providing relevant extinction risk assessments to the global community through the IUCN Red List. During this time period, GWC helped lead Global Amphibian Assessment workshops in Honduras and China, as-

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sessing the updated extinction risk for 615 amphibian species.

Lonely No More. It had been more than 10 years since the last-known Sehuencas Water Frog, Romeo, knew love—but his luck changed drastically in January of 2019. On an expedition to a Bolivian cloud forest, Global Wildlife Conservation and the Museo de Historia Natural Alcide d'Orbigny rediscovered the Sehuencas Water Frog (*Telmatobius yuracare*) in the wild and rescued five individuals for a conservation breeding program, three males and two females—a young frog and a Juliet for Romeo. These are the first Sehuencas Water Frogs that biologists have seen in the wild in a decade, though over the years (including in 2018) scientists had searched this area for the species with no success. The pair have been living together in the same aquarium since March, and GWC has helped fund the purchase of a biosecure rescue pod, which will be outfitted in the coming year.

Atelopus Survival Initiative (ASI). GWC, in partnership with the IUCN SSC Amphibian Specialist Group, ASA, Amphibian Ark, Smithsonian's National Zoo and Conservation Biology Institute, the Philadelphia Zoo, and others, is spearheading efforts to develop and foster a coordinated harlequin toad conservation network.

Fundación Atelopus. As part of the ASI, GWC has partnered with Fundación Atelopus to ensure the survival of Harlequin Toads in the Sierra Nevada de Santa Marta in Colombia—home to some of the last-surviving high-elevation Harlequin Toad populations—through ecological monitoring, education and community-based initiatives that build capacity and enable threat mitigation.

Herpetological Society of Ireland

By Rob Gandola

The HSI has always envisaged ourselves as an all-island society for Ireland and so in March 2018 we were delighted to be able to proceed with our first major project in Northern Ireland. This came about as part of the 'What's in your pond?' collaboration with the Centre for Environmental Data and Recording (CEDaR) based at National Museums Northern Ireland, the Amphibian and Reptile Groups of the UK (ARGUK) and the Amphibian and Reptile Trust UK (ARC). Our role was to assist with the training of local biodiversity officers, council representatives, rangers, and members of the public in surveying methodology over a two-day period at the incredibly beautiful Peatlands Park in Dungannon, Armagh. This initiative was followed up in March 2019 with another two-day outreach event at the Ring of Gullion, a designated 'Area of Outstanding Natural Beauty' in south Armagh close to the border with the Republic of Ireland. These events included pond dipping, model making and talks to 93 pupils from local schools and members of the public. It was also used as a way to refresh the 'What's in your pond?" initiative.

In Dublin in 2018, we investigated a major habitat mismanagement event just weeks prior to the Spring spawning season. This occurred at an important urban breeding site for Common Frogs (*Rana temporaria*) and Smooth Newts (*Lissotriton vulgaris*). We have been working closely with the on-site authorities since then, with the damage to the local amphibian populations still being assessed.

In terms of scientific endeavours, our long-term monitoring of urban amphibian populations reached its fifth year in 2019. We have also been fortunate to have two wonderful HERPer master's students conduct their theses with us in 2019, investigating amphibian use of attenuation ponds and landscape connectivity and genetics respectively. These projects will hopefully be highlighted in a future issue of FrogLog.

Last, but not least, in June 2019 we initiated the 'Toad in the Hole' campaign (www.thehsi.org/toad-in-the-hole). This is a collaboration with the National Parks and Wildlife Service, Dún Laoghaire–Rathdown County Council, and local community groups to determine the distribution, density, and impact of non-native Common Toad (*Bufo bufo*) population(s) living along the interface of south Dublin city and the Dublin mountains. This campaign is going exceptionally well. The involvement and contribution of the local communities are undoubtedly the reason for the success of the project so far.

Madagascar Fauna and Flora Group

By Karen Freeman

Madagascar Fauna and Flora Group (MFG) have continued to work hard on amphibian conservation issues in eastern Madagascar. We continue our intensive ecological monitoring of reptiles and amphibians in Betampona Strict Nature Reserve, which has now been running for a decade, making it one of the longest running dedicated herpetological monitoring programs in Madagascar. Highly interesting results are currently being analyzed and have been submitted for publication in collaboration with Nicolas Dubos and colleagues from the Amphibian Specialist Group (ASG)-Madagascar, which highlight the interannual variation in amphibian populations numbers in particular and hence reinforces the need for such long-term monitoring to gain a reliable picture of amphibian population dynamics. MFG continues to maintain the biosecurity foot bath post at the entrance to Betampona to help prevent the introduction of diseases such as amphibian chytrid fungus (or *Bd*) and ranavirus, this is one of the only such biosecurity posts in operation in Madagascar's protected areas.

MFG continues to do annual screening for *Bd* at our other main site of intervention, Parc Ivoloina as part of a nation-wide *Bd* screening program initiated by the ASG-Madagascar in 2011 and, thankfully, so far results remain negative for Ivoloina.

MFG remains more committed than ever to mitigate the impacts of the Asian Toad (*Duttaphrynus melanostictus*) invasion around Toamasina as far as possible and have made good progress on the establishment of a toad exclusion zone around Parc Ivoloina to protect the 18 endemic frog species found at Ivoloina: 4 of which are putative new species and one of which is so far only known from this single location. This latter initiative has been kindly supported by a private donor through ASA and Global Wildlife Conservation, Saint Louis Zoo's Wildcare Institute and with extra support from private funds raised by Dr Franco Andreone of ASG-Madagascar. This project has seen a great development of the existing long-term collaboration between MFG and the Higher Institute of Sciences, the Environment and Sustainable development (ISSEDD) of the University of Toamasina, with eco-volunteers helping with many aspects of the project from updating distribution mapping to awareness-raising and installation of the barrier itself. MFG has been working hard with Ambatovy, a private mining enterprise in Madagascar, and have signed a Memorandum of Understanding to carry out more extensive control and mitigation work on the Asian toad, a new program which will shortly be underway. MFG has also been in discussions with ASA member, Chester Zoo, who recently joined as a member of MFG and are keen to work together with us on amphibian conservation issues in eastern Madagascar.

