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Amphibian Ark

c/o Conservation Breeding Specialist Group
12101 Johnny Cake Ridge Road
Apple Valley MN 55124-8151
USA

www.amphibianark.org

Phone: +1 952 997 9800

Fax: +1 952 997 9803



Leaping Ahead of Extinction: A celebration of good news for amphibians in 2012

To coincide with Leap Day (February 29th) 2012, Amphibian Ark is launching a new international event, **Leaping Ahead of Extinction: A celebration of good news for amphibians in 2012**. The event will focus on promoting existing *ex situ* programs for threatened amphibian species, as well as the institutions that manage these programs, by encouraging people to visit their closest zoo or public facility that is involved with the programs, on or around Leap Day 2012. You get to see what your local amphibian conservation organization is doing, and they get a chance to further promote the great work they are involved in.



At the time of writing, 37 institutions from 12 countries have confirmed their participation in this celebration. All participating institutions are listed on the Leaping Ahead of Extinction web page, www.LeapFrog2012.org. We know that many more institutions are involved with amphibian conservation, and we look forward to adding many more institutions to the list. If you would like your institution to be featured in this promotion, please contact AArk staff (kevinj@amphibianark.org) before December 31st. More information about how your institution can participate can be found on the Leaping Ahead web page (www.LeapFrog2012.org).

A fantastic poster is being created to promote the event, featuring some wonderful amphibian artwork that has been generously donated by a group of artists. The posters will also include logos of all participating institutions and will be distributed widely to all those involved in the campaign.

Below are some of the ways these institutions will celebrate their amphibian conservation programs in 2012. Activities being planned by other institutions will be added to the Leaping Ahead of Extinction activities web page (www.amphibianark.org/leap-day-activities/) in the lead up to Leap Day 2012. Amphibian program updates from some of the institutions that have already agreed to take part in the Leaping Ahead event are included in this newsletter, and additional updates will be added to the institutional program updates web page (www.amphibianark.org/updates-from-participating-institutions/) over the coming weeks.



Perth Zoo

Leap Day 2012 Celebrations at Perth Zoo, Western Australia

To help celebrate Leap Day 2012 and raise awareness for amphibian conservation, Perth Zoo will have special frog-themed activities from Saturday February 25 to Sunday March 4. Leap Day only comes around once every four

years when we add 29 February to our calendar.

At Perth Zoo, follow the frog footprints to the Australian Wetlands and:

- See Jane Davenport's fabulous photos of amazing Australian frogs
- Discover "Five for Frogs" – five ways to conserve frogs
- Make a pledge to do at least one of the "Five for Frogs" to enter a competition for the chance to win a behind the scenes tour of Perth Zoo's frog rearing and breeding program and other parts of the Native Species Breeding Program
- Pick up a frog trail brochure to discover fascinating frog facts and locate frogs around the Zoo
- Pick up some frog-themed merchandise at our Zoonique shop.

Normal Zoo admission prices apply.

Perth Zoo's A to Zoo community education program for under five year olds will also have a frog focus during this week of Leap Day celebrations.



Leap Day: Amphibian Conservation, Woodland Park Zoo

Where have all the frogs gone?

Leap to Woodland Park Zoo on Wednesday February 29 and Saturday March 3, from 10:00 a.m.-2:00 p.m. and join staff celebrating recent uplifting news stories arising from the amphibian extinction crisis including the successful reintroduction and head starting programs, rediscovery of presumed extinct amphibian

species, and populations of some amphibians that are adapting to the effects of amphibian chytrid fungus.

Enjoy frog-themed crafts, programming on our leaping friends in Zoomazium and special presentations.

Free with zoo admission or membership.



This year Perth Zoo tried a different approach to cycling and breeding the two *Geocrinia* species they hold, and, in August, they successfully bred the White-bellied Frog, *Geocrinia alba*, for the first time in captivity. Photo: Perth Zoo



In early 2011 the first Oregon Spotted Frog, *Rana pretiosa*, egg masses were observed at a release site where Woodland Park Zoo staff have released thousands of captive-bred froglets over the past three years. These are the first offspring resulting from captive reared stock. Photo: Brad Wilson.

Conservation needs assessment workshop for Singapore's amphibians

Kevin Johnson, Taxon Officer, Amphibian Ark

From October 31 – November 5, Wildlife Reserves Singapore hosted an Amphibian Conservation Needs Assessment workshop and an *Ex Situ* Amphibian Conservation workshop, at Singapore Zoo. Around 35 people attended these workshops, which not only reviewed the conservation requirements of Singapore's amphibians, but also provided guidance and training for staff from the new River Safari park which will include a number of amphibian conservation projects when it opens in 2012. The workshop was funded by the Wildlife Reserves Singapore Conservation Fund.

The first three days of the workshop were devoted to field conservation of amphibians and included the conservation needs assessment, and a number of presentations and hands-on sessions focusing on Singapore's amphibians and a variety of techniques used in the field during amphibian research trips. The assessment was facilitated by Kevin Johnson from the Amphibian Ark, and participants included staff from Wildlife Reserves Singapore, National Parks Board of Singapore, and the National University of Singapore. Presentations were given by Dr. Tzi. Ming Leong and Dr. David Bickford from the National University of Singapore, Dr. Nancy Karraker from the University of Hong Kong, Dr. Brad Wilson from Atlanta, USA, Dr. Phil Bishop from the Amphibian Survival Alliance and Ron Gagliardo from Amphibian Ark.

Twenty-eight amphibian species were assessed during the workshop, with one species, Malaysian Horned Frog, *Megophrys nasuta*, being recommended for an *ex situ* rescue program. Eight species were recommended for *in situ* conservation actions, seven species require additional *in situ* research to be undertaken, two species were recommended for *ex situ* research, twelve species are suitable for either *in situ* or *ex situ* conservation education programs, and one species was recommended for cryopreservation. Fourteen species were considered to be currently safe in the wild, and not in need of any conservation action at this time. The complete results from the workshop can be viewed on Amphibian Ark's data portal at www.amphibianark.org/assessmentresults.htm

The inclusion of a number of presentations and hands-on sessions was a first for an Amphibian Ark assessment workshop, and was very well received by the participants. These sessions provided a great insight into general amphibian biology, an overview of the amphibians of Singapore, specific field techniques such as capture and restraint, weighing, identification and sexing, minimizing the risk of disease transfer, and sampling techniques and protocols. An evening field trip to two sites in the Bukit Timah Nature Reserve was also included, during which, 14 species of amphibians were sighted.

Amphibian Ark staff would like to thank the Wildlife Reserves Singapore Conservation Fund for their very generous support of this workshop, staff from Wildlife Reserves Singapore for their wonderful hospitality and friendship during the workshop, and all of the participants for their involvement during the workshops. We're looking forward to seeing some great new amphibian exhibits and conservation programs at the River Safari when it opens next year.



Above: Dr. Nancy Karraker from the Hong Kong University shows workshop participants the use of microchips and readers for identifying released frogs.

Below: The nationally Endangered Malaysian Horned Frog, *Megophrys nasuta*, was recommended for an *ex situ* rescue program during the recent Amphibian Conservation Needs Assessment workshop in Singapore.

Photos: Kevin Johnson.



Workshop participants learnt about the importance of water quality for amphibians and then used a variety of water testing kits to check water from various exhibits around the zoo. Photo: Kevin Johnson.

Preparing for the future: Amphibian Ark husbandry training at the Singapore Zoo

Ron Gagliardo, Training Officer, Amphibian Ark

The Singapore Zoo is one of the most advanced and successful zoos in South-East Asia, combining zoological exhibits, excellent horticulture and a very strong conservation education message. The Night Safari, Bird Park and Zoo combine to make a real destination for visitors within the region and outside. Currently, the zoo maintains several species of amphibians in the Fragile Forest exhibit, a large walk-through forest that is home to other vertebrates such as fruit bats, lemurs and numerous birds. Several amphibian species from the region are showcased in the entrance of the Fragile Forest including Malaysian Horned Frog, *Megophrys nasuta*, Giant River Toads, *Bufo asper*, and Blyth's River Frog, *Limnonectes blythii*. The River Safari park due to open in June 2012 will also display amphibians when the time comes.

