amphibian survival alliance



The Amphibian Survival Alliance would like to give special to thanks the following organizations and individuals:















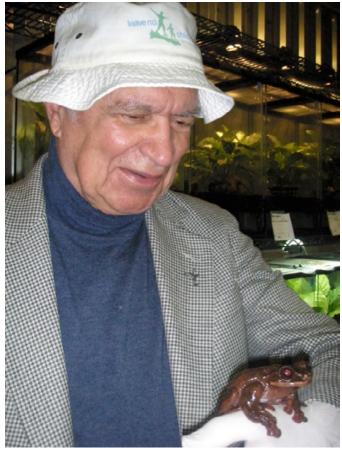














This report and the work of ASA is dedicated to the memory of Dr. George B. Rabb (1930-2017).





Table of Contents

Acronyms and Abbreviations	4
A Message from the Amphibian Survival Alliance	5
Introduction	6
News from the ASA Partnership Durrell Wildlife Conservation Trust Madagascar Fauna and Flora Group Detroit Zoological Society Defenders of Wildlife Endangered Wildlife Trust Global Wildlife Conservation Rainforest Trust Reptile, Amphibian and Fish Conservation the Netherlands Synchronicity Earth Zoological Society of London	8
News from the ASA Secretariat General Amphibian Diseases and Disease Mitigation Key Biodiversity Areas Communications	25
News from ASA Advisors Amphibian Ark IUCN SSC Amphibian Specialist Group	31
Annual expenditure	34
Donor acknowledgment	37
Global Council	39
ASA Secretariat	40
ASA Partners	/ ₁ 1





Acronyms and Abbreviations

Amphibian Ark AArk

Amphibian Red List Authority ARLA

Amphibian Specialist Group ASG

Amphibian Survival Alliance ASA

Amphibian Survival Alliance Global Council ASA GC

Conservation Planning Specialist Group CPSG

Durrell Wildlife Conservation Trust Durrell

European Association of Zoos and Aquaria EAZA

Endangered Wildlife Trust EWT

Global Wildlife Conservation GWC

Key Biodiversity Areas KBA

Madagascar Flora and Fauna MFG

Rainforest Trust RT

Reptile, Amphibian and Fish Conservation the Netherlands RAVON

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) launched in 2011, and has since built a global alliance of partners dedicated to developing a better world for amphibians through coordinated conservation action. ASA promotes and coordinates the implementation of conservation actions for amphibians through an active, growing, engaged, committed and collaborative partnership around the world. The great need for this endeavour is reflected in the rate of loss of amphibian populations globally, and we face a challenging future as we strive to reverse these trajectories.

The ASA has been going through a restructuring period since 2016, having first developed a strategic plan for 2017—2021 to help guide ASA's actions in this timeframe. Using the ASA strategic plan as a foundation, we have continued on this re-structuring route in 2017—2018, working to strengthen both governance and partnership foundations. ASA is now poised to start a new and revitalized period, with solid governance processes in place and with the ability to grow the partnership in an informed, strategic and targeted way.

In addition, this year has seen a change in the relationship between ASA and the IUCN SSC Amphibian Specialist Group (ASG) and Amphibian Ark (AArk). ASA has always had a close relationship with these two globally scoped amphibian networks, but this year has cemented that relationship further in formally appointing both networks as ASA Advisors in the new ASA governance structure. This new structure better reflects how the respective networks relate to and support each other. The new relationship between ASA, ASG and AArk is further reflected in the development of a shared vision: Amphibians thriving in nature.

Moving forward, it is our hope that the ASA can further catalyze internal collaborations within the partnership, but also externally, with the ability to bring in new partners complements whose expertise enhances that of the existing partnership and can bring innovation and additional positive change to amphibian conservation. The pages of this report detail some of the remarkable variety and energy of our partners' responses to the amphibian decline crisis. It is our honour and privilege to shine a light on these endeavours, and we will undoubtedly continue to find and support new partners to strengthen this alliance over time.

This annual report is dedicated to the memory of Dr. George B. Rabb (1930–2017), our mentor, colleague, and staunchest supporter. It is fair to say that without George there would be no ASA. It is our duty—thanks to George's inspiration—to continue his legacy in the conservation of the world's amphibians and their habitats..

Ariadne Angulo, PhD

Interim Executive Director, Amphibian Survival Alliance (2017–18 maternity cover)

Helen Meredith, PhD

Executive Director, Amphibian Survival Alliance





Introduction

Established in 2011, the Amphibian Survival Alliance (ASA) is a global partnership of organizations, groups and institutions working to address the worldwide amphibian decline and extinction crisis through implementation of targeted research and conservation actions for amphibians and their habitats. As an alliance, ASA promotes and coordinates the implementation of amphibian conservation actions through an active, engaged and committed partnership. ASA works very closely with key coordinating bodies in global amphibian conservation and ASA Advisors, the IUCN SSC Amphibian Specialist Group (ASG) and Amphibian Ark (AArk), to achieve the shared vision of amphibians thriving in nature. In order to help inform its actions, ASA uses the Amphibian Conservation Action Plan (ACAP) as a road map for global amphibian conservation.

ASA comprises three bodies: the ASA Global Council (GC, who oversee the governance of the ASA), the ASA Secretariat (staff), and the ASA Partners. This annual report is structured so as to clearly identify the activities that have been carried out by the ASA Partners, those that have been undertaken by the ASA Secretariat, and those by the ASA Advisors. The ASA Partnership section highlights the activities of some of the ASA partners and it is our hope that, moving forward, this will be an opportunity to showcase different partners each year. Each partner summary clearly identifies 1–2 focal points for that particular organization, in the event that other partners across the partnership would like to enquire further about any of the content in the summary.









The ASA partnership is a vibrant and active community of more than 100 organizational or group-level partners working to advance amphibian conservation throughout the world. Every year, the ASA will highlight the amphibian work of different ASA partners. Please browse the pages that follow to see how this year's highlighted ASA partners are making a difference in amphibian conservation. We start with two partners that ASA has been working with through two grants, and then continue in alphabetical order.