Nordens Ark

By Emma Nygren

Foundation Nordens Ark has always been dedicated to amphibian conservation. In the early 90's we started to work with the conservation of native species such as the green toad and the Fire-bellied Toad and since then we have now expanded our involvement to also include non-native species. During 2018 we were involved in four conservation programs, which include both *in situ* and *ex situ* activities. On the native side we expanded our work with the Green Toad (*Bufotes variabilis*). We went from being a head starting facility to building up an isolated captive population for the species. Our hope is that this will ensure the long-term sustainability for the program. During the year we also supported the Norwegian authorities and Kristiansand Dyrepark in their effort to save the Critically Endangered Pool Frog (*Pelophylax lessonae*) in Norway by sharing knowledge on captive breeding and husbandry of the species. We also participate in two international *ex situ* programs, for Mountain Chicken Frogs (*Leptodactylus fallax*) and the Lemur Leaf Frog (*Agalychnis lemur*). For the Mountain Chicken Frog, we house 14.8 frogs in a bio-secure facility and we are one of members of the Mountain Chicken Recovery Program (https://www.mountainchicken.org/). We also house a bio-secure population of the Lemur Feaf Frog in collaboration with Bristol Zoo and Manchester Museum.

Rainforest Trust

By James Lewis

For over 30 years, Rainforest Trust has been dedicated to the protection of critical habitat for the world's most threatened species. In 2018, the number of acres that Rainforest Trust has helped to protect increased by 4.2 million, bringing the current total to more than 22.2 million acres. This included 37 new or expanded protected areas in 20 countries across Africa, Asia-Pacific, and the Americas. Amphibians have always been a priority for Rainforest Trust, and several key amphibian areas saw increased protection due to the organization's involvement in 2018.

Onepone Endangered Species Refuge

ASA Partner Herp Conservation Ghana spearheaded the creation of the Onepone Endangered Species Reserve (OESR) which was officially declared by the Ghanaian government on 24 September 2018. Encompassing 847 acres, the OESR harbors at least 222 plant, 152 bird, 27 mammal, 20 amphibian, and 322 butterfly species at the site. The flagship species for the project is the Critically Endangered Togo Slippery Frog also known locally as the 'whistling' frog (*Conraua derooi*), an endemic to the site and just a few adjoining areas along Ghana's boundary with the Republic of Togo. The new protected area is also home to the Endangered Ukami Reed Frog (*Hyperolious torrentis*) and Baumann's Reed Frog (*Hyperolius baumanni*, LC), endemic species to the Togo-Volta Hills. Finally, the partner has collected several specimens of amphibians and butterflies which are currently being described and might be new to science.

Cerro Chucantí Private Nature Reserve

Cerro Chucantí,an isolated massif in eastern Panama, rises from sea level to 4,721 feet in elevation and sustains a diverse cloud forest. The geographic isolation of the Cerro Chucantí mountaintop allows its flora and fauna to differ considerably such that it contains several locally endemic rainforest species found nowhere else on Earth. There have been many discoveries of species new to science at this irreplaceable site, including salamanders, frogs, and snakes. To date, Rainforest Trust has supported local partner

Asociación Adopta el Bosque Panamá in purchasing 388 acres for the Cerro Chucantí Private Nature Reserve.

Grand Bois
The forest is located in southwestern Haiti of the Tiburon Peninsula, in a bioregion known as the Massif de la Hotte, and considered among the most important biodiversity hotspots in the Caribbean. It has among the highest density of amphibian species in Haiti (19 species) and 58% of these are either Critically Endangered or Endangered on the IUCN Red List. Rainforest Trust supported Société Audubon Haïti in acquiring 1,228 acres to establish the first private forest reserve in Haiti.

Río Canandé Reserve
Adjacent to the Río Canandé Reserve in Ecuador, ASA Partner Tropical Herping and Fundación Jocotoco were involved in the rediscovery of the Endangered Horned Marsupial Frog garnering global media attention. Four individuals of this species are now part of an *ex situ* conservation effort at the Jambatu Research Center.

Heart of Nantu
Together with Yayasan Adudu Nantu Internasional in Kalimantan, Indonesia, we are working towards the 15,260 acre expansion of the 127,289 acre Nantu Wildlife Sanctuary, where amongst many other species, there are populations of the recently described Bangkong Beranak (*Limnonectes larvaepartus* and the Tuwa Flying Frog (*Rhacophorus georgii*).

West Java, Indonesia
We are working with Burung Indonesiaand Manchester Metropolitan University (UK) to strategically expand the protected area network across West Java. This is planned to expand the network by at least 10,000 acres, and protect species such as the Critically Endangered Bleeding Toad (*Leptophryne cruentata*) and the Pangerango Bubble-nest Frog (*Philautus pallidipes*).

Smithsonian Conservation Biology Institute

Smithsonian Conservation Biology Institute

By Brian Gratwicke

In May 2019, the Panama Amphibian Rescue and Conservation Project closed its facility at the Nispero Zoo to streamline and consolidate its captive-breeding operations at a single location at the Smithsonian Tropical Research Institute in Gamboa, Panama. A portion of the living frog collection was transferred to a non-profit organization called the EVACC foundation that operates independently in El Valle de Anton.

In the coming year, our goal is to construct a new dedicated insect-rearing facility to expand the space available for frogs and to support growing the living frog collection. Our captive-management priorities are to breed any unrepresented founders and to start working on F2 generations of frogs. In late 2018, Dr. Luke Linhoff began a post-doc fellowship with the project to investigate anti-chytrid skin secretions and inheritance of these traits in the captive collection with a view to selectively breeding more resistant frogs.