Recognizing the need to go beyond displaying animals but to also work to contributing to their conservation in nature, the Singapore Zoo intends to expand its conservation efforts in the future. Our workshop served as a foundation for new and existing zoo staff to stand on in terms of getting an understanding of the needs of amphibians in captivity.

Over the course of three very intensive days, we combined interactive discussions, lectures and hands-on practical sessions covering topics from basic husbandry, light and water quality, to exhibit design. Amphibian Ark consulting veterinarian and instructor Brad Wilson covered all of the health, nutrition and disease aspects in both lecture and demonstration form. Group projects helped to stimulate independent thinking and exchange of ideas as students were given conservation initiatives to develop on their own.

A big thanks for AArk Taxon Officer Kevin Johnson who stayed on after the Amphibian Conservation Needs Assessment workshop to help with training logistics and support. Fortunately for all (instructors included), Dr. Phil Bishop, recently appointed Scientific Advisor with the Amphibian Survival Alliance was along as an observer. Phil was extremely helpful in adding information from his own husbandry experience and also in bringing the big picture of amphibian conservation goals into the mix.

Students left the course with not only a better idea on what is involved to properly maintain amphibians in captivity but also a grasp on "why" we are doing this in the first place. The next steps will be to assist local stakeholders in Singapore to pursue and plan meaningful conservation projects.



Groups of Singapore Zoo staff were each tasked with creating an suitable exhibit for amphibians, using some of the practical techniques they learnt during the workshop, and their knowledge gained about local species.
Photo: Kevin Johnson.

Amphibian Ark 2012 calendars reduced to \$10!

The twelve spectacular winning photos from Amphibian Ark's international **amphibian photography competition** have been included in Amphibian Ark's beautiful 2012 wall calendar. The calendars are now available for sale, and proceeds from sales will go towards saving threatened amphibian species.



Pricing for calendars varies depending on the number of calendars ordered – the more you order, the more you save! Orders of 1-99 calendars are priced at US\$10 each (plus shipping.) For orders of more than 99 calendars, please contact AArk. You can order calendars for yourself, friends and family, or why not purchase some calendars for re-sale through your retail outlets, or for gifts for staff, sponsors, or for fund-raising events?

Order calendars for yourself and as gifts – a great idea for holiday season gifts!

Calendars can be purchased via our web site at www.amphibianark.org/2012-calendar/ Orders of 1-99 calendars are just US\$8 each (plus postage).



New music video about the Amphibian Ark

In 2009, Ohio (USA)-based band, The Indoorfins, wrote and recorded a song for the Amphibian Ark, and earlier this year, Danny Beckwith, a Science Educator at John G Shedd Aquarium in Chicago, USA, produced a fantastic video clip for the song. The results of these combined talents can be seen in the completed video on YouTube (www.youtube.com/watch?v=Av-Xat3kyxE). We are extremely thankful to Jenny Pramuk from the Woodland Park Zoo for underwriting production of the song.

The Indoorfins

Since August of 1991, the Indoorfins have been navigating the waters of pop music in and around Lima, Ohio, weathering the time and tide of change, exploring the frontiers of electronic entertainment, all the while evading the shackles of international superstardom.

They've held audiences in auditoriums, bars, reception halls, fairs, tailgates, country clubs, high schools, camp grounds, even prisons, and their fan base includes, Boomers, Xers, Millenials, as well as New Silents.

Their original songs have been featured on several radio stations, and they've written songs for the University of Pennsylvania's, Penn Reading Project and the Brooklyn Zoo, as well as their song for the Amphibian Ark. With their creative ambitions still in tact, there are plans of filming a documentary of their 20 years together along with videos to accompany their newest original music currently being recorded, all the while maintaining a rigorous live schedule.

You can hear the song Amphibian Ark (www.youtube.com/watch?v=Av-Xat3kyxE) by the Indoorfins, and you can also read the lyrics to the song below. You can also follow the Indoorfins on their web site (www.indoorfins.com) or their Facebook page (www.facebook.com/pages/The-Indoorfins/103345906702).

Danny Beckwith

Puppetry. Amphibians. Conservation. Education. I could easily describe myself using those four words, but it is not often those four subjects get to mix and mingle. I was lucky enough to have that happen this past year. All of my passions in life coming together in a great project, an Amphibian Ark video.

When making the video, I had many elements to consider. The most important question I had to answer though was, what story am I trying to tell? Should I tell a story of extinction, habitat destruction, and disease? That would be easy. It is easy to show a world that looks like that. But that is not me, not by a long shot. That's not the video you see either.

The story I wanted to tell with this video was a story of hope – the story of Amphibian Ark. Thankfully, the song by the Indoorfins was already finished and the lyrics reflected my philosophy of optimism. My task now was to create a visual world of optimism.

I was very deliberate in choosing the colors, characters, style, and movement. I wanted the video to be bright (even though most of it takes place at night), bold, and fun, even with the potentially heavy subject matter. I also wanted to respect all amphibians. The characters are non-descript species of frog, salamander, and caecilian; they were designed to represent every species.

I feel like I could go on and on about the choices I made in this video, but when it comes down to it, it was always about making something that an audience of any age would have an emotional response to. I hope everyone who watches the video leaves it knowing something more than they did going into it. Even after the last frame has faded, I hope it moves people to learn more



In 2009, Ohio (USA)-based band, The Indoorfins, wrote and recorded a song about the Amphibian Ark. Danny Beckwith from the John G. Shedd Aquarium in Chicago recently produced a video clip to go with the song.



Amphibian Ark

Keepers of rain sing a synchronized tune
To the moon and stars.
Partial aquatic and tempo'd symphonic
They sail aboard an Amphibian Ark.

And their voices are rising as one in the dark.
Jeff Corwin can hear it and so can Sir David Attenborough
It's reached the ears of Jean-Michel Cousteau.
They're keeping threatened amphibian species afloat.

We are the spark.
'Cause we're out to embark,
Amphibian ark is propelled by a chorus of frogs.

I breathe through my skin and I take moisture in
From the cool and damp.
But where will I go, they're destroying my home
And the swamps I swam are not the same.

We are the spark.
'Cause we're out to embark,
Amphibian Ark is propelled by a chorus of frogs.

It's never simple when you add your progress in
Easy to overlook, a slight change for you might be a major one
for me
Agents of fertility and good luck,
Could use some help and some luck of their own.

We are the spark.
'Cause we're out to embark,
Amphibian Ark is propelled by a chorus of frogs.
Amphibian Ark is propelled by a chorus of frogs.

Words & Music copyrighted 2009 KingFish Productions.

and make a difference in amphibian conservation. Perhaps these are lofty goals, but they are goals worth believing in.

There is no way I could write this without thanking a few people who were absolutely critical and instrumental to making this video happen. First, I want to thank Jenny Pramuk for her faith and trust in me, and allowing me to be as creative and imaginative as I wanted. She is the reason the video exists in the first place. The whole project was her dream to share the work of the AArk with the world. I just happened to be lucky enough to help make that dream come true. Second, thank you to Joe Mendelson, who told me about this project during amphibian school and leading me to Jenny. Your belief in my abilities was essential to making this happen. Lastly, I have to thank my biggest inspiration, Jim Henson, a visionary of the most extraordinary kind.

"A film is not done by one person. It's done by a lot of people. I love this whole collaborative aspect. When it works well, you end up with something better than any of us started out to do." – *Jim Henson*.



Science Educator, Danny Beckwith from the Shedd Aquarium in Chicago, with the puppet stars of the video clip for the song *Amphibian Ark*.

FrogLog edition 99 now available!



The Amphibian Specialist Group (ASG) published the 99th edition of FrogLog (www.amphibians.org/blog/2011/11/17/froglog-99/), its bimonthly publication, last month. Following the Regional Focus format introduced earlier this year, the 99th edition had a number of articles highlighting the wide array of work being undertaken in Maritime Southeast Asia and Oceania.



