

Amphibian Ark

Rescuing amphibians in crisis

*Saving species that cannot currently
be safeguarded in nature*





amphibian ark

Rescuing amphibians in crisis

Amphibian Ark was set up in response to the first Global Amphibian Assessment



We were established by:



The IUCN Species Survival Commission's

- Amphibian Specialist Group (ASG)
- Conservation Planning Specialist Group (CPSG)

And:



The World Association of Zoos and Aquariums
(WAZA)



amphibian ark

Rescuing amphibians in crisis

Triumverate of global amphibian conservation organisations



Amphibian Specialist Group (ASG)



Amphibian Survival Alliance (ASA)



Amphibian Ark (AArk)

Shared vision:

Amphibians Thriving in Nature





amphibian ark

Rescuing amphibians in crisis

Species Rescue

Amphibian Ark focusses on species likely to become extinct before threat mitigation can occur

For these:

- *ex situ* species rescue programs are the only chance for survival
- the aim is to ensure a healthy population for eventual release





amphibian ark

Rescuing amphibians in crisis



Species Rescue

- Where threats are potentially reversible
- Typically, when species are facing threats like
 - Emerging infectious disease
 - New invasive species
 - Extreme weather events
 - Habitat destruction where restoration is scheduled
- Species limited in distribution most vulnerable



amphibian ark

Rescuing amphibians in crisis

How big is this challenge?

Amphibian Ark's *Conservation Needs Assessment* process:

- needs-based species prioritisation tool
- an ancillary to amphibian Red List assessments
- For each species assessed, it:
 - diagnoses the need for various categories of conservation action
 - identifies the species likely in need of rescue





amphibian ark

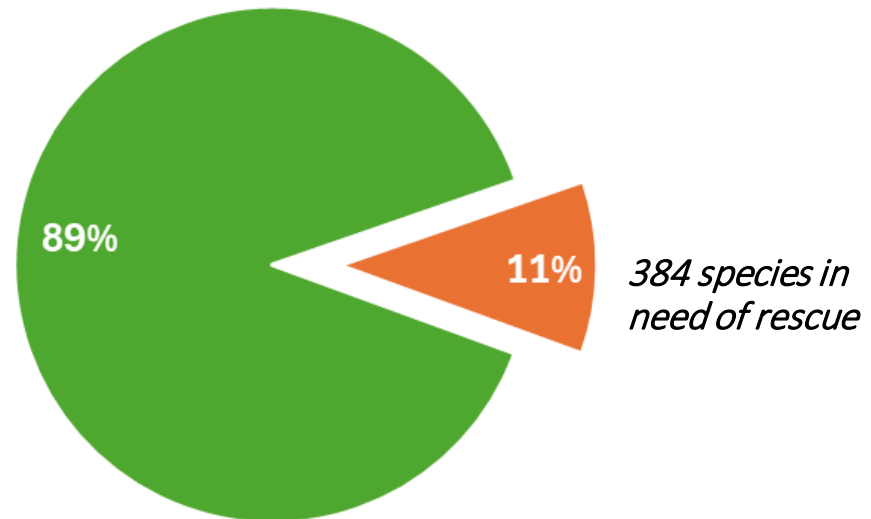
Rescuing amphibians in crisis

How big is this challenge?

- Over 3,500 species of amphibians have been evaluated to date using AArk's *Conservation Needs Assessment* process

Species that have had their conservation needs assessed

3,156 species not in need of rescue



Tapley *et al.* (in press). Conservation Breeding. In: IUCN SSC Amphibian Specialist Group *Amphibian Conservation Action Plan*, Chapter 11



amphibian ark

Rescuing amphibians in crisis

The need for species rescue is growing

- Transport of people and goods
 - Re-distributing species and disease
- Climate change
 - Increasing frequency of extreme weather
 - Creating conditions for re-distributed species and disease
- Evolving licensing practices for the extractive industry
 - Increasing requirement for end-of-project ecological remediation
 - Provides a trajectory for rescue





amphibian ark

Rescuing amphibians in crisis

Species rescue: the global context

- Convention on Biological Diversity (CBD): Global Biodiversity Framework
 - Adopted by 196 nations in December 2022
 - Sets out biodiversity targets to be achieved by 2030