The Panama Amphibian Rescue and Conservation Project is a joint initiative of the Cheyenne Mountain Zoo, The Houston Zoo, the Smithsonian Tropical Research Institute, the Smithsonian's National Zoo and Conservation Biology Institute and Zoo New England.

Synchronicity Earth

By Simon Stuart

Synchronicity Earth strives to address under-funded and overlooked conservation priorities, and is committed to helping develop alliances that address gaps in critical conservation efforts. As a prime example of this strategy, SE has made a long-standing commitment to supporting the Amphibian Survival Alliance (ASA). In addition to championing this partnership from the very start and providing an annual donation to ASA's core costs since 2011, in 2016 we also offered to support the Executive Director of ASA and have hosted and paid for Helen Meredith in this role ever since. SE also continues to take a leading role in ASA's overall governance. Such is our commitment to amphibian conservation, we formally established an Amphibian Programme in 2018 as one of SE's five core programmes. Together with our ongoing support for coordinating and promoting global action on amphibians through ASA, we have also incorporated several other key contributions into this crucial programme. We support the IUCN SSC Amphibian Specialist Group's Amphibian Red List Authority (ARLA) to update the Global Amphibian Assessment (GAA). In the 2018 fiscal year, SE successfully raised significant funding for the completion of the GAA update in partnership with Global Wildlife Conservation (GWC) and the IUCN Spe-

cies Survival Commission. The IUCN Red List of Threatened Species, of which the GAA is the amphibian component, is a vital knowledge product informing global conservation action. We continue to fundraise for the Amphibian Fund in honour of Dr. George B. Rabb (1930-2017), helping to secure much-needed support for amphibian species conservation around the world. We have also supported Penny Langhammer at GWC/ASA to update the Alliance for Zero Extinction (AZE) priority areas for the conservation of site-restricted Critically Endangered and Endangered amphibian species. This information feeds into the Key Biodiversity Areas Programme, which seeks to identify and designate sites of importance for the global persistence of biodiversity. ASA is a founding member of the KBA partnership, and Penny diligently works as ASA's Director of Key Biodiversity Areas, enabling her to make rapid use of updated AZE site data to help inform the locally-led identification and protection of KBA sites.

The mission of SE's new Amphibian Programme is "To mobilise new resources and knowledge to support and catalyse conservation efforts for threatened amphibians." To this end, we have developed the following programme goals:

1. Improve the knowledge base to guide amphibian conservation;
2. Fund increased amphibian conservation in the field, including trialling new approaches to combat disease;
3. Support the development of amphibian conservation organisations.

As part of SE's Amphibian Programme, we will continue to support the ASA, Amphibian Fund, ARLA and KBA partnership, whilst also identifying high-quality amphibian field conservation organisations that would benefit greatly from our ongoing support. As we move into the next fiscal year, we will start funding this action on the ground to move conservation forward for threatened species. SE's communication's team will help share stories from the field with a view to engaging ever greater numbers of amphibian supporters.

Zoolocial Society of London

By Benjamin Tapley

ZSL's Amphibian Thematic Group has had a busy year. In April, ZSL hosted a symposium which approached chytrid fungi and ranaviruses as a combined threat to amphibians. Researchers and on-the-ground conservationists outlined the issues and reported on the outcomes of field mitigations and went on to develop strategies for combating rapidly emerging mixed infections that are already threatening global amphibian biodiversity.

The Mountain Chicken Recovery Program (of which, ZSL is a partner) is currently preparing to release 27 Zoo bred mountain chicken frogs on Montserrat where they recently became extinct. The frogs will be released into predator-proof enclosures where the habitat will be modified to make it less favourable for *Batrachochytrium dendrobatidis*, the primary driver of Mountain Chicken Frog population declines.

ZSL staff members, in partnership with various entities, have also been involved in 27 peer reviewed publications, including a study that showed the UK's wild newt populations seem to be free of *Batrachochytrium salamandrivorans*; data was gathered from swabbing more than 2,400 wild newts in ponds across the UK and from newts found dead by members of the public that had been submitted to ZSL's Garden Wildlife Health project for post mortem examination. Another study showed that historic trends in mass-mortality events attributed to ranavirosis were found to match the recent pattern of increased temperatures, with disease outbreaks predicted to become more severe, more widespread and occurring over a greater proportion of the year within the next few decades, if carbon emissions continue at their current rate.

Two new fellowships have started work on EDGE (Evolutionary Distinct and Globally Endangered) amphibian species in the Western Ghats of India; they are focusing on the galaxy frog and the Kottigehar dancing frog by obtaining key information on habitat requirements and breeding ecology to inform conservation of the target species. Work on the El Rincón Stream Frog (Argentina) has continued and there have been improvements in *ex situ* facilities, native habitats have been restored and captive-bred individuals have been reintroduced to sites from which the species had gone extinct. An EDGE scale-up award to a previous fellow, to support the effective habitat management of Alchichica Lake in Mexico – the only home of the distinctive Taylor's Salamander.

ZSL London Zoo rehomed four Chinese Giant Salamanders that were seized by UK Border Force, one of which is now exhibited in the reptile and amphibian house at London Zoo. This Critically Endangered EDGE species has been the focus of a long-term project co-ordinated by ZSL in China and the exhibit showcases this work and the threats posed to this iconic amphibian. ZSL staff supported Amphibian and Reptile Conservation in the head-starting and disease surveillance aspects of the pool frog reintroduction programme.

Finally, British Comedian, author, writer and frog enthusiast Stephen Fry lent his voice to a new animation which highlights the impact that ranavirus is having on amphibians in Great Britain.

News from the ASA Advisors

Amphibian Ark

By Anne Baker

Following a review last year of the Amphibian Ark's key programs, a number of changes were made that we believe will make them even more effective in meeting our mission: *Ensuring the survival and diversity of amphibian species focusing on those that cannot currently be safe-guarded in their natural environments.* We appreciate the assistance provided by Dr. Ariadne Angulo (co-chair Amphibian Specialist Group), Dr. Martín Zordan (World Association of Zoos and Aquariums), Dr. James Collins (Arizona State University), Ben Tapley (Zoological Society of London and co-chair ASG Captive Breeding Working Group) and Dr. Brad Wilson (Atlanta Botanical Garden) in our review.

