THE FUTURE OF GLOBAL AMPHIBIAN ASSESSMENTS: A STRATEGIC PLAN FOR GAA3, GAA4 AND BEYOND

AMPHIBIAN RED LIST AUTHORITY
IUCN SSC AMPHIBIAN SPECIALIST GROUP
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Photo by Andrew Snyder

INTRODUCTION TO THE GLOBAL AMPHIBIAN ASSESSMENT

Global Amphibian Assessment (GAA) initiatives are regular assessments of the extinction risk of all described amphibian species using the IUCN Red List Categories and Criteria. GAAs provide a snapshot of the current conservation status of amphibians as well as the opportunity to monitor trends over time, for example by calculating the Red List Index.

GAA1

The first GAA (GAA1) was launched in response to an identified need for comprehensive assessments of taxonomic groups on the IUCN Red List of Threatened Species and the growing evidence of declines in amphibian populations worldwide. GAA1 was coordinated by the IUCN/SSC-CI/CABS Biodiversity Assessment Unit (BAU). It began in 2000 and was completed in 2004 and was the first comprehensive assessment of the 5,743 amphibian species known at the time. Three full-time BAU staff worked on the project. In addition, NatureServe contributed one full-time staff member to assist with the New World amphibian assessments. The total cost of this first initiative was approximately US$1.2 million.

Conducted through a series of 33 regional projects, the GAA1 followed a three-stage process:

1. *Initial data collection.* Primarily conducted by a regional expert through consultant contracts.
2. *Expert consultation.* Initial data were shared with identified experts followed by a regional workshop to convene experts to contribute additional data and agree on preliminary categories and criteria. For regions with few species, expert feedback was returned by email.
3. *Data finalization.* All data were collated by the BAU team; supporting information was formatted and finalized, and the final Red List category and criteria were determined.

All GAA1 assessments were published on the IUCN Red List in 2004. A backcast 1980 Red List category was determined for each species by BAU staff based on the data available. These two datasets made it possible to analyze global trends for amphibians between 1980-2004 and these were published in Stuart *et al.* (2004). The book *Threatened Amphibians of the World* was published in 2006 and included a comprehensive analysis of all the data in the GAA1 as well as individual assessments for threatened species.

Lessons learned from the GAA1 process:

- **Expert consultation through in-person workshops were expensive and could be exhausting for staff members who traveled to several workshops across the globe each year.**
- **In-person workshops provided a great opportunity to bring the amphibian community together in a region, and to identify partners for future assessments and conservation efforts.**
- **Training consultants at the beginning of their consultancies was crucial to ensure data quality and consistency.**
- **Need to ensure there is acknowledgement of expert contribution to the process.** For example, more authors on the final publication.

GAA2

After the completion of GAA1, the IUCN/SSC established an Amphibian Specialist Group (ASG) which was given the task of maintaining the GAA data. As the number of new species descriptions rapidly increased, as well as the amount of new information, it became clear that this was a much larger task than anticipated. In response, the Amphibian Red List Authority (ARLA) was established in 2009 as a branch of the ASG with the responsibility

of managing the amphibian data on the IUCN Red List. To allow for monitoring trends through time, regular global assessments needed to be completed, for example, to calculate the Red List Index which was developed in 2005. A second comprehensive assessment of all amphibians began, and by 2015 was officially expanded to become the second GAA (GAA2).

The GAA2 was coordinated by a full-time ARLA team of 3-4 people initially hosted by the SSC Chair's Office and subsequently by Re:wild. Synchronicity Earth also joined as a global funding partner of the GAA. The GAA2 was a global collaboration of ASG members and the broader global herpetological community. It was completed in 2022 and included 8,011 amphibians assessed between 2012-2022. The overall cost was $2.5 million.