Durrell Wildlife Conservation Trust

By Jeff Dawson

Durrell's amphibian conservation work focuses

Ourrell's amphibian conservation work focuses

on a combination of both

in situ and ex situ ap-

proaches, as well as capacity building and science. In 2016 ASA, Durrell and ASG Madagascar initiated the implementation of the Critical Ecosystem Partnership Fund (CEPF) project "Building a Future for the Amphibians of Madagascar." This is the second year of the three year project, whose overall goal is to strengthen national coordination of amphibian conservation in Madagascar and help implement of the New Sahonagasy Action Plan (NSAP). This work is led by Amphibian Programme Lead Tsanta Rakotonanahary, and Amphibian Programme Officer Serge Ndriantsoa.

Building the capacity of project staff to ensure they have the skills and knowledge to deliver project goals is a key component. To this end, Personal Development Plans, training in GIS and technical and financial reporting have been supported by Durrell's Amphibian Programme Manager (APM) and Durrell's field staff, with the APM mentoring project staff regularly. To help ensure the NSAP can be effectively implemented requires engagement and support from Malagasy society, from local communities, private sector and government agencies. The project is working toward this through regular reporting to government and developing and working with collaborative networks in Madagascar. A key existing network is the Chytrid Emergency Cell (CEC), which the project has been supporting through coordinating the annual national







monitoring programme, organizing export permits, assisting and facilitating visiting chytrid researchers and preparing protocol and emergency response documents. A network is being developed for Malagasy organizations engaged in amphibian survey and monitoring to bring groups together to share knowledge and experiences, help build capacity and offer advice; identify grant and funding opportunities, and provide a platform to share information. To date, five groups have expressed interest in such a network and assistance given in preparing funding applications. In addition, staff are identifying groups to develop an amphibian education program to build in-country awareness and knowledge of their unique amphibian fauna.

A priority Key Biodiversity Area for CEPF is Manjakatompo-Ankaratra Protected Area, home to two site-endemic Critically Endangered frogs. A component of the project led by Durrell focusses on developing institutional capacity of the protected area

managing organization, Vondrona Ivon'ny Fampandrosoana (VIF). July 2017 saw the final report for the organizational assessment of VIF, including recommendations for training and development being completed and approved. Implementation of these was initiated soon afterwards with VIF's Director participating in a 5-day Management and Leadership Course in Mauritius. In December 2017 and January 2018 two knowledge exchange trips to Alaotra and Ankarafantsika Protected Areas for key VIF personnel and the heads of the local patrol associations at Ankaratra were undertaken to observe protected area management activities at other sites and to help inform options for strengthening activities at Ankaratra. Finally, a project brief has been produced to help secure funding to keep the two positions in place and continue activities beyond the project duration. To this end, project staff are establishing a registered association to enable future receipt of funds for the project.







FADINA AND THOMAS GROUP HOUSE TO SHOULD BE SHO

Madagascar Fauna and Flora Group (MFG), Madagascar



By Karen Freeman

MFG received a one-year ASA grant in early 2018 to set up an exclusion zone around Parc Ivoloina in eastern Madagascar to protect endemic amphibians from the threat of the highly invasive and toxic Asian Common Toad (Duttaphyrnus melanostictus). Work on the project began immediately, with the appointment of Project Coordinator Roderic Mahasoa, who is among the few people with extensive experience working with this invasive species in Madagascar. Roderic is a keen herpetologist, has project management experience, and good working relationships with local authorities responsible for overseeing conservation of the Toamasina region.

A detailed budget including all project equipment, travel expenses and salaries, as well as research for procurement of equipment have been undertaken. Where possible, equipment has been borrowed from MFG to reduce costs, and remaining required equipment is currently being purchased.

In order to build local capacity to respond to invasive species threats and to leverage project support, we have sought a partnership with the Higher Institute for Science, the Environment and Sustainable Development (ISSEDD) at the University of Toamasina to appoint 10 eco-volunteers to help with multiple aspects of the project, including fine-scale surveys to assess the Asian





Common Toad's current distribution around Parc Ivoloina (interviewing local people and carrying out direct observational surveys), installing the exclusion zone barrier around the periphery of the park and helping with research aspects of the project to better understand the toad's ecology. This collaboration has been approved by the director of ISSEDD, the call for applications has been posted and interviews will be conducted to select the 10 successful candidates in the first week of June, with related work due to begin immediately after.

Official authorization and support for the project has been granted by the regional authorities from the Ministry of the En-

vironment, Ecology and Forests (MEEF), which means that field surveys and outreach activities can now be initiated. At the national ministerial level the project has also received strong support: the directors of Fauna and of Invasive Species for MEEF came to Toamasina specifically to visit the proposed exclusion site and learn more about the project. Surveys will take approximately three weeks to complete with the help of the chosen eco-volunteers and MEEF personnel. Installation of the exclusion zone barrier will commence as soon as the detailed distribution data are available.

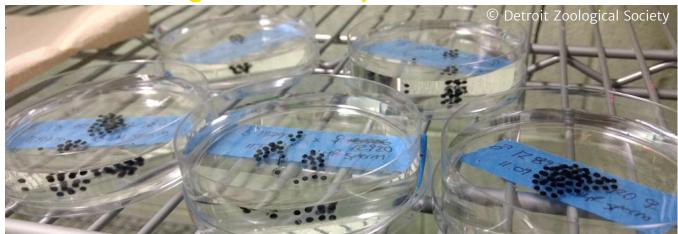








Detroit Zoological Society



By Ruth Marcec-Greaves

The Detroit Zoological Society (DZS) is committed to the conservation of amphibians through programs at its National Amphibian Conservation Center (NACC). Over the last year, DZS has continued efforts locally and globally and started new endeavours to protect amphibians. Below are highlights of DZS work within the last year.

Breeding Programs

In the context of the Dusky Gopher Frog Species Survival Plan, Association of Zoos and Aquaria (AZA) institutions involved in Dusky Gopher Frog conservation are making a concerted effort to release large numbers of offspring in the fall of 2018. DZS was recruited by the Species Survival Plan to travel to other AZA institutions to assist in the in vitro fertilization of this species.

Local Population Monitoring

DZS continues to monitor populations of the common mudpuppy in the Detroit River surrounding Belle Isle and has also initiated efforts to monitor terrestrial salamanders in the Detroit Metro area.

Global Conservation

Honduras: DZS has partnered with the Honduras Amphibian Rescue and Conservation Center (HARCC) to help promote local conservation efforts in Honduras. In May 2018,

Dr. Ruth Marcec-Greaves, director of the NACC, visited the HARCC facilities to ensure they are ready to provide the utmost welfare and biosecurity for animals, with head starting planned for fall of 2018.

