

Conservation Needs of the Andean Frogs of Peru

Ariadne Angulo

Frogs of the *Batrachophrynus* and *Telmatobius* groups are aquatic and semi-aquatic, mid-to high elevation amphibians that are distributed in the Andes of Ecuador, Peru, Bolivia, Chile and Argentina. Dramatic population declines have been reported for several species, and it is now thought that these Andean amphibians are severely threatened. A number of possible causes have been proposed for these declines, e.g., pollution, human consumption, disease, and climate change. Peru is considered a hotspot for these frogs; it is home to at least 40% of all known species of *Telmatobius* and 100% of all *Batrachophrynus*, so the stakes are high in this country. Given the critical situation faced by these Andean frogs, identifying and quantifying threats and their impact on wild populations is an urgent need in order to better inform conservation action. In this light, and using information from the Global Amphibian Assessment/IUCN Red List of Threatened Species and Peru's Instituto Nacional de Recursos Naturales (INRENA) categorisation of threatened species, the following issues are addressed:

The Current State of Conservation Knowledge of Andean Frogs in Peru

Of a total of 25 species of Andean frogs reported for Peru, 80% are considered to be globally threatened by IUCN, while INRENA considers only 21.73% to be threatened.

The Most Pressing and/or Pervasive Threat Factors

Five factors have emerged as playing a role in population declines: disease, habitat degradation and destruction, harvesting, introduced species, and pollution. For about half of the species the threats are either unknown or there

is insufficient information from which to draw inferences. Of those identified factors, water-associated pollution and harvesting are the prominent factors affecting the greatest number of species, followed by habitat degradation and destruction, introduced species (trout) and disease (chytrid fungus). In addition, recent research suggests that extreme climatic variation may be a factor impacting high altitude amphibian populations.

Their Conservation Needs

Andean frogs are taxonomically complex and generally poorly understood, so using novel approaches to identify the different species, as well as conducting ecological studies will help in addressing the issues of species identity and the frogs' ecological requirements. In addition, monitoring populations and determining the relative contributions of threat factors are needed for a better understanding of population declines. Some factors (e.g., habitat degradation, pollution and introduced species) are also likely to affect other species and entire ecosystems, so conservation actions addressing these factors are bound to benefit more than just frogs. Multidisciplinary studies would be best suited to address these issues.

Although these research actions can help us understand declines better, these will continue to occur if no immediate action is taken. Emergency conservation measures can preliminarily address the more tangible anthropogenic factors. One measure that needs to be implemented as soon as possible is that of public outreach, where programmes showcasing the frogs, their habitats and the threats they face would help to increase awareness of their plight.



A vendor shows different body sizes and dorsal patterns of frogs sold at her stand

Conservation of Andean frogs will require substantial effort and commitment from a variety of decision-makers and stakeholders. The survival of these unique creatures and the health of their ecosystems will be severely compromised if no action is taken.

Originally published as:

Angulo, A. 2008. Conservation needs of *Batrachophrynus* and *Telmatobius* frogs of the Andes of Peru. *Conservation & Society* 6(4): 328-333.

Ariadne Angulo (ariadne.angulo@utoronto.ca) is currently the Focal Point for the IUCN Red List amphibian database (formerly the Global Amphibian Assessment), and is also the Focal Point for the IUCN Amphibian Specialist Group Red List Authority.