Since 2009 AArk's Seed Grants program has supported the establishment of captive breeding centers at their start, providing support to 26 programs in 16 countries. Last year saw the evolution of this program into the Conservation Grants program, which now includes Start Up Grants (formerly Seed Grants), Extension Grants (up to two years additional support for Start Up Grant recipients contingent on meeting the objectives of the initial seed grant and evidence of securing additional outside support), Mentorship Grants, and a Professional Development Grant. Information on Conservation Grants can be found at amphibianark.org

Our Training and Capacity Building program continued, with a Neotropical Amphibian Management and Conservation Course held in conjunction with the Universidad del Valle de Guatemala and a husbandry and water management course in conjunction with the United States Fish and Wildlife Service in Bozeman, Montana. The first online course, Amphibian Translocation and Reintroduction was developed and will be presented in September 2019, allowing us to reach more amphibian conservationists more efficiently.

Conservation Needs Assessments (CNAs), which prioritize amphibian species within a country or region for conservation action based on extinction risk and identify needed conservation actions, were completed for Malaysia, Honduras, Colombia, the Seychelles, and North America salamanders. The Malaysian and Honduran CNA workshops were held in conjunction with Amphibian Red List workshops, and combining these two processes proved to be an efficient and effective use of both time and resources. Combined Red List/CNA workshops are planned for Papua New Guinea and Costa Rica in the fall of 2019 and we look forward to continuing what has proved to be a very effective working relationship.

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IUCN SSC Amphibian Specialist Group

By Ariadne Angulo and Phil Bishop

The IUCN SSC Amphibian Specialist Group (ASG), IUCN's network of ca 340 volunteer amphibian specialists operating in 43 regions, has been involved in a diversity of activities over the past year, most notably the following:

1. Completing and launching the new 2019-2020 ASG Strategic Plan to help guide the ASG's priorities and activities to the end of the current IUCN period;
2. With the technical support of ASA, developing and launching the new ASG website to better serve the ASG's audience needs, but still working closely with ASA to ensure mutual support;
3. Developing and launching the new ASG Grant Writing Mentorship Program, aimed at strengthening ASG membership capacity in grant writing;
4. Employing a Research Assistant to search the literature databases and provide monthly updates to the list of amphibian conservation publications, which hereafter has been named in honour of the late Professor Tim Halliday, The Halliday Conservation Library. These lists can be found on the new ASG website;
5. Attending and presenting at the ASG Brazil amphibian conservation (ANFoCo) symposium in São Paulo, Brazil;
6. Offering a stand-alone presentation in the context of the 100 year conference series of the Museo de Historia Natural de San Marcos, Lima, Peru;
7. Attending and presenting a talk about ASG integrating amphibian conservation at the XIX Congreso Argentino de Herpetología, La Plata, Argentina;
8. Attending and presenting a talk about ASG integrating amphibian conservation at the ZSL Science & Conservation Symposium on Mitigating single pathogen and co-infections that threaten amphibian biodiversity, London, UK;
9. Presenting a talk about ASG and global amphibian conservation at the Universiti Brunei Darussalam, Brunei;


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10. Led by ASG Chile and supported by global ASG, assisting in the development of a Bi-national (Argentina & Chile) Conservation Strategy for Darwin's Frogs;
11. Supporting and providing input into various amphibian trade related requests, including those of three Scientific Authorities (Slovakia, Germany and Norway), the IUCN/TRAFFIC Analyses of the Proposals to Amend CITES Appendices, CITES COP18 Doc 62 and Doc 87;
12. In addition to the above, ASG was requested and provided over 15 letters of support for various grant opportunities;
13. Thanks to the generous financial and in-kind support of DZS, we will be able to employ two high level amphibian conservationists to lead the redevelopment of a new global amphibian conservation action plan in 2019-2021;
14. The ASG's Amphibian Red List Authority (ARLA) has focused on fundraising for the Second Global Amphibian Assessment, raising more than USD$ 700,000 in project funding for 2019-2020. Synchronicity Earth, Global Wildlife Conservation and the IUCN Species Survival Commission played a key role in securing these new funds, for which we are very grateful;
15. In addition, the ARLA has continued to work on the assessments of ongoing regional updates, submitting 640 assessments for publication to the Red List Unit;
16. Finally, thanks to newly raised ARLA project funds, workshops have been conducted for the amphibians of Honduras and China, with additional efforts devoted to the logistics and preparations required for regional updates taking place between July 2019-January 2020.

News from the ASA Secretariat

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Amphibian Diseases and Disease Mitigation

By Reid Harris

Emerging infectious diseases of amphibians are a major conservation concern, with chytridiomycosis being described as the leading disease threat to biodiversity across all taxonomic groups. Caused by two species of chytrid fungi (*Batrachochytrium dendrobatidis* [*Bd*] and *B. salamandrivorans* [*Bsal*]), these diseases have contributed to species extinctions and dramatic population declines. Indeed, a recent paper in the journal Science by Ben Scheele *et al*. (2019) summarized the available data and concluded that *Bd* has been responsible for idrastic declines in abundance of at least 501 amphibian species, including 90 presumed extinctions. While some species have been reported to recover, their population sizes tend to remain below historical averages, which can leave them vulnerable to other threats, such as extreme weather events. Other species never recovered.

Although *Bd* has been studied for almost two decades, *Bsal* has only recently been described. *Bsal* has decimated populations of the Fire Salamander (*Salamandra salamandra*) in Europe, and once it is found in a population, the population goes extinct. There is solid evidence that *Bsal* was vectored to Europe

through the pet trade. Some good news is that *Bsal* has not been found in North America despite extensive testing; however, laboratory tests have shown that all newt species in North America are likely to be lethally impacted by *Bsal*. Species in other salamander families were also lethally affected. Since North America is the biodiversity hotspot for salamanders, it is critical to have mitigation measures in place.