Panama: DZS has supported Project Golden Frog and El Valle Amphibian Conservation Center (EVACC) since its inception. In August 2017, DZS staff travelled to EVACC to assist with husbandry and facility maintenance, as well as preparations for EVACC's move to a new facility.

Peru: In November 2017 and April 2018, staff from the NACC travelled to the Napo valley region along the Amazon in Peru to survey species for general population numbers and swab for chytridiomycosis.

Education and Outreach

DZS hosts and coordinates the AZA Taxon Advisory Group Amphibian Management School biannually. The week-long course trains AZA and government employees on amphibian husbandry and conservation management strategies.

In addition, DZS leads the following citizen science initiatives:

Peru: The Amphibian Protectors Club is an ongoing citizen science program with the high school students in the Amazonian vil-





lage of Llachapa. Students in the club go out and look for amphibians once a week and document their findings. DZS staff meet with the club twice a year, where student logs are reviewed, and the students go with staff into the field to help test amphibians for diseases.

Michigan, USA: The DZS FrogWatch chapter is extremely popular. Courses are offered throughout the spring at the zoo, and at off-campus sites. Zoo experts teach local citizens to survey for frogs by listening in a location of their choice.

Salamander grant, USA: NACC Director Dr. Ruth Marcec-Greaves is a co-primary investigator on an Institute of Museum and Library Sciences grant for improving reproductive technologies, such as sperm cryopreservation, in endangered salamanders. In spring 2018, she trained several graduate students in these technologies and will continue to train and mentor students on this grant until its completion.









Defenders of Wildlife



By Alejandra Goyenechea

Defenders of Wildlife (Defenders) focuses its amphibian conservation efforts on international trade policy and advocacy. In July 2017 at the CITES Animals Committee (AC), Defenders submitted, under the Species Survival Network, a factsheet on international amphibian trade for the top species allegedly traded with codes C (Captive) and R (Ranched), in relation to agenda item 14 on "captive-bred and ranched specimens." The report analyzed data contained in the CITES Trade Database for trade in captive-bred, farmed, or ranched amphibians from 2012-2015. The database described the trade of almost 200,000 captive-bred (C), farmed (F), confiscated (I), pre-convention (O), or ranched (R) amphibians for all purposes. Panama and Nicaragua were common exporters, while North American and European countries such as Canada, the United States and the Netherlands, were common importers. Canada and the United States were heavily involved in both import and export for commercial purposes.

Defenders participated as an observer

in both the Animals Committee and the Standing Committee to advocate for a review of alleged captive-bred trade in amphibians and participated in related working groups.

For the July 2018 CITES AC meeting, Defenders is reviewing new documents presented for AC 30 on the review of countries exporting amphibians sourced from captivity or farmed. Defenders, in collaboration with experts on *Dendrobates*, has analyzed the international trade and prepared a fact sheet and informed the EU Scientific Committee for their consideration in their discussions for positions in the AC. Defenders will make available the factsheet on *Dendrobates* trade and on the claimed trade from captive-breeding facilities.







Endangered Wildlife Trust

By Jeanne Tarrant

The Endangered Wildlife Trust, through its Threatened Amphibian Program (TAP), is the only NGO operating in South Africa with frogs as a conservation focus. Using threatened South African frog species as flagships for the conservation of important freshwater and terrestrial habitats, we implement species and habitat monitoring; initiate habitat protection strategies at important amphibian areas; improve management of important amphibian habitat; use research to support conservation action; and promote social change to galvanize behavioural change toward frogs and recognition of the importance of their habitats in South Africa...and beyond!

TAP aims to:

- Elevate the conservation importance of frogs and their freshwater and terrestri– al habitats within southern Africa;
- Bridge the gap between research and on-the-ground conservation action by supporting and implementing relevant research projects;
- Implement conservation actions that align with global amphibian conservation goals (ACAP);
- Drive social change to promote behaviours that support sustainable natural resource use to the benefit of amphibians and their habitats.

Our projects focus on four of South Africa's threatened frog species, including the Criti-







cally Endangered Amathole Toad (Vandijko-phrynus amatolicus), the Endangered Pickersgill's Reed Frog (Hyperolius pickersgilli), Endangered Mistbelt Chirping Frog (Anhydrophryne ngongoniensis) and Endangered Kloof Frog (Natalobatrachus bonebergi). We also provide input into a project on the Endangered Western Leopard Toad (Sclerophrys pantherina).

2017-2018 highlights

Conservation Planning:

We developed and co-authored the first government-recognized conservation plan for a threatened frog in South Africa – the Biodiversity Management Plan (BMP) for Pickersgill's Reed Frog was gazetted in June 2017 and the first forum meeting for this was held on 20 April 2018. The forum was established as part of meeting the objectives of the BMP, and for partners to report back on progress toward implementation of the BMP.



Habitat rehabilitation:

Between 2016 and 2018, we implemented a project that cleared alien invasive plants and rehabilitated approximately 1,000 hectares of land at four priority coastal wetlands in Durban where the Endangered Pickersgill's Reed Frog occurs, in the process creating employment for 72 local community members.

Awareness and Outreach:

- World Wetlands Day, 2 February 2018

 We engaged more than 500 students about frogs and wetlands as part of several events held for World Wetlands Day 2018.
- We coordinated the 5th national awareness day for frogs on 28th February. The campaign this year was "Go Green for Frogs," and encouraged schools and organizations to dress in green. More than 20 events were held country-wide, with more than 6,000 people participating. Social media reach exceeded 30,000.
- We conducted extensive surveys to assess the impact of our social change work and school/community engagements.

Habitat protection:

- We are in the process of helping facilitate the creation of the first formally protected area for the Critically Endangered Amathole Toad. In March 2018, Glenara Farm (2,700 acres) in the Eastern Cape, where the species occurs, qualified as a Nature Reserve under the Biodiversity Stewardship process, which is used in South Africa to proclaim privately or communally owned land for conservation.
- We are working with the Makhanya Tribal Authority in Adam's Mission, south of Durban, to protect 800 acres of coastal wetland and swamp forest for the Endangered Pickersgill's Reed Frog and Kloof Frog.