The GAA2 was conducted through a series of 43 regional or national projects, but with one additional stage:

1. *Initial data collection.* Primarily conducted by the ARLA team as the cost of staff time had been secured, but when project funds became available some consultant contracts were also issued.
2. *Expert consultation.* National and regional in-person workshops were held between 2012-2019 with online workshops only during 2020-2021 due to the Covid-19 pandemic; expert contributions were made by correspondence or an online meeting for regions with small numbers of species (usually less than 50).
3. *Data finalization.* All data were collated and formatted in the IUCN Species Information Service (SIS) database. For the majority of regional projects, this was done by the ARLA team, with a few done by ARLA Regional Coordinators and their teams.
4. *Review.* The IUCN Red List Rules of Procedure were updated in 2010 to mandate that all assessments must pass independent review by two reviewers prior to submission for publication. The 2012 update reduced this requirement to one reviewer. This is an additional step since the GAA1 and was a substantial time commitment for ARLA staff.

The GAA2 results provided another snapshot in time of the conservation status of amphibians. In addition, using the most recent data the ARLA team revisited the 2004 GAA and 1980 backcast categories and proposed corrected categories. These were used for the sole purpose of calculating the Red List Index to monitor trends. The RLI for amphibians now includes three data points, 1980, 2004 and 2022 and was published in Luedtke *et al.* (2023), providing an increasingly clear declining trend in conservation status for amphibians. A comprehensive analysis of the results of the GAA2 were published in the *State of the World's Amphibians* report (2023).

Lessons learned from the GAA2 process:

- **In-person workshops remained very valuable, but time-intensive.** Expert consultation through in-person workshops were still expensive and exhausting for staff members who traveled to several workshops across the globe each year.
- **"Mini workshops" with key national experts were useful early in the GAA2 when only small pots of project funding were available and made extensive use of e-mail and messaging apps for remote participation.** These ultimately required months of follow up emails. While more efficient than purely email based updates, they were less efficient than full in-person workshops.
- **The use of online forums to solicit expert contributions and update categories were not effective and ultimately dropped.**
- **Online workshops were useful but not a cheap, quick, or universal solution.** While these were a useful format when in-person meetings could not take place or were impractical, overall online workshops took much longer time than in-person workshops and required more staff time.

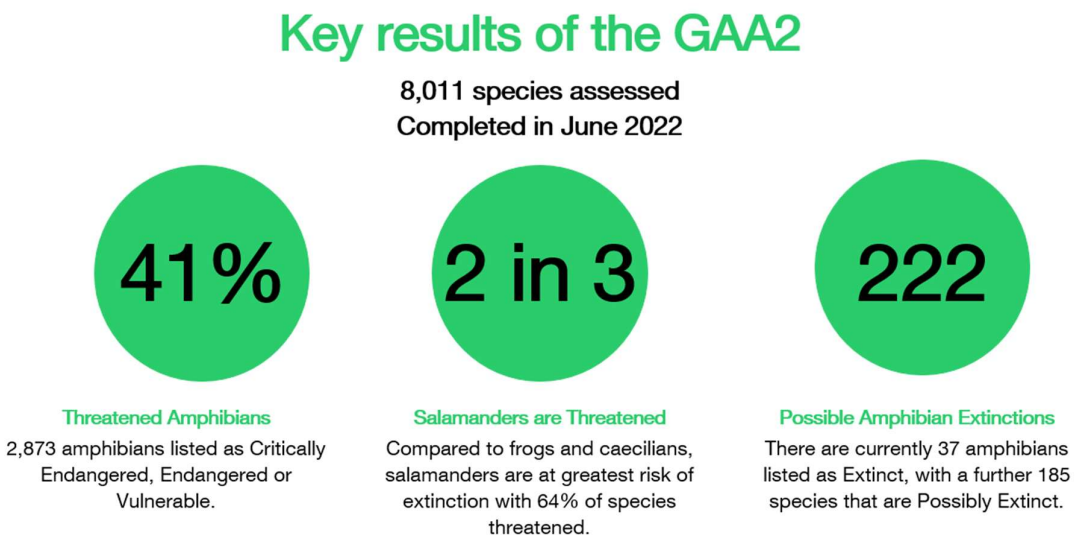
Realistically, about 100 species is the most that can be done well through an online workshop process.

