



Mapping UNSW Impact Global Development

Primary SDG	15: LIFE ON LAND
Broad theme	Conserving amphibians in Southeast Asia
Research	Identifying and researching amphibian species in Southeast Asia to determine extinction threats and conservation solutions
Impact region	Southeast Asia (Cambodia, Vietnam, Laos, Indonesia, Southern China)
Faculty	Science
School/Institute	UNSW/Australian Museum
Academic	Dr Jodi Rowley
Project partners	Vietnam National University – University of Science
	Hoang Lien National Park (Vietnam)
	Hong Duc University (Vietnam)
	Institut Pertanian Bogor (Bogor Agricultural University, Indonesia)
Related SDGs	13: Climate action

Elevator pitch

With global amphibian numbers in decline, Jodi and her team identify and assess threats to amphibian species in Southeast Asia and train locals to do the same, conserving a vital ecosystem member for the future.

The Challenge: How many amphibians are facing extinction in SE Asia?

The number of frogs and other amphibians in the world are declining faster than birds and mammals. Over 40% of 7,000 amphibian species known are under threat from deforestation, disease and the growing presence of humans, some of whom rely on amphibians as a food source.

In Southeast Asia, little is known about the number of amphibian species. Due to some of the highest deforestation rates on the planet, and harvesting for the food and pet trade, around one fifth of Southeast Asian amphibian species are listed as threatened. The actual number is probably higher. New species are being identified regularly but basic information about their history and likelihood of extinction are lacking.

Amphibians are vital to a healthy ecosystem. Tadpoles are big consumers of algae, keeping flowing waters clean, serving as a key food source for another animals, and helping to keep mosquito populations at bay. Frogs are large consumers of invertebrates including crop pest species, they are a food source for an array of mammals, birds and reptiles, and they are important source of protein for local communities.

UNSW's solution: Find and assess amphibian species on the ground, build local conservation efforts

Since 2006, Jodi has completed 27 expeditions to Southeast Asia in search of amphibian species. Her and her team travel to remote, forested areas usually on foot and at night to record frog calls, take samples, and test for disease. Incorporating biological, behavioural and molecular data, Jodi and her team have identified 24 new species in Vietnam, Laos, Cambodia and China.

They are also responsible for determining the global threat status of all mainland SE Asian amphibians via the IUCN Red List of Threatened Species. This list is a useful resource for local rangers, communities and conservationists looking to prioritise conservation money and time.

To ensure conservation of amphibians continues in the region, Jodi and her team train and educate locals and students in Vietnam, Cambodia and Indonesia to encourage the study and preservation of amphibians. This includes training courses and supervising local Masters and PhD students. With further funding, she would like to bring Southeast Asian students to UNSW to develop their skills further and to take UNSW students to Southeast Asia for in-field research and conservation experience.

The Impact: Preserving a vital ecosystem member, helping amphibians worldwide

Due to deforestation and urbanisation, it is a race against time to determine how amphibian diversity is distributed on the planet and which species are under threat. Without Jodi and her team, many species in the region may disappear. This could disrupt the ecosystem with consequences including more mosquitos carrying disease, animal populations coming under threat from predators who would normally eat frogs, and a reduction in water quality that could impact animals and humans.

Since 2006, Jodi has trained dozens of local students and early-career conservationists and academics, providing work and future careers for local women and men. Their efforts could also instruct amphibian conversation research around the world. A fungus that is currently causing amphibian population declines around the world may have originated in SE Asia. How SE Asian frogs live with the disease could prove insightful for research and conservation efforts in North America, Europe and Australia.

Researcher

Jodi studied her undergraduate degree at UNSW and completed her PhD on frog behaviour at James Cook University in 2007. She began working on Southeast Asian amphibians in 2006, while based in Cambodia. She is currently Curator of Amphibian & Reptile Conservation Biology at the Australian Museum, a joint appointment with UNSW. Jodi fell in love with frogs during her undergraduate fieldwork at UNSW.

Ben Falkenmire 19.09.17