Global Wildlife Conservation (GWC)



By Lindsay Renick Mayer & Barney Long

Amphibian conservation is among the highest priorities for Global Wildlife Conservation (GWC), an ASA partner 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 2017 and June 2018 include:

The Global Amphibian Assessment

GWC supports projects and initiatives that feed into the IUCN Red List for numerous groups of species, including the Global Amphibian Assessment update, run by the Amphibian Red List Authority (ARLA) of the IUCN SSC Amphibian Specialist Group (ASG). GWC's support ensures that current extinction risk assessments are available to the global conservation community. The 2017 IUCN Red List amphibian update, supported by GWC, found, for example, that

13 years after it was classified as Critically Endangered, the stunning Black-eyed Leaf Frog (Agalychnis moreletii) from Mexico and the Neotropics is now recovering, is more resilient than previously thought, and of Least Concern.

The rediscovery of Jackson's Climbing Salamander (Bolitoglossa jacksoni) as part of GWC's Search for Lost Species program

The status of Jackson's Climbing Salamander was unknown since its discovery in 1975 in Guatemala and Data Deficient on the IUCN Red List. In October 2017, a park guard trained to look for the species found a single individual months before an organized expedition to Guatemala's Cuchumatanes Mountain range to look for this species. The rediscovery was possible in part because a group of organizations, including GWC, established the Yal Yunin Yul Witz Amphibian Reserve in 2015. On the heels of the news of this rediscovery, GWC raised more than \$44,000 to expand the reserve and protect more habitat for the Jackson's Climbing Salamander, two other rediscovered salamanders, and an entire community of rare and endemic Guatemalan wildlife.





Finding a mate for Romeo, the world's lone-liest frog

In February 2018, GWC teamed up with the Museo de Historia Natural Alcide d'Orbigny in Bolivia and Match, the world's largest relationship company, to find a mate for Romeo, the sole known live Sehuencas Water Frog (*Telmatobius yuracare*). Romeo was collected in the wild in Bolivia more than 10 years ago and since then, no further individuals of this species have been found despite targeted surveys. Together GWC, Match and the museum raised \$25,000 in

this Valentine's Day campaign to send 10 expeditions to localities where the species was once common, and also to places with similar habitat where biologists have not had a chance to look before. The aim of these expeditions will be to find a mate for Romeo and other individuals to start a conservation breeding program for the species. This exceeded the campaign's initial fundraising goal of \$15,000. The amphibian bachelor even had his own Match. com dating profile and dating video.









Rainforest Trust (RT)



By Paul Salaman

For 30 years, Rainforest Trust (RT) has been dedicated to the protection of critical habitat for the world's most threatened species. In 2017, the number of acres that Rainforest Trust has helped to protect increased by more than 1.3 million, bringing the current total to more than 18 million acres. This included 22 protected areas in 13 countries across Africa, Asia, Latin America, and Oceania. Amphibians have always been a priority for Rainforest Trust, and several key amphibian areas saw increased protection due to the organization's involvement in 2017.

Key amphibian sites protected this past year include Caloola Nature Refuge and Daintree National Park in Australia, Cerro Amay in Guatemala, Cerro Chucantí Private Nature Reserve in Panama, El Dorado Bird Reserve in Colombia, and Río Canandé and Tapichalaca Reserves in Ecuador. All of these protected areas play key roles in preventing the loss of critical habitat for threatened amphibians.

As a dedicated member of the IUCN, RT also provided funding to support the amphibian update on the IUCN Red List of Threatened Species, supporting the assessment or reassessment of more than 1,000 species in collaboration with ASA partners Global Wildlife Conservation (GWC), Synchronicity Earth (SE), and IUCN.

In addition, RT joined the Key Biodiversity Areas (KBA) Partnership alongside the ASA in 2017. Through this partnership, RT intends to contribute to conservation efforts for species that are often overlooked by other conservation campaigns. Safeguarding unprotected KBA sites for range-restricted species is a priority for RT, so joining the KBA Partnership and supporting the IUCN Red List will facilitate the identification, protection, and monitoring of many more critical sites for amphibians.

Collaborative initiatives such as the KBA Partnership and Red List assessments help to provide the scientific underpinning for global priority setting. However, this information alone does not indicate the





suitability of a site for protected area establishment. To help inform these conservation strategies, RT provides Rapid Feasibility Awards to organizations that aim to explore the potential for protected area creation within a priority site. These awards support critical research, community and government consultations, and land tenure assessments, among other objectives. In 2017, RT distributed more than \$120,000 to support 22 feasibility assessments across the globe, most involving threatened amphibians. Many of the studies funded have led to protected area establishment projects with RT's support.

2017 was a significant year, but there is much more to come. RT and partners are currently working to protect an additional 19 million acres throughout the tropics and subtropics. Many of these acres will secure critical habitat for threatened amphibians, including the Amathole Toad (Vandijkophrynus amatolicus) and Pickersgill's Reed Frog (Hyperolius pickersgilli) in South Africa, Cardioglossa manengouba and C. trifasciata on Mount Manengouba, Mantella viridis in Madagascar, numerous Eleutherodactylus species in Haiti, and the Busuanga Wart Frog (Limnonectes acanthi) and the Palawan Horned Frog (Megophrys ligavae) in the Philippines.









RAVON

By Raymond Creemers & Annemarieke Spitzen

RAVON (Reptile, Amphibian and Fish Conservation the Netherlands) is an NGO concerned with the conservation of reptiles, amphibians and freshwater fish in the Netherlands. Together with many volunteers, we collect data, analyze them and use best conservation practices to work toward increasing the number of sustainable populations of these species groups.

The national monitoring scheme for amphibians started in 1997, and provides a reliable and long-term national trend for all amphibian species. One of the highlights is the spectacular recovery of the endangered European Treefrog (Hyla arborea), where habitat management in agricultural areas allowed the species to recover and thrive. To increase the number of records in agricultural areas and allow for better monitoring of the effects of habitat restoration we have setup a new monitoring scheme, in which we actively seek collaboration with farmers and landowners. The national monitoring scheme shows a 99.9 percent population decrease for the Fire Salamander (Salamandra salamandra) in the Netherlands. The introduction of the invasive chytrid fungus Batrachochytrium salamandrivorans (Bsal) has nearly extirpated the species in our country. The discovery of *Bsal* provides a unique opportunity to monitor spread and prevalence as well as the in situ effect on native salamanders and newts. RAVON also conducts research on the effects of other amphibian diseases, such as ranaviruses and Amphibiocystidium on in situ populations.