- Target 4: Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts





amphibian ark

Rescuing amphibians in crisis

Species rescue: the global context

- Convention on Biological Diversity (CBD): Global Biodiversity Framework
 - Adopted by 196 nations in December 2022
 - Sets out biodiversity targets to be achieved by 2030

- Target 4: Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts

- Likely extinction rate for amphibians over past 18 years:
 - 1 species of amphibian every 8 months
 - Many preventable through species rescue





amphibian ark

Rescuing amphibians in crisis

Rescuing Amphibians in Crisis

Saving species that cannot currently be safeguarded in nature



Prioritising species
in need of rescue



Building capacity in
range states



Supporting species
rescue programs



amphibian ark

Rescuing amphibians in crisis

Progress...



- Developed a suite of internationally-recognized amphibian conservation assessment tools
- Conducted *Conservation Needs Assessment* workshops for **3,565** species across **51** countries
- Trained **2,840** practitioners across **34** countries in amphibian rescue and management
- Developed a comprehensive, online amphibian husbandry library – free to access



amphibian ark

Rescuing amphibians in crisis

Progress...

- Provided funding for species assurance programs in **22** countries
- So far, these have been successful for **37** of the world's most at-risk frogs and salamanders (more are in progress...)
- Reintroductions have begun for **8** of these species across **5** countries



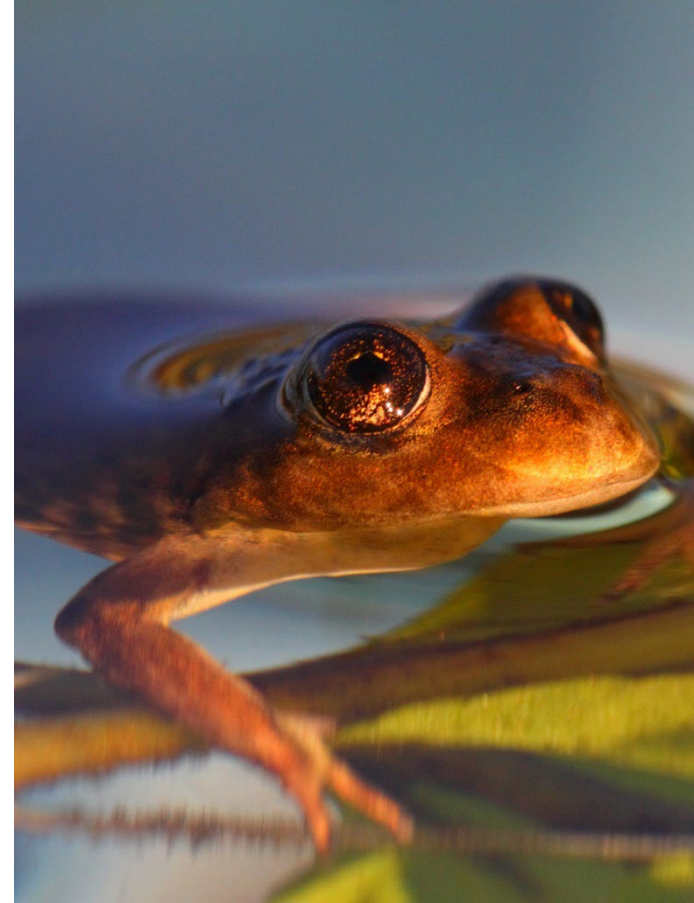


Valcheta's Frog: an Amphibian Ark success story

Valcheta's Frog, *Pleuroderma somuncurens*



- Argentinian micro-endemic: found in only 10 km of stream in northern Patagonia
- Threatened by land management practices and invasive species