When travel became impossible during the pandemic numerous GAA2 workshops were moved online out of necessity, including the South Asia and Caribbean workshops. For South Asia, rather than a one-week workshop with five ARLA facilitators in India, an online workshop was held that involved around 50x3-hour sessions with two facilitators in each session. This is roughly a 50% increase in staff time required for facilitation. In addition, it was difficult for experts to dedicate so many hours to online meetings, particularly because of the different time zone considerations. Rather than taking one week, they were required to attend meetings every second day, sometimes for up to 12 weeks. Understandably, this was just not possible for most people and many sessions did not have the necessary expertise in attendance, which required further follow-up.

- **Conducting more regular GAAs will lighten the workload and increase the speed of national updates.** The GAA2 found that too large of a time gap between GAAs makes the process lengthier. As an example, the 17-year time gap between the GAA and GAA2 processes for South Asia. There had been so many taxonomic changes and new research that it was very difficult to update past assessments with new information. The taxonomy from 17 years ago was often obsolete and it was time consuming to understand and implement the new changes.
- **Preparation of draft assessments was critical to successful expert contributions, but typically incomplete and time-consuming.** The ARLA found that experts more readily contributed to draft assessments rather than blank assessments. In future, ensuring GAAs are conducted regularly, and building capacity within countries to complete initial data collation rather than ARLA staff would greatly improve the quality of draft assessments and engage experts earlier and more regularly in the GAA process. This would require ARLA to initially invest in comprehensively training partners with a degree of oversight to ensure data quality and consistency as much as possible.
- **Relying on a workforce of short-term volunteers was not efficient**. Keeping experts engaged in the GAA on a regular basis makes the assessment process more manageable, current and is more likely to lead to conservation action.
- **The centrally led and implemented GAA process limited the number of regions that were being updated at any one time.** The resulting sporadic engagement with in-country stakeholders results in disengagement from the GAA process for several years.
- **It is time to shift the nature of GAA implementation.** Both GAA1 and GAA2 were coordinated and implemented by a central ARLA team. While this was effective in producing updated assessments and ensuring consistency, the timelines were determined independently from national processes. This is one of the likely explanations for low uptake of the results into planning and conservation efforts locally or nationally.
- **Sufficient acknowledgement of expert contributions remained a challenge.**
    - During the GAA2, authorship of assessments was changed to ASG. In hindsight, while this decision was well intentioned it has not worked as planned, and to properly acknowledge the contribution of experts it is proposed to change it back to the experts involved in the assessment.
    - When requested, the ARLA provided the results of each regional update to all contributing experts prior to publication on the IUCN Red List for the purpose of analysis and publication. This was clearly communicated prior to and at the end of each update. However, only a few experts to date have used this data for the purpose of publications.
    - Authorship was expanded to 126 co-authors in the GAA2 scientific paper, in contrast with the seven co-authors of the GAA paper. While there were many more experts that

contributed to the GAA it was not possible to include everyone as an author due to the substantial extra workload this would create. All experts were listed in the Supplementary Materials of Luedtke *et al.* (2023) as well as in the acknowledgments of the *State of the World's Amphibians* report (2023).

- **The ARLA will require a strong centralized team for the foreseeable future.** Coordination of future GAAs and application of the lessons learned will require considerable staff time over the next 10 years. The high rate of species descriptions (on average 150 per year), combining national data for non-endemic species assessments, and the need to achieve consistency between assessments will also be key roles for a central ARLA team.



EXPANDING THE SCOPE OF THE GAA

There is increasing enthusiasm and motivation within the amphibian community for the GAA to expand beyond just red list assessments. Moving forward the GAA will continue to identify Key Biodiversity Areas (KBAs) for amphibians, as well as partner with Amphibian Ark to complete Conservation Needs Assessments. Starting in GAA3, the Green Status of Species assessments will also be piloted across some regions for a subset of species. Together with the red list assessment, these new additions will increasingly provide a more complete overview of the conservation status of a species.