The monitoring and control of alien invasive amphibian species is another key issue of our work. The new EU directives concerning alien invasive species aim at controlling invasive species such as the Amer-

ican Bullfrog (*Lithobates catesbeianus*). At the end of 2018 we hope to confirm the successful elimination of the last remaining bullfrog population in the Netherlands. The last confirmed records — after a successful eradication programme — date from 2014. Currently a similar initiative is undertaken to control populations of Italian Crested Newts (*Triturus carnifex*), who hybridize with native Northern Crested Newts (*T. cristatus*), an EU directive species.









Synchronicity Earth (SE)



By Simon Stuart

Scientists now believe that more than 40 percent of amphibian species are globally threatened. They are often invisible within an ecosystem, however they have an astonishing beauty and variety and can be an important indicator for the health of ecosystems.

Amphibians face increasing threats from habitat loss, disease and climate change, yet receive little attention and funding for conservation. To address this, the Amphibian Survival Alliance (ASA) was launched in 2011, and has since built a global partnership for coordinated conservation action.

Synchronicity Earth has supported the ASA from these early days because we consider it to be the most strategic way to combat amphibian extinctions. We have prioritised funding the core operations of the ASA and one of our team, Dr. Helen Meredith, is the Executive Director.

Our focus is very much on helping to build new conservation alliances to address gaps in the overall conservation effort, and the ASA is an excellent example of this strategy.





Highlights

ASA Strategic Planning meeting:

In June of 2017 the ASA Global Council Meeting took place in Canterbury (United Kingdom) to move forward its 5-year Strategic Plan. Synchronicity Earth supported the ASA by providing funding and operational support for the conference. One of the priority action points to come out of the meeting was development of a tracking tool for amphibian conservation planning and action.

Amphibian Fund in Honour of Dr. George B. Rabb:

In late July 2017, we received the very sad news that the man widely considered as the founding father of amphibian conservation, Dr. George Rabb, had passed away. Just a few weeks before

this, George had agreed with Adam Sweidan (Founding Trustee and Chair of Synchronicity Earth) that we could establish an Amphibian Fund in his honour. Find out more on our website.

IUCN SSC Amphibian Red List Authority (ARLA)

Synchronicity Earth is further showing its commitment by funding and contributing staff time to complete the Second Global Amphibian Assessment (GAA2). This is an initiative led by the IUCN SSC Amphibian Red List Authority (ARLA), which updates the conservation status of all amphibians on the IUCN Red List of Threatened Species (IUCN Red List). The support of Synchronicity Earth to ARLA has enabled 221



new and updated species assessments to be published for the six priority regions of Chile, Colombia, Ecuador, Madagascar, Panama, and West and Central Africa. A total of 1,051 amphibian species are under review with Synchronicity Earth's support.







Zoological Society of London (ZSL)

By Benjamin Tapley

ZSL's Amphibian Thematic Group has been engaged in various projects in 2017-2018. Key results from a Darwin Initiative funded project on Chinese Giant Salamanders were recently published, revealing that: 1) the world's largest amphibian is extremely depleted or functionally extinct across vast surveyed areas of its natural range; and 2) the Chinese Giant Salamander appears to harbour at least five distinct genetic lineages, some of which are now exceedingly rare and possibly already extinct in the wild. Four EDGE Fellows (http://www.edgeofexistence.org/amphibians/) were involved in this work and five early career conservationists supported through EDGE Fellowships are working on the purple frog (Nasikabatrachus sahyadrensis—India), Madagascar Frog (Mantidactylus pauliani – Madagascar), Granular Salamander (Ambystoma granulosum-Mexico), El Rincón Stream Frog (*Pleurodema somuncurense*—Argentina) and Botsford's Leaf-litter Frog (Leptolalax botsfordi-Vietnam). EDGE rankings for amphibians were also updated since 2012.

ZSL staff members, in partnership with various entities, have also been involved in several publications, most notably: 1) a long-term study published in Science identifying Asia as the hotspot for all chytrid fungi that infect amphibians and the point of origin of the global pandemic Batrachochytrium dendrobatidis (Bd) and how variants are circulating in the global amphibian trade, calling for increased biosecurity in trade to help curtail the spread of these pathogens; 2) research on the open source method for isolating chytrid fungi while minimizing impacts on wild amphibian populations; 3) a

study showing that chytridomycosis outbreak dynamics are linked with host skin bacterial community structure; 4) research on the impact of persistent ranavirosis on (decreased) diversity of the skin bacterial community in UK populations of common frogs; and 5) a study that evaluated the disparity between species description and conservation assessment on the IUCN Red List of Threatened Species, using amphibians as a case study due to high rates of species discovery in the group. Currently more than 61 percent of amphibian species are either Not Evaluated or have out-of-date IUCN Red List assessments.

In addition, ZSL jointly hosted a two-day amphibian welfare workshop with The National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs), where experts from academic institutions, laboratories and zoo communities from all over the world came together to discuss and help improve conditions for amphibians in research, and take initial steps in establishing common principles for their housing and care.









General

By Ariadne Angulo

This year the ASA Secretariat has been working diligently to re-structure the ASA's governance and establish new standards to engage and recruit ASA partners. Following the development of ASA's 2017–2021 Strategic Plan in 2016, we have been building upon the solid foundation established by the Strategic Plan. Together with the ASA Global Council, ASA staff have developed a new set of By-laws that better characterize the organization that ASA has become. Formally adopted by the ASA Partnership on 1 June 2018, the new By-laws will make ASA more democratic, more accountable to its partners, and more fit-for-purpose in addressing the challenges of amphibian conservation.

Subsequent to adoption of the By-laws, ASA partners were invited to renew their commitment to the ASA by completing a tailored online Partner Review/Application Form, a process that will continue until October 2018. At the same time, new prospective partners are also being invited to join the ASA. This is a key development, since until now there had not been a formally standardized process to admit organizations to the ASA, and we believe that it is important that organizations and groups fully comprehend their rights and obligations. This makes the ASA partnership admission process both more transparent and accountable.

The ASA Secretariat has also been working on the development of an ACAP Tracking Tool to track the implementation of the various priorities identified in ACAP, and with the support of the ASG Secretariat, consulted a draft version of the tracking tool with the Chairs of ACAP Working Groups. There was considerable feedback provided on the latest draft and in this light, ASA as

well as the ASA Advisors will be discussing further how to proceed with the development of the tool.