AArk CNA
Argentina: 15
participants

AArk seed
grant
awarded

Threat
mitigation
begins

2010

2011

2014

2015

2016

2017

AArk training
course:
amphibian
conservation
management

Ex Situ
population
established

1st release
trials
initiated

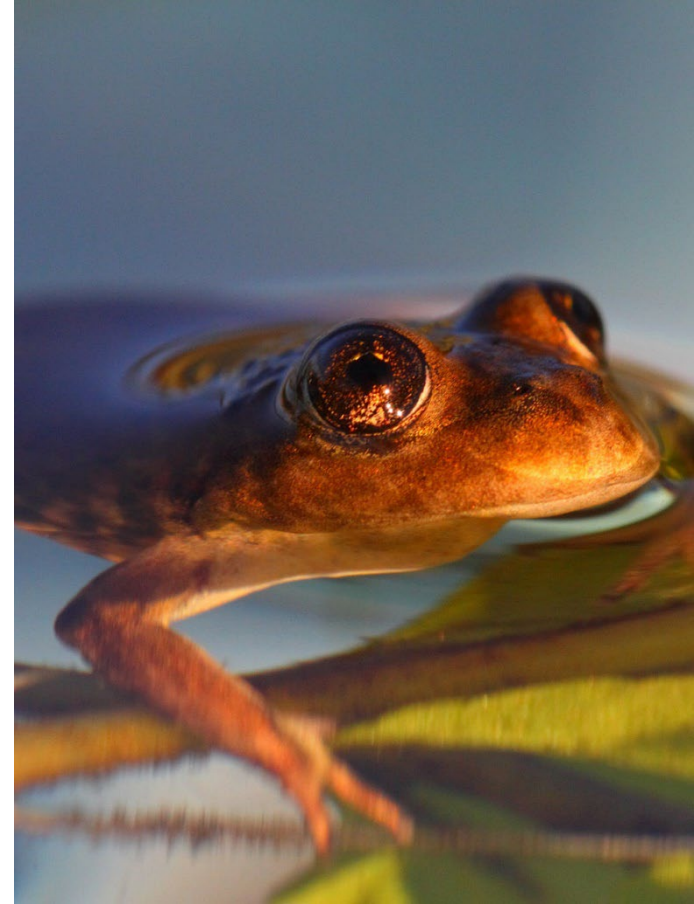


Valcheta's Frog: an Amphibian Ark success story

Valcheta's Frog, *Pleuroderma somuncurens*



- Argentinian micro-endemic: found in only 10 km of stream in northern Patagonia
- Threatened by land management practices and invasive species



AArk CNA
Argentina: 15
participants

AArk seed
grant
awarded

Threat
mitigation
begins

2010

2011

2014

2015

2016

2017

AArk training
course:
amphibian
conservation
management

Ex Situ
population
established

1st release
trials
initiated

F2 breeding
recorded

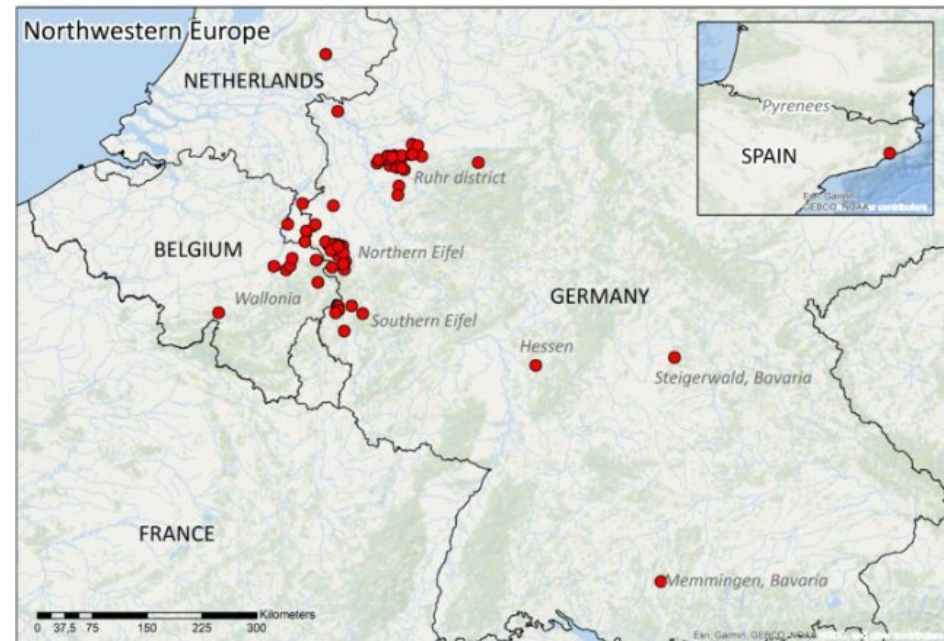


amphibian ark

Rescuing amphibians in crisis

Bsal in Europe

- Fungal disease - relative of Bd
- Thought to have arrived in Netherlands ~2008
- Spreading eastwards and southwards
 - Within 7 years, detected in Germany and Belgium
 - Subsequently found in Spain
 - Detected more widely in captive animals