In addition to the regular items associated with the regional sections there were also a couple of new sections introduced to FrogLog. "News in Brief" has been included to allow readers to get a sense of the projects and activities the ASG is involved in around the world and share general information that might be of interest.

Last month the ASG launched its new web site (www.amphibians.org), and as part of the new site we have included an events calendar that we are hoping to fill with amphibian related events from around the world.

Finally a call for nominations for the 2012 Sabin Award for Amphibian Conservation – an annual award of \$25,000 recognizing significant contributions by individuals in the field of amphibian conservation – was announced. If you know someone worthy of this award nomination forms and supporting information can be found on the ASG web site at www.amphibians.org/asg/grants/. The closing date for nominations is the 29 January 2012.

AArk holiday wish list!



1. Your **Miles!** Travel is a significant expense for Amphibian Ark, whether it's sending instructors to a workshop or trying to get an intern from a range country to another place for training. Frequent flyer miles and buddy passes go a long way to helping us to help others working to help amphibians. If you are able to donate some of your miles to AArk, we'd really appreciate it! Please contact kevinz@amphibianark.org



2. Wishing wells! We are also looking for supporters to help us purchase spiral coin wells (e.g., www.spiralwishingwells.com/index.html), as well as institutions willing to house them in their public areas. If you are interested, please contact us!



Columbus Ohio Zoo, Gorilla Exhibit

Help us meet our 2011 fund-raising targets!

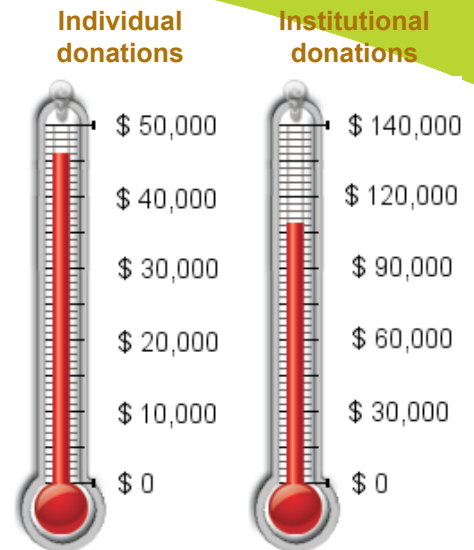
In order to continue saving threatened amphibians around the world, like many other non-profit organizations, we must raise most of the funds that are needed for our work. Our targets for 2011 are:

- Individual donations: \$50,000
- Institutional donations: \$140,000

We are close to our targets for 2011, but are not quite there. As of December 5th, we have raised **\$46,111** from individual donations and **\$105,433** from institutional donations.

Please help us to raise the remaining funds that we need to ensure that the AArk stays afloat! Your generous donations will ensure that we continue to help save those amphibian species that cannot currently be saved in the wild, and will likely go extinct if we do not act now.

DONATE - click here



Have you considered purchasing AArk calendars as gifts this holiday season? They're been reduced to just \$10!

The twelve spectacular winning photos from Amphibian Ark's international amphibian photography competition have been included in Amphibian Ark's beautiful 2012 wall calendar. The calendars are now available for sale, and proceeds from sales will go towards saving threatened amphibian species.

Pricing for calendars varies depending on the number of calendars ordered – the more you order, the more you save! Orders of 1-99 calendars are now priced at just US\$10 each and orders of more than 100 calendars drop the price to US\$8 each (plus postage).

Click here to order!

You can also help us during the holiday season by giving back when you give gifts this year. Use GoodShop.com (www.GoodShop.com) when you shop online – they work with more than 2,500 major brands, have over 100,000 coupons and donate a percentage of every purchase you make to us. And it costs you nothing!

Enrol in GoodDining.com (www.GoodDining.com) and they will donate up to 6% of every dollar you spend when you eat at one of 10,000 participating restaurants.

Please join our community on GoodSearch.com (www.GoodSearch.com/nonprofit/Amphibian-Ark.aspx) and help us raise money for our mission. Get started by clicking the "Become a Supporter" button on our profile page here! Why not ask your friends and family to support amphibian conservation and buy through GoodShop this holiday season.

It's really easy, it's free and it turns simple everyday actions into a way to make the world a better place. You can help support Amphibian Ark. Go to www.GoodSearch.com to get started.



Why Frogs Call and Why We Should Listen

This DVD contains 80 minutes of material on the natural history, behavior and the role of frogs in the environment. The DVD includes:

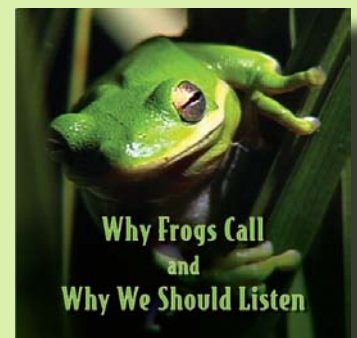
The documentary *Why Frogs Call and Why We Should Listen*. Narrated by seven renowned biologists who share their expertise on frogs. The filmmakers spent several years tracking down calling frogs in swamps, fens and ephemeral ponds. Includes: Caroline Aguti - African frogs, Karen Glennemeier - Frog surveys, Val Beasley - Frog declines, Michael Lannoo - Frog malformations, Robert Brodman - Wetland diversity, Anne Maglia - Fossil frogs and Carl Gerhardt - Why frogs call.

Thirty videos from the website, www.midwestfrogs.com, arranged by species and subject matter. The clips provide a fast and easy reference to frog calls by putting a face to the voice.

Range maps of the frogs featured in the documentary. Courtesy of the United States Geological Survey.

Price \$20.00 plus \$4.95 shipping and handling. Visit www.midwestfrogs.com/videocallingfrogs.htm to order your copy now!

In Ravenswood Media's latest video, Mike Lannoo describes his research on the Crawfish Frog, *Rana areolata*, at the Hillenbrand Fish & Wildlife Area in southern Indiana. The Crawfish Frog is threatened with loss of habitat and by chytrid fungus. You can see the video at <http://vimeo.com/33243464>



Sustaining donors part 3: Giving time

In the June Newsletter we looked at sustaining donors who provide AArk general operating support; in September we featured sustaining donors who support our seed grant program. This month we feature a different kind of sustaining donor, those who donate staff time or housing for AArk officers.

CBSG donates 50% of Admin Assistant Elizabeth Townsend's time to help the AArk with administrative services. "I have been with CBSG for almost 20 years and one of the things I am proudest of is our contribution to the establishment of the Amphibian Ark. Created in response to the IUCN Global Amphibian Assessment and its subsequent call for action, the AArk team has worked tirelessly on behalf of amphibian species that cannot be saved in the wild. CBSG is committed to doing all we can to ensure AArk's continued success." *Dr. Onnie Byers, IUCN Conservation Breeding Specialist Group.*



Woodland Park Zoo in Seattle provides office space and support to AArk Training Officer Ron Gagliardo. "Our zoo is proud to support the actions of Amphibian Ark, whose efforts to save amphibian species from extinction are paramount to confronting a monumental biodiversity crisis." *Deborah Jensen, Woodland Park Zoo.*

Other institutions that have donated staff time in the past include Chester Zoo, Philadelphia Zoo, the Zoological Society of Antwerp, and the Zoological Society of London. Other institutions that have hosted staff in the past include Zoo Atlanta and the Zoo and Aquarium Association (Australasia). We are incredibly grateful to all of these institutions for their support of AArk staff.

In addition, Amphibian Ark staff are very fortunate to also have a large group of professional associates who regularly offer their services to support our amphibian conservation work. Collectively, the following people have contributed many hundreds of hours of their time to share their expertise and help with workshop facilitation, instructing at training courses and chairing advisory groups. We'd like to sincerely thank all of these people, and their respective institutions for their support of our associates.