In addition to ASA governance matters, ASA staff have been working through the ASA priorities of Emerging Infectious Diseases, Key Biodiversity Areas (included within the overarching priority of "Conservation Information and Planning") and Communications (included within the priority of "Communication and Education"), which we detail below. The ASA Secretariat has also supported a project to implement amphibian conservation actions in Madagascar (see page 8) and an invasive species project, also in Madagascar (see page 10).





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. 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. It is important to note that ASA

is open to all methods of disease mitigation and will support methods that achieve control of *Bd* and *Bsal*.

ASA has partnered with the BAND Foundation to focus on *Bsal* during this reporting period. As part of the collaboration, I am lead co-chair of the North American Bsal Task Force, whose goal is to have a response and containment plan in place if and when Bsal arrives in North America. I chaired monthly meetings with Working Group facilitators and guided the group toward the writing of a comprehensive Strategic Plan, including a Response Plan that can be customized by management agencies. The Response Plan is complete and posted on www.salamanderfungus.org. Another important aspect of the Task Force is research into susceptibility of salamander species and mitigation measures, which is supported by BAND and ASA. A group of researchers received a multimillion dollar grant from the National Science Foundation to study Bsal. They acknowledge that their partnership with ASA, BAND and others gave them a competitive edge to receive the award. The Strategic Plan includes working group budgets and will be used to seek additional funding. A target date for completion of the Strategic Plan is September 1, 2018.

Since *Bsal* has not been detected in North America, it may be possible to prevent its entry with strict hygiene measures for all imported amphibians. As part of our collaboration with BAND, ASA worked with an environmental attorney who specializes in invasive species, Peter Jenkins, and others toward policy solutions to keep the *Bsal* pathogen out of North America.





Key Biodiversity Areas (KBAs)

By Penny Langhammer

The destruction, degradation, and fragmentation of natural habitats are the greatest threats impacting amphibians worldwide. Knowing precisely which are the most important sites to conserve is crucial to preventing further extinctions and ensuring the long-term survival of amphibian populations.

The identification and safeguard of <u>Key Biodiversity Areas</u> (KBAs)—sites contributing significantly to the global persistence of biodiversity—is a strategic priority for the ASA, who is a founding member of the Key Biodiversity Areas Partnership, formed in 2016 by 12 of the world's leading international conservation organizations to map, monitor and conserve the most important places for life on Earth.

As part of this Partnership, ASA is working to ensure that significant areas for threatened amphibians are identified and prioritized for protection through inclusive, nationally led processes. ASA is also working to disseminate vital information on important sites for amphibians to multiple audiences and to promote investment in the protection of these sites with key partners. Such efforts of ASA Partners have led to the protection of critical sites for threatened amphibians, including in the Sierra de los Cuchumatanes of Guatemala, Massif de la Hotte in Haiti, and Serranía de Perijá in Colombia.

Much of ASA's work over the past year has focused on raising resources to support KBA identification for amphibians in priority countries, providing strategic input into the development and governance of the KBA Partnership, providing co-leadership of the KBA Technical Working Group and training in the application of the KBA criteria, and promoting the importance of KBAs

in international fora. This included a side meeting at the XI Latin American Congress of Herpetology in Quito, Ecuador, to inform regional ASG leaders about the IUCN-endorsed Global Standard for the Identification of Key Biodiversity Areas and discussing how regional expert groups can engage with KBA identification, Red Listing and implementation of ACAP.

The importance of KBAs as sites for ensuring the persistence of biodiversity was highlighted in a presentation at the ZSL-hosted symposium "Safeguarding space for nature and securing our future: developing a post-2020 strategy." (27-28 February 2018) hosted by the Zoological Society of London. ASA also provided extensive input into the development of "Guidelines on Business and KBAs: Managing risk to biodiversity", which provides a roadmap for companies operating in or impacting KBAs and outlines steps that businesses can take to actively safeguard biodiversity and avoid contributing to its loss.

ASA made important contributions to the project "Identifying Priority Sites for the Most Threatened Amphibian Species," implemented by the Amphibian Red List Authority of the Amphibian Specialist Group and funded by Rainforest Trust, Synchronicity Earth, IUCN and Global Wildlife Conservation, to undertake amphibian Red List re-assessments and highlight priority sites for protection of Critically Endangered and Endangered species in Peru, Indonesia, Malaysia, Philippines and Guiana Shield. ASA also provided expert review of amphibian KBA data for the Caribbean and for the global update of Alliance for Zero Extinction sites, the subset of KBAs containing highly threatened species restricted to single sites globally.





COMMUNICATIONS

By Candace Hansen-Hendrikx

ASA used a wide array of communications platforms in 2017–2018 to raise the profile of amphibians and their ongoing extinction crisis.

"Photographing Frogs and Other Amphibians" ebook

Designed for researchers and conservationists working with amphibians, the "Photographing Frogs and Other Amphibians" ebook by Robin Hoskyns provides an overview of techniques that can be used to create engaging images and demonstrate how these images can be utilized to tell the stories of amphibians and amphibian conservation. Some of the topics covered include: visual storytelling; basic settings; biosecurity; and dealing with the elements. This ebook, jointly produced and distributed by the ASA and ASG in April 2018, fulfilled several priorities highlighted in the 2015 Amphibian Conservation Action Plan.

Frogress Report

The Frogress Report is the ASA's bi-month-ly newsletter. It has been bringing together updates from across the ASA to continue to develop a strong alliance, and to celebrate the incredible achievements being made regularly across the partnership. It has enabled the regular exchange of important information relevant to all ASA Partners, while also giving the ASA Secretariat the opportunity to keep the partnership abreast of developments in relation to changes in the ASA governance.

FrogLog

Originally developed by the Declining Amphibian Populations Task Force (DAPTF) and subsequently by the ASG and now ASG and ASA, *FrogLog* has been readily and freely accessible to both professionals in the community and those who have

a strong personal interest in a wide variety of amphibian-related topics. As a result of an extensive analysis undertaken this past year, the editorial team has been working to broaden the audience of the magazine by making more of the content accessible to non-scientists, high school students, general interest groups, and those interested in conservation in general.

Website – www.amphibians.org

Since 2013, amphibians.org has been home to both the ASA and the ASG. Following an extensive consultation during the first quarter of 2018, a decision was made to separate the two groups onto their own standalone websites, with the ASA remaining on amphibians.org. This split will enable each group to have a website that better reflects their individual mission, grow audiences, better define individual brands, and most importantly, communicate more effectively. Development of both sites is currently underway. The separation of the websites will enable both ASA and ASG to continue to contribute toward their joint vision of "Amphibians thriving in nature" (a vision also shared with Amphibian Ark), but will allow improved targeting of information and responsiveness to their different, albeit overlapping, audiences.