ASA has committed to finding solutions to mitigate the disease threat. A focus remains on probiotics as there is strong evidence that members of amphibians' cutaneous microbiota produce metabolites that inhibit *Bd* and *Bsal*. Importantly, probiotics can be added to amphibians with the aim of achieving a stable community of defensive microbes. Experimental laboratory tests and one field study demonstrated the utility of this method. Only locally-occurring microbes are used to limit the possibility of non-target effects in the ecosystem. It is important to note that ASA is open to all methods of disease mitigation and will consider supporting any appropriate method that achieves control of *Bd* and *Bsal*.

During this reporting period, I remained active with the North American *Bsal* Task Force, whose goal is to facilitate containment of *Bsal* should it arrive in North America. The Task Force's members come from academia, government agencies, the private sector, and NGOs. As a collaboration between ASA and the BAND Foundation, I wrote part of and led the completion of the North American Strategic Plan to Control Invasions of the Lethal Salamander Pathogen *Batrachochytrium salamandrivorans*, which was posted on SalamanderFungus.org during the reporting period. This document provides relevant background materials, input for all Working Groups on their key goals with budgets, and a Response Plan that covers multiple scenarios should *Bsal* be suspected in North America in the field or in captivity. Another important aspect of the Task Force is research into susceptibility of salamander species to *Bsal* and mitigation measures, which was supported by BAND and ASA. In addition, a group of researchers led by Dr. Matt Gray at the University of Tennessee (USA) submitted a multimillion US dollar grant proposal to the National Science Foundation (USA) to study *Bsal*. They acknowledged that their partnership with ASA, BAND and others gives them a competitive edge to receive the award. Indeed, this group was successful and received the multimillion dollar award in August, 2018.

Key Biodiversity Areas

By Penny Langhammer

The primary threat to amphibians is the loss and degradation of their habitats. Habitat protection is thus one of the most important tools we have to safeguard amphibian populations and reduce the risk of species extinction. Given limited resources for conservation, these efforts should be focused on sites of global significance for amphibian biodiversity. Since 2016, ASA has been an active member of the Key Biodiversity Areas (KBA) Partnership, a collaboration of thirteen international conservation organizations working to map, monitor and conserve the most important places for life on earth.

KBAs are identified according to a rigorous global standard endorsed by IUCN, which is applicable across taxonomic groups and in freshwater, terrestrial and marine biomes. More than 16,000 KBAs have been identified to date, but amphibians are poorly represented in this global network. The ASA Secretariat is working to change this by providing fundraising and technical support to ASA partners and other experts interested in identifying KBAs for amphibians and promoting their conservation. Over the past year, these efforts of ASA Partners have led to the protection of a number of globally important sites for amphibians, including Cerro Amay in Guatemala.

Arguably the highest priority subset of KBAs is those identified by the Alliance for Zero Extinction (AZE), sites containing Critically Endangered or Endangered species restricted to a single site globally. Unless properly

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conserved, AZE sites are places where species extinctions are highly likely, yet fewer than half are currently protected. In 2018 the Alliance published a global update of AZE sites. More than 40% of the 853 sites are triggered by amphibian species, the largest proportion of any taxonomic group. However, this effort began when only ~20% of amphibian species had been assessed or re-assessed as part of the second Global Amphibian Assessment. Since then, many more amphibian species have been re-assessed for the IUCN Red List, and all species will be re-assessed by 2020, which is likely to identify additional AZE species and sites.

With support from Synchronicity Earth, ASA in collaboration with the ASG Amphibian Red List Authority, is implementing a project to review and update as needed the AZE sites for amphibians based on the most recent IUCN Red List data, to ensure that all sites proposed in 2018 are confirmed as valid AZE sites (or else removed from the list, if they no longer qualify). We are obtaining expert review of every current and proposed new amphibian AZE site through targeted outreach to amphibian experts, and wherever possible, rolling in the review of AZE data into the Red List re-assessment workshop for a particular country or region.

ASA is working to advance several other priorities of the KBA Partnership. We contributed substantially to the development of the "Guidelines for Using a Global Standard for the Identification of Key Biodiversity Areas", published by IUCN in January 2019, through our role in co-chairing the KBA Technical Working Group. ASA is also helping to implement the Partnership's communications strategy, to further raise the profile of the importance of identifying, monitoring and conserving KBAs to governments, the private sector, local communities, and conservation organizations.

In the last year, ASA supported the campaign to save Ghana's Atewa Forest from bauxite mining through the creation of a national park. Atewa Forest is a critically important KBA for amphibians and other threatened species, including the Critically Endangered and endemic Togo Slippery Frog (*Conraua derooi*), and is a key water resource for local communities and millions of people downstream. We continue to support our local partners in this effort.


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Communications

By Candace Hansen-Hendrikx and Luis Fernando Marin da Fonte

The Amphibian Survival Alliance (ASA) and the IUCN SSC Amphibian Specialist Group (ASG) launched our new respective new websites, www.amphibians.org and www.iucn-amphibians.org in May, 2019. The ASA and ASG have shared the same domain, amphibians.org, since 2013. Originally ASG's home, the intent behind this was to show the close collaboration that exists between both groups. Over the years, however, we found that this was leading to some confusion regarding the identity and functions of both groups and was not serving our different audiences to the best of our ability. After a period of consultation with communications experts and website users, we decided to establish separate online homes for each group so as to better serve our respective audiences and to minimize confusion between ASA and ASG.