- Luis Carrillo (Zoofari)- Assessment facilitator, consulting veterinarian
- Paul Crump (Houston Zoo) – Assessment facilitator
- Gerardo Garcia (Durrell Wildlife Conservation Trust) – Husbandry workshop instructor
- Richard Gibson (Auckland Zoo) – Taxon management officer
- Kristin Leus (CBSG) – Co-chair of Population Management Advisory Group
- Rhiannon Lloyd – Biobanking officer
- Gerry Marantelli (Amphibian Research Centre) – Husbandry workshop instructor
- Michael McFadden (Taronga Zoo) – Husbandry workshop instructor
- Joe Mendelson (Zoo Atlanta) – Scientific advisor
- Andy Odum (Toledo Zoo) – Husbandry workshop instructor
- Allan Pessier (San Diego Zoo) – Chair of Biosecurity Advisory Group, consulting veterinarian
- Jenny Pramuk (Woodland Park Zoo) - Husbandry workshop instructor
- Mike Ready (private) – Husbandry workshop instructor
- Sam Rivera (Zoo Atlanta) – Consulting veterinarian
- Ollie Ryder (San Diego Zoo) – Chair of the Biobanking Advisory Group
- Kristine Schad (AZA) – Co-chair of Population Management Advisory Group
- Micky Soorae (IUCN Reintroduction Specialist Group) – Chair of Re-introduction Advisory Group
- Brad Wilson (private) – Consulting veterinarian, Husbandry workshop instructor

Wouldn't you like to be a sustaining time donor too?

Can you donate staff time or salary, even a few hours per week? Or maybe you can commit to support our general operations or seed grant program through 2015 and we will celebrate you as we do these other wonderful supporters of the AArk.

Unable to make a long-term commitment?

That's fine; we love our single donors too! Donate here today. Watch our next newsletter for recognition of our individual monthly donors.

Thanks!

MedWish helps amphibians too!

MedWish International (www.medwish.org) is a not-for-profit organization committed to repurposing medical supplies and equipment discarded by the healthcare industry with the objectives of providing humanitarian aid in developing countries to save lives and reducing waste to save our environment. However, when they have supplies that are considered extra, close to or expired, or that aren't considered sterile, they donate them to other causes to keep things from ending up in a landfill. Such recipients include animal shelters, the Desert Tortoise Conservation Center, and now...Amphibian Ark!

In November, MedWish sent a large box of examination gloves and microscope slides to Dr. Allan Pessier, Senior Scientist at San



Diego Zoo and AArk Consulting Veterinarian: "We have an AVOP [AArk's Amphibian Veterinary Outreach Program] trip tentatively planned for this spring to visit several facilities in Ecuador where these medical supplies will be used to assist multiple captive survival assurance populations of species on the brink of extinction in the wild."

Thanks MedWish!

Geocrinia captive breeding and rear for release programs at Perth Zoo

Kay Bradfield, Supervisor Native Species Breeding Program, Perth Zoo

Our *ex situ* work with the two threatened *Geocrinia* species from the south-west of Western Australia (Critically Endangered White-bellied Frogs, *Geocrinia alba*, and Vulnerable Orange-bellied Frogs, *Geocrinia vitellina*) has continued throughout 2011.

The number of sites where White-bellied Frogs are found in the wild has declined by 30% over the past 10 years, while Orange-bellied Frogs are restricted to a small number of populations in a range of less than 6 square kilometers. Since 2008, Perth Zoo has been working with the Department of Environment and Conservation collecting egg nests and tadpoles from the wild for rearing at the Zoo and release back into the wild. We have also established a captive breeding program at the Zoo to further increase the numbers available for release. With the support of the South West Catchments Council, the aim is to re-establish populations in areas where they have become extinct and establish new populations in suitable habitat.

Captive breeding program

This year, we tried a different approach to cycling and breeding the two *Geocrinia* species, and, in August, we successfully bred the White-bellied Frog for the first time in captivity. A total of three clutches were laid in the breeding chambers during August and September. The eggs in one nest failed to develop but fertile eggs from the other two nests have already metamorphosed and are growing well.

Head-starting program

In the wild, *Geocrinia* egg nests are subject to high levels of mortality, due largely to predation by invertebrates, so head-starting them in captivity protects them through this highly vulnerable stage.

This year, we released head-started individuals of both species into the wild in early October. While the White-bellied Frogs bred at Perth Zoo in 2011 won't be ready for release until 2012, egg nests collected from the wild in 2010 were ready in October for release after 12 months of careful rearing at the Zoo. A total of 31 White-bellied Frogs were released near Witchcliffe in the south-west of Western Australia at the same site that we released 70 head-started individuals in 2010. Based on monitoring carried out by the Department of Environment and Conservation, we estimate that approximately 50 of the 70 individuals released last year are still present at the site. This is an excellent outcome, particularly given the poor wet season last year and the long, dry summer. We hope that the additional frogs released at the site this year will contribute to the establishment of a self-sustaining population. We also conducted the first release of head-started Orange-bellied Frogs, at a site identified by the Department of Environment and Conservation.

While we were in the field to release the frogs, we also carried out the first of three trips to collect egg nests of both species to bring back to the Native Species Breeding Program at the Zoo for the next round of head-starting. In total, we collected five White-bellied Frog nests and eight Orange-bellied Frog nests. Although the average clutch size for these species is 10 – 12 eggs, several of the clutches we collected this year only contained a few fertile eggs. These are currently growing and developing well though, and we already have our first metamorphs for the year from wild-collected egg nests.



Above: A captive breeding program for the White-bellied Frog, *Geocrinia alba*, has been established at Perth Zoo to further increase the numbers available for release.

Below: White-bellied Frog tadpoles are being reared at Perth Zoo for eventual release into the south-west of Western Australia.
Photos: Perth Zoo.



Featured Frog MatchMaker projects

In 2010, we launched our conservation project list, Frog MatchMaker, which now includes 49 amphibian conservation projects from 24 countries. The complete list can be searched by genus, country, project type, or by the amount of support required, and we would urge you to take a minute to look through the list and find a project that you or your organization might be able to support.

In this newsletter, we're featuring two more projects from the list that are seeking support to carry out their amphibian conservation projects.



San Lucas Marsupial Frog, *Gastrotheca pseustes*, one of the species housed at the amphibian breeding facility at Zoo Amaru.
Photo: Ernesto Arbeláez.

Amphibian Conservation Center at Zoo Amaru in Cuenca, Ecuador

Zoo Amaru in Cuenca, Ecuador is involved in nine established conservation programs for amphibians from nearby Cajas National Park and the surrounding region. These species include: *Atelopus nanay*, *Ceratophrys stolzmanni*, *Epipedobates anthonyi*, *E. tricolor*, *Gastrotheca litonensis*, *G. monticola*, *G. pseustes*, *Hyloxalus vertebralis* and *Nelsonophryne aequatorialis*.

Many of these species are already breeding successfully in captivity, with national studbooks planned to facilitate cooperative breeding programs with other Ecuadorian partners (Pontificia Universidad Católica del Ecuador and Centro Jambatu de Investigación y Conservación de Anfibios).

In addition, the captive programs are closely linked to *in situ* monitoring programs to identify and mitigate threats, and local community outreach programs. Annual operating expenses are ~\$25,000 per year and current funding will run out in February 2012.

More information can be found on the Frog MatchMaker web site, <http://aark.portal.isis.org/Amphibian%20Partnerships/Lists/Amphibian%20partnerships/DispForm.aspx?ID=13>.

If you can help, please contact Ernesto Arbeláez: earbelaez@zooamaru.com

Conservation actions for native and threatened amphibians of the Colombian Caribbean region – Fundación Botánica y Zoológica de Barranquilla

The amphibian biodiversity of Colombia's Caribbean region is rich, but most species are threatened to some degree. Fundación Botánica y Zoológica de Barranquilla, as the only zoo in the region, is contributing to the conservation of amphibians via a holistic amphibian conservation project that includes:

- an amphibian exhibition and education program
- ex situ conservation via captive-breeding program of two local, endangered amphibians; *Allobates wayuu* (classified as Vulnerable) from Makuira National Natural Park and *Colostethus ruthveni* (classified as Endangered) from Sierra Nevada de Santa Marta
- educational activities at the zoo and at localities where endangered amphibians are found and by monitoring the health of several amphibian populations.