IUCN Red List assessment - www.iucnredlist.org/assessment/process

IUCN Green Status of Species (GSS) - www.iucnredlist.org/about/green-status-species

Key Biodiversity Areas (KBA) - www.keybiodiversityareas.org

Amphibian Ark Conservation Needs Assessments (CNA) - www.amphibianark.org

GREEN STATUS OF SPECIES ASSESSMENTS - A NEW ADDITION TO THE GAA

The newly developed IUCN Green Status of Species (GSS) is a standardized method to track species recovery and conservation impact. It measures how close a species is to being fully ecologically functional across its range, and estimates the impact of past, present and future conservation actions. The GSS complements Red List assessments by allowing for a more comprehensive picture of species' conservation status.

The first Green Status assessments for amphibians are planned for the GAA3 and GAA4. Initially a small subset of Green Status assessments will be completed, with the number increasing until they become an integral part of the GAA process. The plan is to assess 6% of amphibians (around 615) in the GAA3, and a further 6% in the

GAA4 (around 625). The intention is for the GSS assessments to be completed alongside the Red List assessment of a species or at least during the same process, for example, at the same workshop.

This new initiative will require a significant increase in staff time and funding.

NEW STRATEGY FOR GAA3 AND GAA4

LEARNING FROM PAST EXPERIENCES

The combined experience gained after the first two GAA processes points to several key innovations to the GAA process. In 2019, Re:wild conducted a survey of the other taxonomic groups completing similar comprehensive assessment initiatives such as the birds, mammals, sharks and rays, freshwater species, marine fishes, reptiles and trees. It is clear that some fundamental changes are needed if the IUCN Red List is to remain a powerful tool for conservation.

Starting with the GAA3, the ARLA aims to implement the following changes:

1. GAA initiatives will take place on a five-year cycle to ensure assessments on the IUCN Red List remain current and can better inform conservation planning.
2. The ARLA will retain its central coordination role and seek to build partnerships that share the ownership and workload of GAAs.
3. GAA initiatives will be linked to national red listing processes whenever possible.
4. ARLA operating costs will need to be more sustainable.

ALTERNATING FIVE-YEAR GAA CYCLE

Eighteen years went by between the completion of GAA1 and GAA2 during which the number of species increased by 40%, and the majority of amphibian assessments on the Red List had passed their ten-year expiry date. Such a large gap between assessments reduces their relevance to conservation planning and can make the process of updating the assessments more challenging.

The ARLA proposes to increase the regularity of GAAs within the reasonable constraints of expert and resource availability. Therefore, this current strategy covers both the GAA3 and GAA4 over a ten-year period. The GAA3 is proposed to run from 2023-2028 and the GAA4 from 2029-2033. This five-year cycle is ideal for reducing the number of reassessments needed each year, to keep experts engaged in the GAA, ensure new species are added as soon as possible, and maintain the currency of the GAA data on the Red List. To achieve this, the ARLA proposes that each region be updated through alternating cycles of “comprehensive” and “focused” updates.

COMPREHENSIVE UPDATES

A comprehensive GAA update will involve the reassessment of all species in a region along with first-time assessments for newly described species. Ideally comprehensive updates will be incorporated within existing national plans for red listing if they exist.

For regions with more than one hundred species, the expert consultation process will most likely be completed through an in-person workshop. If a national red listing workshop is already planned, the ARLA will seek to collaborate and combine the two processes as best possible. These workshops will focus on new species assessments, non-LC species, followed by LC species that have undergone a taxonomic change. LC species

without taxonomic changes will be considered last, and if there is insufficient time in the workshop, as these can be quickly addressed using online tools.

FOCUSED UPDATES

A focused GAA update will only reassess non-LC species and complete first-time assessments for any newly described species. A list of LC species will be circulated and if experts feel a reassessment is needed because the species is now likely to qualify for a different category, for example, if there has been a taxonomic revision or errors in the past, then that species can also be revisited. It is hoped that less than 20% of LC species will need a reassessment during this "focused" GAA update, hence the number of assessments for many regions will be significantly reduced. Rather than an in-person workshop, expert review will potentially be through either correspondence or smaller online workshops focused on a subset of species.

