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SPECIAL EDITION

**Collaborating for
Conservation Success**

**Million Dollar Fund
for Frogs**

**2014
Year of the
Salamander**

Recent Publications

And Much More!

Fire Salamander (*Salamandra salamandra*)

Photo: Jelger Herder.



**Leaping to the
Rescue**



**Ecological Service
of Frogs**

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Cape Collaborations For Amphibian Solutions

By ¹John Measey, ²Wendy Annecke, ³Sarah Davies, ⁴Cliff Dorse, ⁵Louise Stafford, ⁶Krystal Tolley & ⁷Andrew Turner

South Africa's Cape region is renowned for its high floral biodiversity with over 9,000 species of vascular plants, it comprises an entire floral kingdom in a very small area (1). The same region has also long been recognised as being special for amphibians (2,3). Although only comprising Anura, three genera are endemic, and a recent review of global vertebrate turnovers highlighted this area as distinct from most of continental Africa (4). At the extreme south-western corner of the Cape lies Cape Town, situated at the north end of the Cape peninsula (Fig. 1), a chain of mountains that runs around 60 km from Cape Point to the city bowl. The Cape peninsula today is a virtual island, surrounded by a sea of human habitation (estimated as 3.8 Million humans in 2008) in the larger City of Cape Town area (5). This significant urbanization in a biodiversity hotspot has resulted in a large number of threatened species, including frogs. A diverse range of stakeholders need to work together to ensure that threat levels for these species and their habitat do not escalate (5).

Here we highlight some examples of collaborative efforts that focus on the conservation of threatened amphibians in the City of Cape Town. While none of these has yet achieved a reduction in threat status, this is seen as the goal for each project. Our exemplars show that different collaborative approaches are appropriate for different species, mostly based on the stakeholders involved as well as the threats that act upon the species.

THE WESTERN LEOPARD TOAD

Half of the distribution and most of the genetic diversity of the Western leopard toad (*Amietophrynus pantherinus*; IUCN Endangered) is found in the "southern suburbs" of the City of Cape Town, coinciding with acid soils of the Sand Fynbos (7,8; Fig. 1). Like many large bufonids, it undergoes annual migrations to and from large open water-bodies, in which a number of adults congregate during the austral winter (typically August). Most of the breeding sites are managed by the City of Cape Town municipality, but after breeding has concluded the toads move to a variety of areas, many of which are private gardens. The conservation of this species relies on a good understanding by members of the public of the accommodation of toads in their gardens, as well as help across hazardous roads during migration events.

The Western Leopard Toad Conservation Committee (WLT-CC) arose as a result of a stakeholders meeting held in 2009. It includes members from each of the extant volunteer groups as well as representatives from the official conservation bodies: South African National Biodiversity Institute, CapeNature, South African National

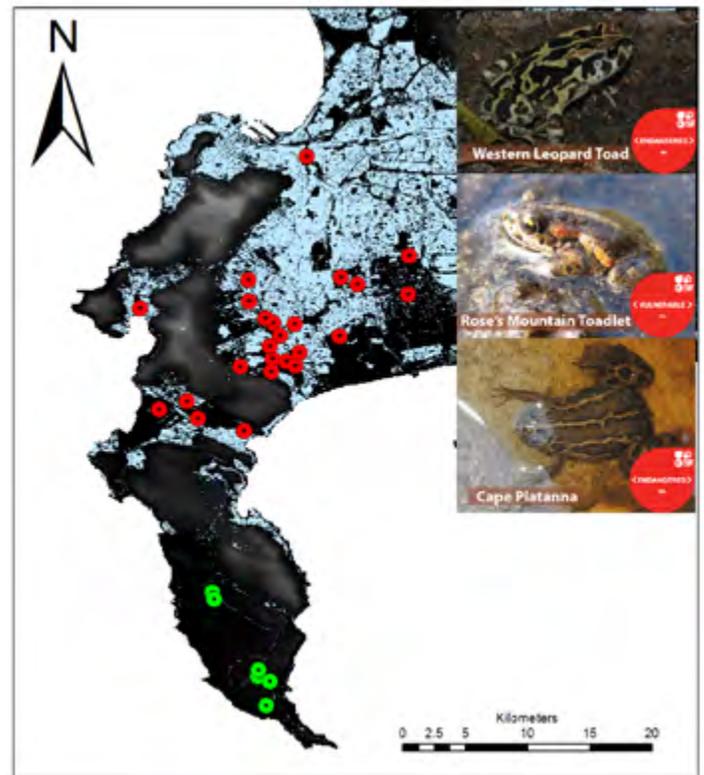


Fig. 1: Urbanization of the City of Cape Town (blue shading) impacts much of the region's biodiversity, including the frogs. Differing threats and stakeholders require different approaches to conservation actions that involve various collaborative efforts. Inset (from top to bottom): the Western leopard toad (*Amietophrynus pantherinus*) breeds in urban areas (red circles) and requires buy-in from a large number of stakeholders to ensure its protection, especially during migration. Rose's mountain toadlet (*Capensibufo rosei*) is reduced to only two known breeding sites whose locations are undisclosed. The western distribution of the Cape platanna (*Xenopus gilli*; green circles) is restricted to the Cape of Good Hope Section of Table Mountain National Park.