Both species were assessed during the AArk species prioritization workshop for Colombian species in 2007, and were recommended for captive breeding programs. The other aim of the project is to raise awareness about amphibians, the threats they are facing and the actions that can be taken to protect them both in the wild and at the zoo.

The zoo requires funds to purchase terrariums, life support systems (filters, tubing, mist heads, pumps, water quality testing equipment), digital video camera, frog logs, data loggers and chytrid testing kits.

More information can be found on the Frog MatchMaker web site, <http://aark.portal.isis.org/Amphibian%20Partnerships/Lists/Amphibian%20partnerships/DispForm.aspx?ID=10>.

If you can help, please contact: Farah Ajami at f.ajami@zoobaq.org



The Vulnerable Wayuu Frog, *Allobates wayuu*, is one of two target species for a project at Barranquilla Zoo focusing on threatened amphibians of the Colombian Caribbean region.
Photo: Luis Alberto Rueda Solano.

Lemur Leaf Frog update

Andrew R. Gray, Curator of Herpetology, The Manchester Museum

The Lemur Leaf Frog, *Agalychnis lemur*, remains one of the world's most Critically Endangered amphibians. During a re-assessment of Leaf Frog classification, based on DNA profiling, the species has now been moved from the previous genus *Hylomantis* to that of *Agalychnis*. Other work has recently highlighted a significant difference between Panamanian and Costa Rican populations, the extent of which is similar to that found between other completely different species of *Agalychnis*. This has clearly indicated the necessity to manage animals from the different populations separately.

The live specimens that are maintained at The Manchester Museum in the UK are from one of the last remaining populations in Costa Rica, and the captive breeding program there was first started in 2001. Over the years, young animals bred at the Museum have been distributed to zoos around the world, including Bristol Zoo in England, the Vancouver Aquarium in Canada, and the Atlanta Botanical Gardens in the US. Research and engagement work at Manchester Museum continues to support and highlight the need for focused amphibian conservation with this species.

Within the UK, Bristol Zoo has been highly instrumental in taking captive breeding of the Costa Rican animals forward, and has also invested in a special amphipod dedicated to the species and situated at the Zoo. Many specimens have been produced at the Zoo and this year 40 specimens were sent to Cologne and Antwerp Zoos in Europe. Bristol Zoo has also produced husbandry guidelines for the species, and a research project involving a student from Manchester University working at The Horniman Museum in London aims to develop specific guidelines for best practice in tadpole rearing.

In situ conservation for the population has been fully supported and built upon by the Costa Rican Amphibian Centre, where the wild population continues to be assured through excellent habitat modification and site protection. Although all frogs of the genus *Agalychnis* are now protected under CITES, stocks of this species have recently appeared in the trade. However, these have only been made available to hobbyists via highly reputable suppliers also interested in supporting conservation.

It is hoped that in the near future a focused taxon group will be in a position to establish a full genetically managed captive population of Costa Rican *Agalychnis lemur*. A new research project has been proposed to support the establishment of this, which first involves studies to develop a genetic marker system for the species at the required level, as PCR primers for microsatellites are lacking for this species. Several institutions are involved in this new project, although further support is required and collaborative opportunities now exist.

The cost of the necessary genetic research work is in the region of £10,000, and any support towards this amount would be greatly valued. If any private individual or organization would kindly consider funding at this level they would be extremely grateful, as it would provide be a major step towards enabling them realizing their vision for the conservation of this Critically Endangered species. For further information please contact: Andrew Gray, Curator of Herpetology at Manchester Museum, who is leading this project: andrew.gray@manchester.ac.uk.

Apart from research and captive breeding, conservation activities at the Manchester Museum include a large amount of public engagement work. We will be supporting the Amphibian Ark's Leap Day event by hosting specialist talks on the subject of amphibian conservation. We also provide an opportunity for individuals to sponsor a Lemur Leaf Frog or provide the opportunity to give frog sponsorship as a gift for Xmas!: <http://frogblogmanchester.com/about/sponsor-a-frog/>



Lemur Leaf Frog, *Agalychnis lemur*, showing night coloration. Photo: Matt Wilson/Manchester Museum.

San Diego Zoo release more Southern California Mountain Yellow-legged Frogs

Dani Dodge Medlin, Public Relations Representative, San Diego Zoo Global

The San Diego Zoo Institute for Conservation Research has been a partner in the recovery of the Southern California population of Mountain Yellow-legged Frogs, *Rana muscosa*, over the past five years and continues to make progress in captive breeding and reintroduction efforts of this endangered species. Our partners in this program include the U.S. Geological Survey, the U.S. Fish and Wildlife Service, the California Department of Fish and Game, the U.S. Forest Service, and the Los Angeles Zoo. In Southern California, the Mountain Yellow-legged Frog is critically endangered due to loss of habitat, fires, introduced predators such as trout and bullfrogs, stream sedimentation, pollution, and a disease known as chytridiomycosis, which is caused by the chytrid fungus.

Our involvement in the frog program began in August 2006, when the Forest Service and the U.S. Geological Survey rescued 82 tadpoles from a drying stream and brought them to us. Our mission was to raise as many tadpoles as possible to adulthood and breed them in captivity with the goal of introducing the progeny back to the wild. We successfully raised 65 frogs and transferred 10 adult frogs to the Los Angeles Zoo.

Forty-one adult frogs are currently at the Institute for Conservation Research and we have improved our breeding success every year since the first attempt in 2009. The frogs were only young adults during the 2009 breeding season and produced only a few fertile eggs. To test the effect of hibernation on fertility, we gave the frogs a more natural winter cycle, placing half of the adults in beverage chillers for 2 to 3 months at 40° F. Winter cooling spurred much more breeding behavior in the frogs after they were warmed up in the spring. In 2010, we released 30 fertile eggs and 36 tadpoles into a stream on the University of California's James San Jacinto Mountains Reserve near Idyllwild, California. In the 2011 season, researchers at the Institute cooled all the frogs for three months and had even greater breeding success. In June 2011, we released 300 fertile eggs and 300 tadpoles onto the James Reserve.

Since the first release, we have been conducting regular monitoring of the release site. Amphibian larvae have a very low natural survival rate to metamorphosis, with only 5 to 10% of tadpoles expected to survive to become frogs. Predators such as aquatic invertebrates and garter snakes play a big role in reducing tadpole survival. Because they live at high altitude in cold streams, Mountain Yellow-legged Frogs grow slowly, taking two to three years to metamorphose into adults. At the release site, we have been experimenting with different release strategies, which include keeping tadpoles in screen cages in the stream for different periods of time. This allows the tadpoles to acclimate while keeping them safe from predators. So far we have had 100% survival of tadpoles in these acclimation cages prior to release.

In early fall of 2011, Zoo scientists were very excited to find a number of tadpoles from that year's release alive and well in the creek. Many more may have survived, but were not counted because mountain yellow-legged tadpoles and frogs have evolved camouflage coloration and behaviors. Although detection of tadpoles has been difficult, we believe we will start to see metamorphosed froglets in the 2012 season.

The San Diego Zoo Institute for Conservation Research will continue to breed our captive frogs each year. We plan to reintroduce more tadpoles in 2012 with the goal of establishing a new population of frogs at the James Reserve, where they were once a common sight.



San Diego Zoo Institute for Conservation Research recently released 300 fertile Mountain Yellow-legged Frog eggs and 300 tadpoles into the same area where additional eggs and tadpoles were released in 2010. Photo: Ken Bohn, San Diego Zoo.



The Institute for Conservation Research at San Diego Zoo released 300 Mountain Yellow-legged Frog eggs into a stream on the University of California's James San Jacinto Mountains Reserve near Idyllwild, California. Photo: Ken Bohn, San Diego Zoo.