The reduced number of red list assessments in a focused update allows for more time to work on identifying KBAs, completing CNAs or starting GSS assessments. Although not a requirement to be completed as part of the GAA, the GSS provides a more complete picture of the conservation status of a species, while KBAs and CNAs are important steps in conservation planning.

REGIONAL/NATIONAL PARTNERSHIPS AND NATIONAL RED LISTS

The ARLA envisions a consortium of implementing partners for the GAA and hopes to engage institutions at both the national and regional level. Collaboratively, a five or ten-year plan will be developed encompassing both the GAA3 and GAA4, that considers national processes, fundraising requirements, and local capacity. Acknowledging that there are significant regional differences, for example due to data availability, number of experts, number of species and interest in national red listing, each region will have an individual plan which will incorporate some flexibility.

Moving towards a more sustainable GAA and one that is more readily incorporated in national processes will involve the following steps for each region:

1. Identifying a national or regional institution interested in long-term (ideally ten-year) involvement in the GAA.
2. Developing a long-term plan that includes focused and comprehensive GAA updates of five-year duration each and how it will be achieved logistically and financially.
3. Exploring ways to combine GAAs with any existing national red list processes.
4. Annual publication of first-time assessments for new species for many regions.

ROLE OF PARTNERS

Implementing partners will take on a more important role, enjoying advantages such as a greater sense of ownership over the process, its results, and the opportunity to combine the GAA with national red listing processes to avoid duplication of effort. In turn, it is our hope that partners will play a role in using GAA data in Key Biodiversity Area identification, national and regional conservation planning and prioritization, as well as country-level reporting to the CBD against Target 4 of the Global Biodiversity Framework (e.g. calculation of a national Red List Index).

Partners would be responsible for:

- completing initial data preparations each GAA update
- hosting expert workshops during a comprehensive GAA update
- finalizing assessments prior to review

- maintaining regular involvement with the GAA process
- compiling new species assessments each year for review by the ARLA, although the timing of these new assessments can be negotiated with each region.

FUNDRAISING

A ten-year plan provides a clear, actionable proposal to donors and prospective partners alike with several key benefits. First, this long view anticipates the resources needed to achieve two GAAs by 2033. Second, a comprehensive plan is easier to relate to broader goals within the conservation cycle of assess-plan-act, which may appeal to certain donors.

By raising funds collaboratively with national partners, it also increases the available pool of donors for the GAA, for example local universities, embassies in countries of interest, and local companies interested in engaging in local conservation and capacity building.

SMALLER REGIONS

Initially it may not always be possible to find a regional/national partner for some regions, and the ARLA will need to retain management of the process. While doing so, options for future partnerships will be explored whenever possible.

GLOBAL PARTNERSHIPS

In addition to regional and national partners, ARLA is seeking funding and/or implementing partners at a global level to help coordinate and manage the implementation of the GAA at the national/regional level. At present ARLA is supported by both Re:wild and Synchronicity Earth, but additional partners are needed.

Becoming a global partner of the ARLA would include:

1. Joining the GAA Steering Committee that meets on a regular basis.
2. Providing either direct funding to the ARLA or becoming a global implementing partner with staff partnering with the ARLA on GAA implementation. There is a minimum funding commitment to be considered a global partner.

EVOLVING THE ROLE OF THE ARLA

Having many organizations partnering to deliver the GAA rather than a single coordinating body will require the ARLA to evolve its role. One immediate change is that the ARLA will be less heavily involved in creating and finalizing assessments. Instead, the ARLA will focus on:

- coordination of regional/country level partnerships, including capacity building, training, and combined fundraising.
- workshop facilitation when required. ARLA team members will provide Red List training and workshop facilitation, as experience has shown that significant time can be saved at the review stage and the quality of assessments improved if workshops are well organized, address key topics, and experienced assessors are present to assist.
- managing access to SIS (central database managed by IUCN) for storage of assessment data.
- serving as Reviewers, to ensure that each red list assessment is finalized in agreement with experts and partners.