Social media

ASA uses various social media channels (including Facebook, Twitter and Instagram) to raise the profile of amphibians, share the work of our Partners, and to publicize a variety of amphibian stories from around the world. They are also used to share information about new species, fascinating amphibian behaviours, and to highlight the people who champion amphibians around the world.









Amphibian Ark

By Anne Baker

amphibian ark

The Amphibian Ark (AArk) celebrated its 10th anniversary in 2017, and

its programs continued to grow and evolve. AArk's seed grant program supports the initial development of ex situ assurance populations for threatened species that cannot currently be safeguarded in their natural environment. In 2017 we were pleased to award four seed grants, bringing the total number of seed grants since AArk's inception to 26 in 16 countries. We also were able to provide additional support for some of our former seed grant recipients, allowing them to expand habitat modification, reintroduction and education efforts. The majority of seed grants have gone to organizations in Latin America, reflecting the greater number of applications from this region.

Our training programs continue to build capacity in countries with high amphibian species richness, but little experience in amphibian husbandry or the development of integrated amphibian conserva-

tion plans. A 2017 Salamander Husbandry course provided expertise that will allow institutions to respond to the potential introduction of *Bsal* into the Americas. This course brings the total number of courses that AArk and its partners have delivered to 63 in 33 different countries. In addition to training courses, the AArk website supports more than 200 husbandry documents and training videos, many in Spanish as well as English. An updated version of the Manual for Control of Infectious Diseases in Amphibian Assurance Colonies and Reintroduction Programs was posted in 2017.

In collaboration with Unite for Literacy, we produced five children's ebooks: Amazing Amphibians, Fantastic Frogs, Super Salamanders, Secretive Caecilians, and Amphibian Heros. All are available free of charge at www.uniteforliteracy.com/aark/arkbooks/.

AArk's Conservation Needs Assessment process, which evaluates and prioritizes species for conservation action, has recently focused on North American salamanders, again reflecting the need to be prepared for possible *Bsal* introduction. In

partnership with a host of other amphibian conservation organizations, we continued work with US Fish and Wildlife to create a ban on imports of species known to transmit *Bsal*.





ASG IUCN SSC Amphibian Specialist Group Specialist Group

By Ariadne Angulo & Phil Bishop

The IUCN SSC Amphibian Specialist Group (ASG) is the International Union for Conservation of Nature's (IUCN) global volunteer network of experts who donate their time and expertise to build a solid foundation of science to advance amphibian conservation action. With more than 330 members in more than 40 regions, the ASG is able to act on a global scale.

Over the past year ASG has been devoted to various activities, with special emphasis on the following: 1) updating the ASG strategic plan for the 2017–2020 IUCN period, which, once concluded, will help guide ASG's activities for the next two years, 2) working on identifying how to best update the Amphibian Conservation Action Plan (ACAP) and exploring partnerships to help achieve this, 3) revising and consulting on the joint ASG & ASA website, with both groups deciding to move on to separate websites to better serve their individual communities, 4) together with the ASA, producing and

launching the "Photographing Frogs and Other Amphibians" ebook, 5) consulting with ACAP Working Group Chairs on the draft ACAP Tracking Tool, 6) supporting a regional ASG symposium and coordinating and moderating a meeting with ASG Latin American Chairs in the Latin American Congress of Herpetology, and facilitating their introduction to KBAs (see page 28), 7) presenting at a Darwin's Frog symposium and facilitating a Darwin's Frog Conservation Strategy workshop, and 8) coordinating and preparing communications to solicit ASG support for an AZE consultation process. In addition, the ASG's Amphibian Red List Authority (ARLA) has been busily working to update amphibian assessments on the IUCN Red List of Threatened Species. The release of the July 2018 version of the IUCN Red List will include updated assessments for 386 species and first-time assessments of 74 species from more than 14 regions around the world.







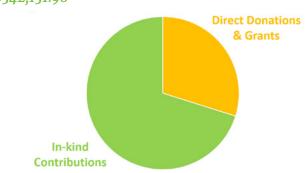


Financials

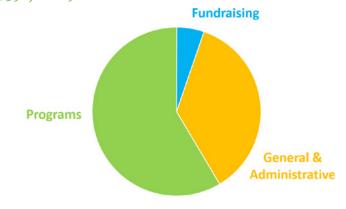
The Amphibian Survival Alliance is a global partnership of organisations conducting vital work to understand declines, protect species, and raise awareness of amphibians. The ASA Secretariat seeks to shine a light on the fantastic initiatives of our partners and support them to achieve the best results possible, promoting collaboration and access to key knowledge resources to help coordinate global efforts. During the 2018 Financial Year, ASA focused on building our Secretariat and developing our relationship with key advisors to help deliver the 2017–2021 strategic goals, which has been achieved through core donations and in-kind support from ASA's generous partners, advisors and donors. This financial report reflects the core work of the ASA Secretariat and that of our chief advisors, the IUCN SSC Amphibian Specialist Group (including the Amphibian Red List Authority) and Amphibian Ark.

The 2018 financial year brought huge progress in the development of ASA's governance and the mechanisms necessary to increase investment in amphibian conservation through our partners and advisors. The development of the Amphibian Fund in **honour of Dr. George B. Rabb** gives donors the opportunity to provide long-term support, aiming to grow donations over time, provide a stable source of annuity funding to key organisations and groups, and bring donors together to deliver coordinated and strategic funding for amphibian conservation. We are also working with donors to generate direct support for our partners and advisors. We look forward to increasing the funding available for amphibian conservation and moving toward a better future for amphibians everywhere.

FY2018 REVENUES: ASA & ASA ADVISORS \$542,131.98



FY2018 EXPENSES: ASA & ASA ADVISORS \$590,216.09





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Summary of ASA Secretariat Finances (FY2018)

REVENUES Direct donations & grants In-kind contributions TOTAL REVENUE	\$ \$ \$	161,907.50 380,224.48 542,131.98
EXPENSES General & Administrative Programs Fundraising TOTAL EXPENSES	\$ \$ \$ \$	213,556.56 345,860.52 30,799.01 590,216.09
CHANGES IN NET ASSETS	\$	(48,084.11)

Important notes on summary:

This table includes contributions directly related to ASA strategic priorities led and carried out by ASA's chief advisors, the IUCN 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. The change in net assets reflects an unexpected loss of core donations from the ASA Global Council during FY2018, which ASA is in the process of recouping. We gratefully acknowledge Global Wildlife Conservation and Synchronicity Earth as our Fiscal Sponsors.