Manchester Metropolitan University, in collaboration with Chester Zoo and the ASA, held the Amphibian Conservation Research Symposium (ACRS) Manchester in April, 2019. ACRS is the only international symposium dedicated specifically to the sharing of research and strategies to empower the future of amphibian conservation. ACRS helps to bring together amphibian conservationists and researchers from around the world to gain experience, learn new ideas and make contacts. Since originally being held at the University of Manchester in 2012, ACRS has subsequently been hosted by the Natural History Museum London (2013), Zoological Society of London (2014), University of Cambridge (2015), North-West University in South Africa (2016) and the University of Kent (2017). ACRS brings together amphibian conservation researchers from all fields and backgrounds, including academics, veterinarians, field biologists and members of the zoo community. The meeting provided a platform to present a wide array of talks and posters covering evidence-based approaches and management strategies that promote amphibian conservation.

As part of ACRS, we awarded five Future Leaders of Amphibian Conservation scholarships. The awardees are in the early stages of their career and have evidence of contributing to successful conservation initiatives in the past, as well as wishing to conduct or continue with a particular conservation project or research agenda that will directly improve the survival of amphibians in the wild. The award provided them with a grant to attend and present at ACRS in that year, as well as on-going mentorship via the ACRS Steering Committee, and a community of Future Leaders alumni. It is our intention to provide Future Leaders with the tools to build a support network of experts, organizations and funders that will help them achieve their conservation goals and, most importantly, become the next generation of prominent researchers in amphibian conservation. This year's Future Leaders of Amphibian Conservation scholarships are awarded in memory of Dr. George B. Rabb (1930-2017), a great supporter of amphibians and all those who care for them.

In line our goal of providing our partners with access to the latest scientific guidance to inform amphibian conservation planning and action, we were proud to help support The Halliday Conservation Library. The reference lists in this library are compiled by Profes-

sor Phil Bishop (Amphibian Survival Alliance [ASA] Chief Scientist and IUCN SSC Amphibian Specialist Group [ASG] Co-chair) and his Research Assistant (Steven Evans) at the University of Otago, New Zealand, in the same spirit as Professor Tim Halliday's previous amphibian conservation lists. This is a joint project funded by the ASG, the ASA and the University of Otago. The lists contain as many papers as could be found, with links to the abstracts and publications (some of which are Open Access).

Together with the IUCN SSC Amphibian Specialist Group, we also took the opportunity to highlight Tim Halliday's tremendous contributions to amphibian conservation over the decades in a special edition of *FrogLog*,focusing on his achievements and passion for amphibians. What you saw inside those pages was a selection of perspectives from his friends and colleagues that capture what a fantastic champion Tim is for amphibians around the world. We also profiled Tim's incredibly beautiful amphibian-themed artwork throughout the special issue's pages. We felt it would be a wonderful tribute if Tim could see how much his efforts have meant to the conservation community, and how much he is continuing to inspire us all to do our best to make the world a better place for amphibians. Sadly Tim passed away from lymphoma on April 10, 2019, but not before he had a chance to see the impact he had on so many people.

The Bsal Task Force was initiated at an international workshop (June 2015) focusing on emerging management, policy and research implications of *Batrachochytrium salamandrivorans* infection of amphibians. Members include US State and Federal agencies, non-governmental organizations, research institutions, zoos, and the pet industry. The ASA, since the Task Force's inception, has continued to provide critical communications support by maintaining its website at SalamanderFungus.org.

The ASA has also been supporting our partners with many key communications outputs throughout the year, including important calls to action.

One such call to action was to raise awareness of a potentially destructive bauxite mine in the Atewa Forest – a globally important ecosystem that harbours extraordinary wildlife and provides water for 5 million people. If completed, the mine would destroy the forest – one of the world's Key Biodiversity Areas (KBA) and home to more than 100 globally threatened species. Designated as a Forest Reserve in 1926, the Atewa forest is also a critical water source, housing the headwaters of the Birim, Densu and Ayensu rivers, which provide water to local communities as well as millions of people downstream, including in the capital of Accra, Ghana. The ASA joined forces with the KBA Partnership, Synchronicity Earth, Global Wildlife Conservation, Save The Frogs! Ghana and others to call on the Government of Ghana to cancel this project and to stop the damage before it is too late.

We have also been busy this past year with publishing the *Frogress Report*. It has been bringing together updates from across the alliance to continue to develop a strong alliance, and to celebrate the incredible achievements being made regularly across the partnership. In addition, the *Frogress Report* has enabled the regular exchange of important information relevant to all of our partners, while also giving us with the opportunity to provide our partners (and the wider community) with progress updates.

In the Fall of 2018, we also contributed an article to the special edition of Zooquaria, the quarterly magazine of EAZA, which celebrated amphibian conservation. The article highlighed how collaboration and cooperation are key to the survival of amphibians.

In October 2018, we undertook a restructuring process on our social media channels which includes daily postings on both Facebook and Twitter. On Facebook, this has boosted our followers from a rate of approximately 600 new followers/year (2017/2018) to 1,200 new followers/year (2018/2019).

This year's most successful post on Facebook was a tribute to the 93rd anniversary of Sir David Attenborough. It has reached more than 53,000 people, had 4,000 interactions, was shared 350 times and liked by almost 300 people. Regular publications typically reach around 1,000-2,000 people daily and popular posts around 5,000 people.

By the end of June 2019, ASA had 11,900 followers on Facebook, 7,900 on Twitter and 2,450 on Instagram. English is historially the most common language of most of our followers (93% on Twitter, 57% on Facebook), with Spanish standing as the second language (12% on Twitter, 17% on Facebook). Even though most of our publications are in English, we have recently started to publish in other languages too (e.g. Spanish, French and Portuguese). By doing so, we are reaching a wider audience especially when publicizing opportunities (e.g. grants, courses, etc.) relevant to specific regions such as Latin America and Africa.

The main goal of our social media channels is to promote the amazing work our partners conduct around the globe. We also publicize relevant opportunities to our followers, such as grants, awards, courses, events, call for articles, etc. Additionally, we raise awareness about amphibians with our audience, publishing interesting stories that range from more scientific to more general approaches.