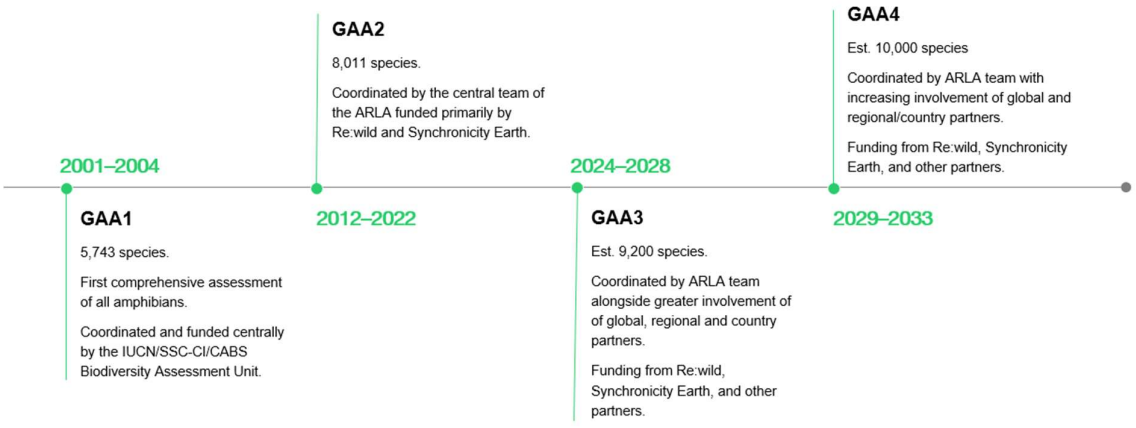
BENEFITS OF PROPOSED NEW GAA STRATEGY

In addition to regularly completing GAAs, the ARLA hopes that by evolving its role and collaborating with partners, this new proposed strategy will also:

- Build national assessment capacity,
- Build stronger links to national and regional conservation planning,
- Will give partners a sense of ownership over the data and the recovery of their species,
- Improve coordination with other taxonomic groups undertaking assessments at the global or national level.
- Invest in an assessment model more closely tied to national processes, which has greater potential to develop long-term funding arrangements with donors. This could lead to other taxonomic groups being included to expand the model in the future.
- Spread the cost of the GAA amongst many donors rather than rely heavily on only one or two donors. This will improve the long-term stability of funding for the GAA.
- Piloting the GSS across the different regions will hopefully build national capacity and encourage more assessments, so that all amphibians can be included in the future. This will give regions a more comprehensive picture of a species' conservation status and a way to measure the impact of their conservation actions.

TIMELINE

Below is the timeline for the GAA, over the next ten years.



BUDGET

The new GAA strategy focuses on developing partnerships for implementation with regional and national institutions. Long-term this should reduce the workload of the ARLA, but initially the necessary capacity building and coordination that comes with this change will require a larger ARLA core team.

For the GAA3 and GAA4, a detailed budget has been developed that takes into consideration rising costs, increasing species numbers and the expanding scope of the GAA. In summary it is estimated that it will cost US$2.5 million to deliver each cycle, at approximately US$500,000 per year. This includes ARLA staff time and overall GAA project costs. A detailed budget is available separately on request.

FOR MORE INFORMATION

The success of the GAA relies on the expertise of over 1,000 experts globally that contribute their time and expertise to amphibian conservation. The ARLA is incredibly grateful to everyone who has been involved in the GAA since it began over two decades ago and is looking forward to strengthening and expanding the network further in years to come.

For further details of the GAA3 and GAA4 Strategic Plan, or to explore becoming a regional or national implementing partner, contact ARLA Global Coordinator Janice Chanson: jchanson@amphibians.org.

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