Parks and the City of Cape Town. Regular meetings are held at strategic times throughout the annual cycle of the toad. The WLT-CC is able to coordinate the conservation effort and has made significant advances to the City of Cape Town planning guidelines, habitat restoration, education as well as migration awareness. These areas are each fully discussed in a *FrogLog* article published in 2012: Conservation of the Western Leopard Toad by a dedicated multi-stakeholder group in the City of Cape Town (7).

Invasive species are known to threaten the Cape's amphibian species (9). A newly emerging threat comes from Guttural toads (*Amietophrynus gutturalis*) which are expanding into the Western leopard toad's breeding habitat after being introduced from elsewhere in South Africa. This situation is being tackled by another collaborative effort (10): The CAPE Invasive Alien Animal Working Group (CAPE-IAA) is made up of representatives from University of Cape Town, University of the Western Cape and Centre for Invasion Biology (Stellenbosch University), Cape of Good Hope SPCA, Natural Resource Management Programmes, South African National Bio-

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diversity Institute, CapeNature, South African National Parks and the City of Cape Town. This initiative plays a crucial role in providing a forum to reach consensus on issues relating to invasive animals in the Cape region. The committee's remit covers all invasive animals, and the Guttural Toad Working Group is overseeing work on eliminating threats from invasive Guttural toads.

ROSE'S MOUNTAIN TOADLET

Rose's mountain toadlet (*Capensibufo rosei*; IUCN Vulnerable) is now recognised to occur solely on the Cape peninsula with only two known breeding populations, which necessitates a review of the IUCN Red List status (15). Collaboration between researchers, South African National Parks and the South African National Biodiversity Institute led to a long-term monitoring programme that is now in its fourth year and has been written into the 5 year conservation plan for the Table Mountain National Park. Breeding site localities are not disclosed, and sensitive areas are closed to the public to prevent potential impact from park visitors. Past threats to this species include habitat change from urbanization as well as alien invasive plants (15). Current conservation efforts concentrate on ensuring reproductive success at the known breeding sites and a coordinated continued effort to relocate historic breeding areas with help from the extended community of amphibian workers. The importance of the collaboration lies in coordinating search efforts, sharing monitoring data and exploring active management of breeding sites, with minimum impact on the fragile breeding environments.

THE CAPE PLATANNA

The Cape platanna (*Xenopus gilli*; IUCN Endangered) also has half of its distribution on the Cape peninsula, although most of this is now restricted to the Cape of Good Hope section of Table Mountain National Park (11; Fig. 1). The Cape platanna is found at acid black-water sites, many of which have been in-filled for housing and development. Disturbed sites are also vulnerable to invasion by the Common platanna (*Xenopus laevis*), with concomitant threats of predation, competition and hybridization between the two congeners, with the eventual displacement of the smaller Cape platanna (12-14).

Threats to this species have long since been recognised and conservation efforts have been ongoing since at least the 1970s (12-14). However, because the threats associated with this species are not influenced by the general public, but by land owners and managers, solutions are sought through collaborations that involve a much smaller group of stakeholders, most of them conservationists. Collaborations between researchers and South African National Parks have resulted in the removal of thousands of Common platannas from the Cape of Good Hope section (10). Management of Common platanna numbers has been written into the five year conservation plan for Table Mountain National Park, and the ongoing work has been very successful. Work has just started on a collaboration with CapeNature to manage the invasive threat from the Common platanna at sites around Kleinmond (around 60 km East of Cape Point).

PERSPECTIVE

Our examples show the strength of different collaborative efforts in conserving amphibian fauna in the richly biodiverse South African Cape. Each of these initiatives was made possible through the dedication of a number of champions for amphibian conservation who hold key positions in local and national institutions. The existence of these champions has made active conservation collaborations a reality in an area where so many other economic needs are

pressing and where personnel and financial resources are limited (16). However, the momentum built up by champions is not sufficient to provide a sustained conservation effort which requires written policy to be entrenched within and between institutions. Without this, the effect of champions is transient, lasting as long as their own careers or the short funding cycles which maintain their involvement. South Africa has a legislative tool to formalize agreements between stakeholders in order to maintain biodiversity: Biodiversity Management Plan – Species (BMP-S) which is provided for by National Environmental Management: Biodiversity Act (2004).

A BMP-S has already been submitted for conservation of the Western leopard toad, and is being considered for species such as the Cape platanna, where multiple stakeholders are implicated in holistic conservation. Although the formalization of agreements is bureaucratic and time consuming for the relatively few conservationists involved, it has the advantage of solidifying agreements and enabling them to survive beyond the champions that spearhead them. Conservation of the unique Cape amphibian fauna will continue to be a collaborative effort into the future, and we will continue to face more and varied challenges. But together we will have increased chances of fulfilling our ambitions and responsibilities through combining the resources of multiple institutions and the complimentary ingenuities of those who work for them.

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