Oregon Spotted Frog – Endangered in British Columbia

Dennis A. Thoney, Ph.D., Director of Animal Operations, Vancouver Aquarium

The Oregon Spotted Frog, *Rana pretiosa* is the most endangered amphibian in Canada. Found only in British Columbia, this frog is listed as Critically Endangered under the federal Species at Risk Act and is Red-Listed (i.e., in danger of extinction) in British Columbia. Historically, Oregon Spotted Frog populations occurred throughout the Fraser Valley, from South Surrey to Hope. Currently, there are only three breeding populations of Oregon Spotted Frog left in British Columbia, with less than 300 breeding females in total.

The primary cause for the decline of Oregon Spotted Frog has been the loss of wetlands as the Fraser River floodplain was drained for agriculture. The impact is even greater when agricultural land is further converted to housing and urban development. In recent years, additional threats to the few remaining Oregon Spotted Frog populations also include pollution, invasive species such as bullfrogs, mining, and changed hydrology due to water level management.

The Oregon Spotted Frog Recovery Team, a diverse group of biologists and land managers, is coordinating efforts to conserve, manage and recover Oregon Spotted Frog in Canada. The team's key goals for the next 10 years are to maintain and expand the existing populations, as well as establish six additional self-sustaining populations in British Columbia.

The Vancouver Aquarium assists the Oregon Spotted Frog Recovery Team by maintaining a captive insurance population. This population now consists of 33 genetic strains of 1-10 frogs each. Additional eggs are collected each year to increase genetic heterozygosity.

In 2010, the Oregon Spotted Frog was bred for the first time in captivity. A combination of providing a seasonal photoperiod and temperature regime was crucial to the Aquarium's success. The few frogs that were mature enough this first year to spawn (2-3 year old animals) produced 291 tadpoles. Of these tadpoles, 68 metamorphs were released to a once occupied site in spring 2011.

Breeding was again successful in Spring 2011. With more frogs breeding, over 9,000 eggs were produced. Of the approximately 3,000 tadpoles hatched, 300 were used for enclosure survival studies, 300 were retained for radio tagging studies, and 50 were retained by the Aquarium to produce F2 generation animals. The rest of the tadpoles (over 2,000) were released along with the 68 metamorphs in spring 2011.

In 2011, the Vancouver Aquarium worked with a researcher, Vance Trudeau from the University of Ottawa, to test the AMPHIPLEX method which uses a combination of 2 hormonal substances to induce and synchronize spawning. Results suggest that hormone induction synchronized timing of spawn but did not increase spawning events or number of eggs. Frogs that were not environmentally cycled did not spawn. With many more frogs maturing over this winter, we expect to produce a magnitude more young in 2012. AMPHIPLEX will be tested again in 2012.

The Oregon Spotted Frog Recovery Team includes members from the BC Ministry of Environment, BC Ministry of Forests, Lands, and Natural Resource Operations, Canadian Wildlife Service, Department of National Defense, Seabird Island Band, District of Kent, Fraser Valley Regional District, Greater Vancouver Zoo, Vancouver Aquarium, Toronto Zoo, Mountain View Conservation Centre, Grouse Mountain Refuge for Endangered Wildlife, Simon Fraser University, University of British Columbia, BC Conservation Foundation, and Fraser Valley Watersheds Coalition.

In addition to ongoing support from the partners listed above, primary funders include: The Government of Canada Habitat Stewardship Program and Inter-departmental Recovery Fund, Habitat Conservation Trust Foundation, Wildlife Preservation Trust Canada, Endangered Species fund of Canadian Wildlife Federation, US Geological Survey State Wildlife Grant, Canadian Aquarium and Zoos Association among others.



Oregon Spotted Frogs, *Rana pretiosa*, in amplexus. The Vancouver Aquarium assists the Oregon Spotted Frog Recovery Team by maintaining a captive insurance population of the species. Photo: Lee Newman.



Oregon Spotted Frogs eggs at the Vancouver Aquarium. Photo: Lee Newman.

An effort to save the world's most endangered amphibians has won mongabay.com's 2011 conservation award

Amphibian Ark is working to evaluate the status of threatened amphibians, raise awareness about the global amphibian extinction crisis, and set up captive breeding programs.

The initiative is targeting 500 species "whose threats currently cannot be mitigated quickly enough to stave off extinction" - in other words, 500 species that will not survive without captive breeding efforts.

Nearly 1,900 (30 percent) of the 6,285 amphibian species assessed by the IUCN are threatened with extinction. Some 165 are known to have gone extinct and another 130 are "missing" - they haven't been seen in years and are possibly extinct.

"My love of amphibians is the reason I originally became interested in rainforests," said mongabay.com's president and founder Rhett A. Butler. "So this year I'm very happy to recognize an effort to save endangered amphibians from extinction. Amphibian Ark is playing a key role in coordinating captive-breeding programs and making people aware of the plight of many amphibians."

Kevin Zippel, Amphibian Program Director at Amphibian Ark, welcomed the award.

"It is a great honor to be recognized by mongabay.com for our conservation efforts," he said.

"Amphibians are truly precious, from their role in healthy ecosystems to their contributions to human medicine, and never before in their 360 million year history have they needed help more than now. This award and the attention it draws will help us in our efforts to rescue imperiled amphibians. On behalf of dedicated AArk partners around the world, and the amphibians themselves, we express our sincere gratitude."

Each year mongabay.com selects an organization to honor with its conservation award. The award includes a cash prize and prominent placement of mongabay.com's homepage and in its weekly newsletter for the month of December. Previous winners include AITo and the Nantu Forest Conservation Program (2010), WildlifeDirect (2009), Health In Harmony/Project ASRI (2008), and the Amazon Conservation Team (2007).



Update on *Oophaga lehmanii* at Cali Zoo

Camilo José Londoño Andrade, Director Center for Conservation of Endangered Amphibians, Cali Zoo

The Center for Conservation of Endangered Amphibians at Cali Zoo in Colombia has developed both *ex situ* and *in situ* conservation projects for Lehmann's Poison Frog, *Oophaga lehmanii*. Between 2008-2010 we conducted a project called "Handbook for captive breeding and management of Lehmann's Poison frog", which highlighted important information on courtship and parental care, as well as larval and metamorph development, including data on coloration changes in post-metamorphic frogs.

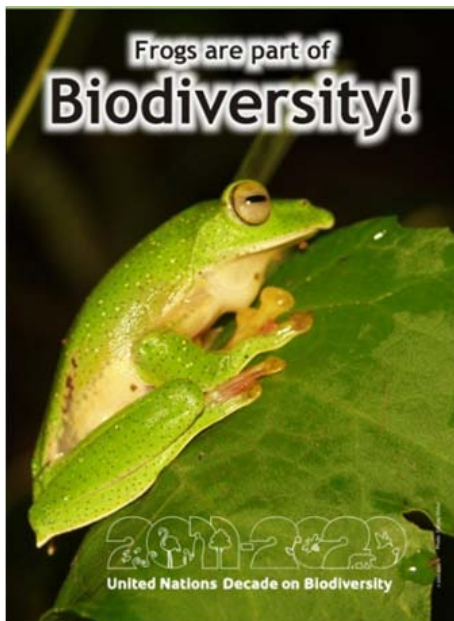
In 2009, we initiated *in situ* conservation efforts through the evaluation of the conservation status of this species and the viability of setting a natural reserve. We conducted four field trips to the Anchicayá region, the only area where the species had been historically reported. The information gathered showed that the species is still present in six localities within the Anchicayá area, though the animal density is often too low to allow populational studies. One of our most important achievements was to confirm for the first time that the species is present within the boundaries of the Farallones National Park, and despite the lack of quantitative data, our own impressions and reports by local farmers suggest that the species has been (and probably is still) over-exploited.