2019 Financial Year Funding Priorities:

- · Amphibian Fund target: ≥\$1 million
- ASA Seed Grants: ≥\$25,000

 Grants available to ASA partners to promote the development of amphibian conservation projects
- ASA Support to "Future Leaders in Amphibian Conservation:" ≥\$10,000
 Scholarships to 2019 Amphibian Conservation Research Symposium for talented, early career amphibian conservationists from developing countries
- ASA & ASA Advisor core donations: \$168,761.40
- ASA & ASA Advisor in-kind donations: \$312,930.78



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Donor Acknowledgment

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

ASA DONORS











We would also like to thank Peter Schweinsberg and many anonymous donors for their kind donations to ASA.

We are forever grateful to the memory of Dr. George B. Rabb (1930-2017) for his countlessand generous contributions to ASA, in terms of donations, time, energy, and constant consideration. We would not be here today without his dedicated support.

ASA IN-KIND CONTRIBUTIONS







(ASA Fiscal Sponsor)







Global Council,
Secretariat &
Partners



Global Council

Claude Gascon – ASA GC Chair, Global Environment Facility

Simon Stuart – ASA GC Deputy Chair, Synchronicity Earth

Anne Baker – Amphibian Ark

Onnie Byers – Conservation Planning Specialist Group

Scott Carter – Detroit Zoological Society

Ruth Marcec – Detroit Zoological Society

Marco Cerezo – FUNDAECO

Gemma Goodman – Synchronicity Earth

Brian Gratwicke – Smithsonian Conservation Biology Institute

Myfanwy Griffith – European Association of Zoos and Aquaria

Mark Pilgrim – Chester Zoo

Paul Salaman - Rainforest Trust

Wes Sechrest – Global Wildlife Conservation

Don Church – Global Wildlife Conservation

David Field – Zoological Society of London

Ben Tapley – Zoological Society of London





ASA Secretariat



Helen Meredith
Executive Director
(on maternity leave 2017-2018)



Candace Hansen-Hendrikx
Director of Operations



Reid HarrisDirector of International Disease Mitigation



Nathan Yang
IT Director



Elyssa Scheck Communications Intern (until May 2018)



Ariadne Angulo Interim Executive Director (2017–2018)



Phil BishopChief Scientist



Penny LanghammerDirector of Key Biodiversity Areas



Lindsay Renick Mayer Senior Media Manager



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

Amphibian Ark AGBO-ZEGUE NGO

Amphibian and Reptile Conservancy Amphibian and Reptile Conservation Trust

Amphibian Foundation

AmphibiaWeb

Anima Mundi

Animal Demography Unit

Arcadia-Reptile

Asian Species Action Partnership

American Society of Ichthyologists and Herpetologists

Association Mitsinjo

Auckland Zoo

Alliance for Zero Extinction

Bd-Maps

Biodiversity Research and Conservation Foundation (BRCF)

BioFresh

Bristol Zoo Gardens

British Herpetological Society

Burgers' Zoo

Cameroon Herpetology-Conservation Biology Foundation

Carib-PARC

Conservation Breeding Specialist Group

Center for Biological Diversity

Center for Sustainability

CGO Ecology

Chester Zo

CONABIO

Comisión Nacional de Áreas Naturales Protegidas

Conservation Evidence

Conservation International

Herp Conservation-Ghana

Conserve It Forward

Conservation through Research, Education, Action

Crees Foundation

Defenders of Wildlife

Detroit Zoological Society

German Society of Herpetologists and Herp Breeders

Digitil zine

Durrell Wildlife Conservation Trust

Dutch Association of Zoos NVD

European Association of Zoos and Aquaria

ECOSUR

Endangered Wildlife Trust Fauna & Flora International Faunam

Foundation for Salamander Conservation

Frankfurt Zoo

Froglife Trust

Frogs & Friends

Fundaeco

Global Wildlife Conservation

Gola Rainforest National Park and Trans boundary Peace Park Project

Hamilton Zoo

Help Earth

Herpetological League

Herpin' Time Radio

Honduran Amphibian Rescue and Conservation Center

iNaturalist

Indigenous Forest Research Organization for Global Sustainability

Insitu exsitu

Instituto Curicaca

Instituto Venezolano de Investigación Científica (IVIC)

Isca Diagnostics

IUCN Species Survival Commission

IUCN SSC Amphibian Specialist Group

Josh's Frogs

Las Gralarias Foundation

Liquidspark Marketing

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Madagascar Fauna and Flora Group

Madagasikara Voakajy

MantellaMan Conservation

Meet Your Neighbours

Mhadei Research Station

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Potmarge Amphibian Connectivity
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Partners in Amphibian and Reptile

Pura Vida Bracelets

Rainforest Trust

Reptile, Amphibian and Fish Conservation Netherlands

Red Anfibios Chiapas

Reptile and Amphibian Program -

Roger Tory Peterson Institute of Natural History

Sabin Family Foundation

Sam Noble Museum, University of Oklahoma

Save the Frogs-Ghana

Société pour la Conservation des Amphibens de Madagascar

Secretaría de Medio Ambiente e Historia Natural - Gobierno de Chiapas

Smithsonian Conservation Biology

Societas Herpetologica Europaea

Society for Research on Amphibians

Society for the Study of Amphibians

Swedish Association of Zoos SDF

Synchroncity Earth

Terraviva Grants Directory

The Biodiversity Group

The Herpetological Society of Ireland

The Wandering Herpetologist

Third Millennium Alliance

Noordhoek Unpaid Toad Savers

Tropic Ventures Research and Education Foundation

Tropical Herping

Universidad de Ciencias y Artes de Chiapas

Universidad Politécnica de Chiapas

University of Kansas Institute of Biodiversity

Warren Wilson College

World Association of Zoos and Aquariums

Whitley Wildlife Conservation Trust

Wildlife Preservation Canada

WildSouth

Ya'axché Conservation Trust

Zoos Victoria

Zoological Society of London

JOIN THE ASA

If your organization or institution is interested in joining the Amphibian Survival Alliance please contact Dr. Helen Meredith (hmeredith@amphibians.org) for further details.

www.amphibians.org