Over the last year, we have helped our partners publicize their work across our social media channels. One of the most successful stories that we have posted was Global Wildlife Conservation's (GWC) campaign focused on *Romeo, the World's Loneliest Frog*, which for more than ten years was believed to be the last individual of his species. We have also helped GWC spread the word about the fascinating rediscovery of other individuals in nature. In addition, we shared a crowdfunding campaign launched by our partner Durrell Wildlife Conservation Trust to create a SAFE haven from chytrid for the mountain chicken, a giant frog species found on only two Caribbean islands. We also publicized the creation of two new protected areas lead by our partner Rainforest Trust: one in Ghana (Onepone Endangered Species Refuge) together with our partner HerpGhana; and the other in Haiti, together with GWC and other local institutions. Finally, we helped promote events organized by our partners, such as the symposium "Mitigating single pathogen and co-infections that threaten amphibian biodiversity" organized by the Zoological Society of London.

Promoting dynamic, significant and inspiring communication outputs about amphibian conservation is at the heart of what we do. Ensuring this wealth of information is available to the amphibian conservation community helps us to coordinate and inspire our community to continue acting positively for the good of amphibians everywhere.

ASA Financials

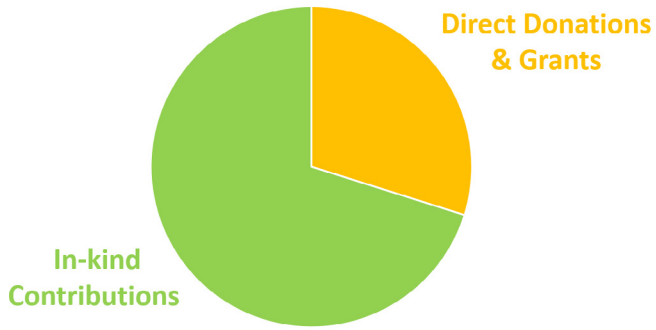
Molly Bletz

ASA Financials

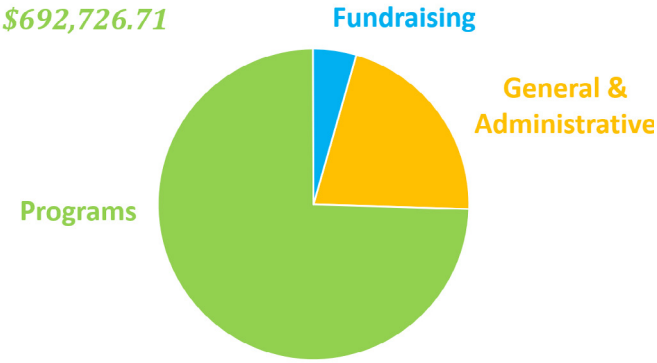
The core activities of the ASA Secretariat focus on: building the partnership; promoting collaboration and funding opportunities among partners; supporting development and dissemination of key knowledge resources; raising awareness of the work of our partners and other important amphibian stories; and helping to coordinate global efforts. During the 2019 Financial Year (1st July 2018 to 30th June 2019), we focused on delivering key strategic objectives, such as: reconstituting the ASA partnership; securing funding to establish ASA Conservation Grants and award Future Leaders of Amphibian Conservation scholarships; and continuing to address our priorities. These include: supporting the IUCN SSC Amphibian Specialist Group (ASG); contributing to the Key Biodiversity Areas partnership (KBA); promoting amphibian disease mitigation; and maintaining our communication channels to the highest possible standard. This has been achieved through core donations and in-kind support from ASA's generous partners, advisors and donors (please see pages 45-46 for all acknowledgements). We are sincerely grateful to the memory of Dr. George B. Rabb (1930-2017) – as a direct result of his generous donation to ASA we are able to award both ASA Conservation Grants and Future Leaders of Amphibian Conservation scholarships in his honour. This financial report reflects the core work of the ASA Secretariat and that of our chief advisors, ASG (including the Amphibian Red List Authority) and Amphibian Ark in relation to ASA's 2017-2021 strategic plan.

Since the 2018 financial year, we have successfully increased revenues and expanded expenses to reflect the momentum of our activities, and finish the year with a sizeable positive gain in net assets. We have made great strides towards building our team and resources, developing a collaborative and energized partnership, improving our communication channels, and building the mechanisms to disseminate more funding to amphibian conservation. In the 2020 financial year, we look forward to stepping up fundraising efforts for conservation action, supporting ASG in the development of a new Amphibian Conservation Action Plan (ACAP) to implement across the ASA partnership, and will continuing to work towards a globally and thematically representative partnership that can positively change the outlook for amphibians everywhere.

FY2019 REVENUES:
ASA & ASA Advisors
$847,780.87



FY2019 EXPENSES:
ASA & ASA Advisors
$692,726.71



Summary of ASA Secretariat Finances (FY2019)

REVENUES		
Direct Donations & Grants	$	356,691.75
In-kind Contributions	$	491,089.12
TOTAL REVENUE	**$**	**847,780.87**
EXPENSES		
General & Administrative	$	145,765.73
Programs	$	515,831.83
Fundraising	$	31,129.15
TOTAL EXPENSES	**$**	**692,726.71**
CHANGES IN NET ASSETS	**$**	**155,054.16**

Important notes on summary:
This table includes ASA's core activities and contributions directly related to ASA strategic priorities led and carried out by ASA's chief advisors, the IUCN SSC Amphibian Specialist Group (including the Amphibian Red List Authority) and Amphibian Ark. This also includes the leadership of ASA's role in the Key Biodiversity Areas Partnership, which is funded by Global Wildlife Conservation. This does not include additional relevant work carried out by ASA Partners. We gratefully acknowledge Global Wildlife Conservation and Synchronicity Earth as our Fiscal Sponsors.

2020 Financial Year Fundraising Priorities

- **ASA Conservation Grants:** ≥$20,000 in grants available to ASA partners to promote the development of amphibian conservation projects, funding ≥2 Emergency Grants and ≥4 Start-up Grants at $5,000 each, with additional support to raise project match funding, in collaboration with Amphibian Ark (FY2019 target achieved).