Therefore urgent conservation actions are required to protect remnant individuals. We are currently gathering additional information on the viability of establishing a natural reserve. All the informa-



Lehmann's Poison Frog, *Oophaga lehmanii*, is the subject of both *in situ* and *ex situ* projects at the Center for Conservation of Endangered Amphibians at Cali Zoo in Colombia. Photo: Gert Benaets.

tion we collected was summarised in a report entitled "Evaluación del estado de conservación de la rana venenosa de Lehmann (*Oophaga lehmanni*) con fines de establecer una reserva natural para su protección".



Zoo Outreach Organisation's amphibian conservation education materials for Wildlife Week

Rengasamy Marimuthu, Senior Education Officer, Zoo Outreach Organisation

Zoo Outreach Organisation revised and updated its amphibian packets in striking colour with the title "Frogs are part of Biodiversity - Frogs need Forests". Three thousand education packets and posters were printed with the magnificent support from Amphibian Ark.

The amphibian education packets consist of a booklet which contains information about all three Orders of amphibians, including why amphibians are important, details about South Asian amphibians and how can we help to save them, global and regional amphibian programs and information about the work that Amphibian Ark has been involved in for the last five years. The packets also contain a frog mask and a placard promoting the Amphibian Ark's global amphibian campaign, a sticker and a rakhi (wristband).

Large posters were also produced, featuring 15 South Asian amphibians, with each one representing a Family which is found in South Asia. Information about the three Orders of amphibians and each Family was provided on the back of the posters.

These materials were distributed during India's Wildlife Week celebration which is a mega environmental awareness-creating event in India and it has been celebrated for the past 56 years from 1-7 October. This year's wildlife week was unique because there are so many campaigns happening around the world concurrently. There are three major campaigns, the International Year of Forests (2011), the Year of the Bat (2011-2012), and the UN Decade on Biodiversity (2011-2020).

Zoo Outreach Organisation received 71 requests for the amphibian education materials from all over India. The requests came from 30 forest department personnel, 13 non-governmental organizations, 11 zoos, 11 education institutions, 1 museum and one of the Zoo Outreach Organisation's volunteers. They conducted amphibian education programs and are sending us their reports. Here are a couple that have been received already:

Ms. Jessie Jeyakaran, a retired teacher and volunteer educator, conducted a program at St. Christopher's Teachers Training College, Chennai for 60 first and second year students. She first shared information about Amphibian Ark, the Year of the Frog and the institutions that sponsored the Zoo Outreach Organisation's amphibian kits. After that she introduced the amphibian kits and conducted an educational program. This program was sponsored by NESSA.

Mr. Ramesh, who is running an NGO called NEST in Usilampatti, conducted a program at Madura College, Madurai, Tamil Nadu in association with the PG Department of Zoology. Around 84 students from Meenakshi Government Arts and Science College for women, The American College, Sourashtra College, Madura College Higher Secondary School and Madura College participated and were enlightened with information about amphibians and their conservation.

Dr. S. Dinakaran gave a talk on facts and myths about frogs. Masks, bracelets and placards featuring frogs were distributed to the students and they were asked to wear them and to dramatize the need for conservation to the audience in the form of skits. Feedback was then received from the audience. The amphibian poster was displayed in the venue and distributed to the representatives of the colleges who attended the workshop. The students were awarded with participation certificates.

Dr. Arun.A.Sha, a Senior Wildlife Veterinary Officer with Wildlife SOS, Bannerghatta Bear Rescue Centre, conducted a program on October 5th at Bannerghatta Biological Park, Bangalore with assistance from Gopi Janarthanan and other SOS volunteers and their staff. In this program children who were visiting the zoo and their parents were targeted and were given information about the need for amphibian conservation by using the education kits. The kits were very useful, not only to the children, but also the adults showed a great deal of interest.

South Asian Amphibians



Large posters were produced for distribution during India's Wildlife Week. The posters featured 15 South Asian amphibians.



Ms. Jessie Jeyakaran, a retired teacher and volunteer educator, talks about the South Asian Amphibians poster, during her educational program in Chennai.



Bell frog



Red-eyed tree-frog



Brown and green tree-frog



Strawberry poison dart frog

Frog paintings by Frank Beifus

Florida-based wildlife artist, Frank Beifus has very generously made ten of his beautiful frog paintings available for Amphibian Ark supporters, and the exclusive price of **US\$150 each**, which includes packaging and shipping. **100% of the profits from the sale of these paintings will be provided for Amphibian Ark conservation projects.**

Each of these spectacular paintings measures 24" x 24" (except for the Brown and green tree-frog, which is 24" x 18") and are acrylic on canvas.

Frank spent seven years working as an artist at Walt Disney World in Orlando, with the last three years spent at Disney's Wild Animal Kingdom.

If you would like to order one of these wonderful paintings, please email webmaster@amphibianark.org and let us know which painting(s) you would like. We'll provide you with payment details, and your painting will then be shipped to you.

Not only will you have a wonderful piece of artwork for your home or to give as a gift, but you'll be supporting amphibian conservation projects with your purchase.

Larger versions of these images can be seen on our web site www.amphibianark.org/frog-paintings/



Panamanian golden frog



Blue poison dart frog



Mimic poison dart frog



Gulfaducian poison dart frog



Spotted-thighed tree-frog



Golden poison dart frog

Progress report on the Mitsinjo captive breeding and husbandry research facility

Devin Edmonds, Project Director, University of Wisconsin-Madison

The area around Andasibe in east-central Madagascar supports more than 100 species of frogs. Mitsinjo, a community-run conservation organization based in Andasibe, has recognized the importance of their uniquely rich amphibian fauna by developing a captive breeding and husbandry research facility at Analamazaotra Special Reserve. This project addresses the potential threat of the globally-spreading amphibian disease chytridiomycosis, for which one of the few conservation actions to take is to establish assurance populations of threatened species in captivity for supplementation or reintroduction efforts.

Project goals of the Mitsinjo breeding and research facility are to 1) build capacity locally to manage captive populations of amphibians from around Andasibe, 2) conduct husbandry research on frog species which have never been kept in captivity, to better understand their life histories and facilitate rescue operations should the need arise in the future, and 3) establish captive assurance populations and develop associated conservation programs for threatened frog species from the Andasibe area to safeguard against extinction.

Fund-raising began in 2009, and the physical construction of the facility started in November of 2010. Throughout the last 12 months progress has been made in many areas, with the newly constructed biosecure building now supporting both captive frogs as well as locally-sourced live foods, which are being maintained by Mitsinjo technicians.

Major accomplishments include:

- Construction of a 185 square metre biosecure facility for keeping local species of frogs and insects.
- Developing breeding techniques for locally-sourced invertebrates, including three different species of cricket, a fruit fly, a Collembolan, and a cockroach.
- Producing live foods in quantities large enough to feed a captive population of more than 80 individual frogs.
- Participation in a week-long training program on the basic biology and conservation of amphibians by 14 members of Mitsinjo.
- Enrolment in an intensive two-month course on captive amphibian husbandry by five members of Mitsinjo, who are now working as technicians at the facility.
- Acclimating four common local species of frogs (*Blommersia blommersae*, *Boophis pyrrhus*, *Heterixalus betsileo*, *Mantidactylus betsileanus*) to captivity.
- Successfully breeding both groups of captive *Mantidactylus betsileanus*, and using resulting tadpoles in a pilot study on the optimal larval diet for this species.
- Developing a Contract of Collaboration with project partners the DGF and the Amphibian Specialist Group.
- Conducting a training workshop in techniques to culture live foods with two staff from the University of Antananarivo Département de Biologie Animale.

This project is part of the Sahonagasy Action Plan, which is the national conservation strategy for the amphibians of Madagascar, and is in collaboration with the IUCN Amphibian Specialist Group and Le Directeur Général des Forêts.

Acknowledgements

We would like to recognize the help and support of two volunteers who assisted with the project this year, Jaclyn Entringer (North Olympic Salmon Coalition) and Matt Ward (Cardiff University), as well as the time given by Jennifer Pramuk (Woodland Park Zoo) and Ron Gagliardo (Amphibian Ark) during training activities in February and March. Mitsinjo is also grateful to Franco Andreone, Kevin Zippel, Ché Weldon, and Gerardo Garcia, who offered input and advice during the initial planning of the project and original blueprint designs for the facility.