<http://bsaleurope.com/european-distribution/>



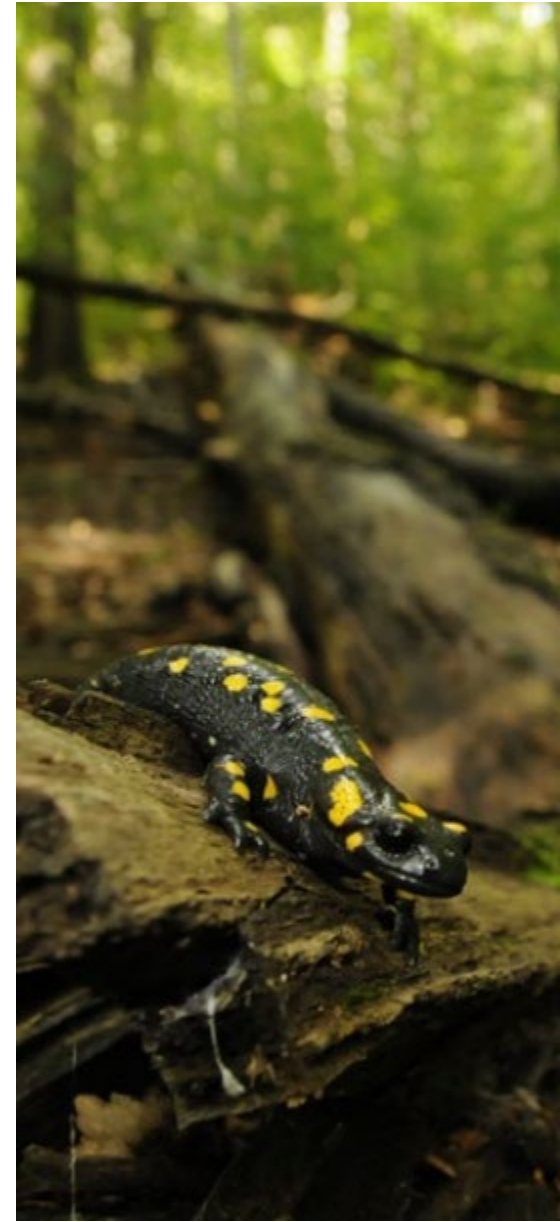
amphibian ark

Rescuing amphibians in crisis

Bsal in Europe

- Europe rich in salamander diversity
- 75% species are highly sensitive to Bsal
 - Infection causes **>80% mortality**
- 25% of species in path of the disease have both
 - Acute sensitivity
 - limited distribution
- Designated at **high risk** of extinction within 10 years
- Further 15% designated **medium risk**

European Commission (2020): Mitigating *Batrachochytrium salamandrivorans* in Europe





amphibian ark

Rescuing amphibians in crisis

Bsal in Europe

- EU Action Plan (2020) recommends
 - Initiation of *ex situ* rescue programmes for all 10 **high risk** species
 - Preparation for *ex situ* rescue programmes for all 6 **medium risk** species
- Currently only one of the **high risk** species is in an organised zoo programme

European Commission (2020): Mitigating *Batrachochytrium salamandrivorans* in Europe

Mitigating *Batrachochytrium salamandrivorans* in Europe

Batrachochytrium salamandrivorans Action Plan for European urodeles





amphibian ark

Rescuing amphibians in crisis

Impediments

- Momentum - planning time lag
- Regulatory restrictions
- Operational complexities
 - Uncertainty – how long for?
 - Quarantine requirements
- Cost





amphibian ark

Rescuing amphibians in crisis

Incentivising Species Rescue

Establish EU/Government/zoo partnerships for species rescue:

- Establish funding partnerships
- Streamline approvals for conservation outcomes
- Establish end-point commitments where possible





Amphibian Ark

Rescuing amphibians in crisis