- **ASA Support to "Future Leaders in Amphibian Conservation:** ≤$10,000 in scholarships to attend the 2020 Amphibian Conservation Research Symposium (taking place at the 9th World Congress of Herpetology) for talented, early-career amphibian conservationists from developing countries (FY2019 target achieved).

- **Key Biodiversity Areas:** $43,000 for KBA secretariat costs and $300,000 for KBA site identification for amphibians in priority countries (in partnership with Global Wildlife Conservation).

- **Develop Amphibian Disease Mitigation Fund:** ≥$20,000 to initiate funding opportunities for amphibian disease mitigation research and/or practical trials.

- **Amphibian Conservation Planning Officer:** ≥$10,000 to help co-fund a position in the ASG Secretariat to update the Amphibian Conservation Action Plan and advise ASA on its implementation.

- **ASA & ASA Advisor core donations:** $219,933.52 (FY2019 target achieved)

- **ASA & ASA Advisor in-kind donations**: $779,503.51 (FY2019 target achieved)

- **Amphibian Fund:** ≥$1 million to continue building the Amphibian Fund in honour of Dr. George B. Rabb, working in partnership with Synchronicity Earth to develop an appropriate fundraising strategy.

Donor Acknowledgement

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We would like to offer our sincere thanks and appreciation to the following:

ASA DONORS

We would also like to thank Willem Ferwerda, David and Marvalee Wake, Osprey LLC, Anthol-Royalston Middle School and and all those who donated to the ASA online.

ASA IN-KIND CONTRIBUTIONS

amphibian ark®

ASG
IUCN SSC
Amphibian
Specialist Group

GLOBAL WILDLIFE CONSERVATION

ASA Fiscal Sponsor

SYNCHRONICITY EARTH

ASA Fiscal Sponsor

UNIVERSITY of OTAGO
Te Whare Wānanga o Otāgo
NEW ZEALAND

SAPERE AUDE

We are forever grateful to the memory of Dr. George B. Rabb (1930–2017) for his countless and generous contributions to ASA, in terms of donations, time, energy, and constant consideration.

We would not be here today without his dedicated support.

© Eric Isselee

Global Amphibian Assessment Update (GAA2) Donors

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KERING

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SEE FOUNDATION

IBAT

Global Council

Global Council

We sincerely thank the following members of the ASA Global Council for their diligent support throughout the year:

Claude Gascon - ASA GC Chair, Global Environment Facility

Simon Stuart – ASA GC Deputy Chair, Synchronicity Earth

Anne Baker – Amphibian Ark

Ariadne Angulo – IUCN SSC Amphibian Specialist Group

Mark Pilgrim – Chester Zoo

Onnie Byers – Conservation Planning Specialist Group

Ruth Marcec-Greaves – Detroit Zoological Society

Scott Carter – Detroit Zoological Society

Myfanwy Griffith – European Association of Zoos and Aquaria

Marco Cerezo – FUNDAECO

Wes Sechrest – Global Wildlife Conservation

Don Church – Global Wildlife Conservation

Paul Salaman – Rainforest Trust

James Lewis - Rainforest Trust

Brian Gratwicke – Smithsonian Conservation Biology Institute

Ben Tapley – Zoological Society of London

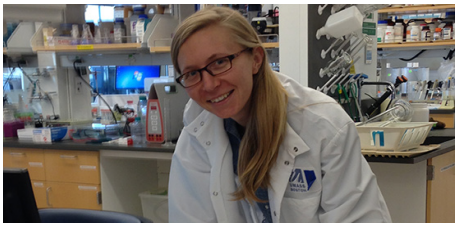
ASA Secretariat

ASA Secretariat

Dr. Helen Meredith
Executive Director

Candace Hansen-Hendrikx
Director of Operations

Prof. Phil Bishop
Chief Scientist



Dr. Molly Bletz
Director of International Disease Mitigation

Dr. Penny Langhammer
Director of Key Biodiversity Areas

Luis Fernando Marin da Fonte
Communications Intern

Nathan Yang
I.T. Director

Lindsay Renick Mayer
Senior Media Manager

Dr. Robin Moore
Conservation Officer

Prof Reid Harris
Science Advisor

ASA Partners

The following organisations and groups are recognized for their commitment to amphibian conservation:

Amphibian and Reptile Conservation Trust

Amphibian Ark

AmphibiaWeb

ANIMA MUNDI Adventures in Wildlife Photography

Asian Species Action Partnership

Association Mitsinjo

Auckland Zoo

Biodiversity and Development Institute

Carib-PARC

Chester Zoo

Conservación de Anfibios en Agroecosistemas

Conservation Evidence

Conservation Planning Specialist Group

Crees Foundation

Defenders of Wildlife

Detroit Zoological Society

Deutsche Gesellschaft für Herpetologie und Terrarienkunde

Durrell Wildlife Conservation Trust

Elgon Wildlife Conservation Organization

European Association of Zoos and Aquaria

Endangered Wildlife Trust

FAUNAM, AC.

Foundation for the Conservation of Salamanders

Froglife

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Frogs & Friends

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GRUPO RANA

Help Earth

Herpetological Society of Ireland

Instituto Curicaca

IUCN SSC Amphibian Specialist Group

Key Biodiversity Area Partnership

Key Conservation

Madagascar Fauna and Flora Group

Madagasikara Voakajy

Monitor

Nordens Ark

Rainforest Trust

RAVON

Reptile and Amphibian Program, Sierra Leone

Roger Tory Peterson Institute of Natural History

SAVE THE FROGS! Ghana

Sciences de la Vie et de l'Environnement, Université de Mahajanga

Smithsonian Conservation Biology Institute

Swedish Association of Zoological Parks and Aquaria

Synchronicity Earth

Taita Taveta Wildlife Forum

The Amphibian Foundation

Togolese Society for Nature Conservation

University of Kansas Biodiversity Institute

Whitley Wildlife Conservation Trust

Wildlife Trust of India

Zoo Frankfurt

Zoological Society of London

Zoos Victoria