More information can be found on the Association Mitsinjo web site, www.mitsinjo.org



Terrariums housing frogs and tadpoles which have been used for training since early April, 2011. Photo: Devin Edmonds.



Boophis pyrrhus, one of the local species being housed at Mitsinjo, a community-run conservation organization based in Andasibe, Madagascar. Photo: Devin Edmonds.

The role of Fundação Parque Zoológico de São Paulo in amphibian conservation

Cybele Sabino Lisboa, Reptile/ Amphibian / Invertebrate Curator, Fundação Parque Zoológico de São Paulo

The last two years have been extremely significant for Fundação Parque Zoológico de São Paulo (FPZSP) in advancing our amphibian conservation activities. Part of our efforts were focused on the *ex situ* conservation project for the Critically Endangered species of tree-frog *Scinax alcatraz*, which is endemic to Ilha dos Alcatrazes. During this period, the first phase of the project was completed, which consisted of developing a husbandry and captive breeding protocol for an analogue species, *S. perpusillus*. After this, the FPZSP moved ahead to the second phase, which consisted of applying all the techniques acquired to the more endangered species, *S. alcatraz*.

Before acquiring the founders for the *ex situ* population of *S. alcatraz*, we built a biosecure facility to house the animals, with the main goal of keeping a healthy and safe population in captivity. Some of the husbandry management equipment was supported through the Amphibian Ark Seed Grant in 2011.

In October 2011, an expedition to Ilha dos Alcatrazes was undertaken, to collect the founders, estimate the size of the wild population and to collect animals for research into the presence of *Batrachochytrium dendrobatidis*. The founders have been kept at São Paulo Zoo for a month now and they appear to be very well adapted, although they are still in an observation and adaptation period. In the near future, the necessary techniques to stimulate reproduction will be applied as the next phase of the project.

Another new activity at the FPZSP is an exhibit exclusively dedicated to amphibians called “O Pulo do Sapo” (The leap of the frog). This is a unique exhibit in Brazilian zoos and was opened in 2010. The main goal of this initiative is to educate, engaged and stimulate our visitors about amphibian conservation. Through surveys with our visitors we received good responses about people’s perceptions of the exhibit and the messages São Paulo Zoo is providing. The results were excellent and the amphibian exhibit is one of the most popular at the zoo.



The Critically Endangered tree-frog *Scinax Alcatraz*, was recently collected for an *ex situ* population at São Paulo Zoo. Husbandry techniques developed by housing a surrogate species, *S. perpusillus* are being applied to this more threatened species. Photo: Cybele Lisboa.



During 2011 we also created a project called “Pulando na Conservação” (Jumping on Conservation), which is the development of an action plan for amphibian conservation, undertaken by the Amphibian Section, in conjunction with other areas of the zoo such as the veterinary department, engineering, nutritionists, education, environmental management and marketing. The idea is to develop a cutting edge plan for amphibian conservation in Brazil.

The main goal of the project is to consolidate FPZSP as a reference center for amphibian conservation education, as well as developing husbandry techniques to maintain amphibian species for both short-term rescues and long-term breeding programs and to increase captive breeding of Brazilian’s amphibians. We also hope to establish a communication bridge between the scientific community and Brazilian zoos, by breeding animals to facilitate scientific research with captive amphibians in areas such as biology, husbandry and medicine, as well as being involved with *in situ* conservation projects.

The next step of this project, which will be developed in 2012, is the exhibit extension of “Pulo do Sapo”, building an amphibian breeding laboratory, which will enable our visitors to see the work being carried out by keepers and biologists, as well the acquisition of new species for display and for use as flagship species for education purposes.

Fundação Parque Zoológico de São Paulo is excited to be collaborating with the AArk’s Leaping Ahead of Extinction campaign during the week preceding Leap Day (February 29, 2012). All of the current education activities which have been developed by FPZSP will address this theme exclusively, in an attempt to reach a larger number of visitors, and to sensitize them to the cause.

1st International Week for Amphibian Conservation and Assessment

Luis Carillo, General Curator, Zoofari

April 28 2011 was declared as the World Day of Amphibians. To celebrate it the Secretaría de Medio Ambiente e Historia Natural (SEMAHN) and the Universidad de Ciencias y Artes de Chiapas (UNICACH) in Mexico, in conjunction with state and national institutions and organizations coordinated the 1st International Week for Amphibian Conservation and Assessment. This event was celebrated from the 26–28 April at the Miguel Álvarez del Toro Zoo and the Biology Faculty of the UNICACH.

Objectives of the event were: 1) to inform the general public about the importance and delicate conservation situation of amphibians both in Chiapas and México, 2) to present the book “Strategy for the Conservation of Critically Endangered Amphibians in Chiapas”, which documents proposed actions and strategies to avoid further declines of amphibian species, and 3) to present the logo of the Network for Conservation of Amphibians in Chiapas.

To promote some of the objectives proposed, different activities were developed, including a photograph raffle, drawing, sculpture and photography contests, a photography exhibition called “Anfibios Mexicanos”, and conferences. More than 12,000 people visited this event which was advertised on radio, TV, social networks, etc.

The Strategy for the Conservation of Critically Endangered Amphibians in Chiapas initiative is the first within Mexico and encompasses the efforts of governmental and non-governmental organizations.

If you would like additional information, please contact Roberto Luna Reyes red__anf.chiapas@hotmail.com or rlr07@hotmail.com



People visit Fukushima Museum to see the frog exhibition

Vikki Takayama, Curator, 100 Year Frog Collection Museum

An exhibition from the 100 Year Frog Collection Museum was held on site at Fukushima Museum in Aizu in Fukushima prefecture between August 13th and September 19th in 2011. At present, the 100 Year Frog Collection museum and Kayale University can be seen only on its web site, (www.kaeru-kan.com/kayale-u)

The 100 Year Frog Collection Museum is operated online by the grand-daughters of the founder of the museum's frog collection. The director is Keiko Takayama, and I'm Vikki Takayama, the curator of the museum. Our family has collected about 8,000 frog-related items from around the world for over 100 years.

The exhibition was in support of the people of Fukushima who experienced great hardship due to the earthquake on 11th March in 2011. Two thousand three hundred items of the collection were displayed in the 750 square meter special exhibition space. The exhibition was classified into eleven categories:

1. The materials used in the frog items (wood, stone, clay, metal, etc).
2. The shape and pose of the frog (happy frogs, frogs sitting on a lotus, etc).
3. Everyday items that have a frog motif (cups, toiletry items, perfume bottles, etc).
4. Frog items classified by the five continents.
5. Frogs depicted in fairy tales (dolls and items related to the books by the Brothers Grimm, Hans Christian Andersen, Lewis Carroll, Kenneth Grahame, Beatrix Potter, Arnold Lobel, etc).
6. Japanese frog animation characters and popular frog products in Japan, plus Kermit the Frog.
7. Name brand accessories and ornaments made by Western companies (Baccarat crystal, Wedgwood porcelain, Nymphenburg porcelain, etc).
8. Artwork with a frog motif made by a Japanese artist.
9. Frog items and themes used in ancient Japanese culture.
10. Articles, letters and items that have a strong connection to the Takayama family (the collection's owners).
11. The Ichia Ozawa frog collection.

During his lifetime, Ichia Ozawa (1876-1960) amassed a large collection of frog items. His family donated part of the collection to our museum.

It was with great honor and pleasure that we held the exhibition at Fukushima museum. Finally, I would like to thank Zenryuji and all those organizations and individuals who made this event possible.



Japanese frogs carved from wood.
Photo: Hiroyuki Taniguchi.



Above: Frogs by Shigaraki pottery. Below:
Flower vases with frog motifs.
Photos: Hiroyuki Taniguchi.



Amphibian Ark donors, January-November 2011

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