Towards filling the “Transkei gap”: a checklist of the reptiles and amphibians found in protected areas along the Wild Coast with notes on conservation implications

JAN VENTER ¹ & WERNER CONRADIE ²

¹ School of Natural Resource Management, Nelson Mandela Metropolitan University, George Campus, George, South Africa

² Elizabeth Museum (Bayworld), P.O. Box 13147, Humewood, 6013, South Africa.

ZSSA 2015
A checklist of the reptiles and amphibians found in protected areas along the South African Wild Coast, with notes on conservation implications

We surveyed six protected areas along the Wild Coast of the Eastern Cape, South Africa, to determine general herpetofaunal diversity as well as the representation of species of special conservation concern. Visual encounter survey methods and standard Y-shape trap arrays were used to conduct surveys from 2011 to 2013. A total of 59 species (22 amphibians and 37 reptiles) were recorded. A number of previously unknown populations of threatened species and one potential novel species were discovered in these protected areas, and the known ranges of several other species were extended. A total of 243 quarter-degree grid-cell unit records were documented, of which 90 (23% amphibians and 50% reptiles) represented the first records for the area. Amphibian and reptile diversity increased along the coast and a number of species of conservation concern were well represented in current protected areas. Our study provides a comprehensive amphibian and reptile checklist for an under-sampled region and highlights the importance of baseline data for improving conservation management.

Conservation implications: Small protected areas play an important role in conserving a number of threatened herpetofaunal species along the Wild Coast. The region is currently under significant and increasing pressure from anthropogenic-induced environmental degradation, which affects biodiversity and subsequently the local inhabitants. The information presented here represents an important baseline for future conservation management.

Introduction

Amphibians and reptiles are declining globally owing to habitat loss and degradation, pressure from alien invasive species, environmental pollution, disease, unsustainable use and global climate change (Brockelman 2003). Effective conservation planning requires detailed information on herpetofauna species.
Five years onwards, filling the “Transkei gap”:
an updated checklist of the herpetofauna found in the Eastern Cape
forest and adjacent grasslands.

WERNER CONRADIE
Elizabeth Museum (Bayworld), P.O. Box 13147, Humewood, 6013, South Africa
School of Natural Resource Management, Nelson Mandela University, George
Campus, George, South Africa
South Africa possesses high herpetofauna diversity (~132 amphibian & ~388 reptile species) (Du Preez & Carruthers 2017; Branch 2014). Source: Nielsen et al. 2018
• South Africa possesses high herpetofauna diversity (~132 amphibian & ~388 reptile species) (Du Preez & Carruthers 2017; Branch 2014)

• Former “Transkei” considered to have a low reptile diversity (Branch 2014)

• Few studies done in the early 1900s (FitzSimons 1930; Power 1935)

• Ad hoc reports during 1990s (Haagner 1994; Burger 1996; Branch & Haagner 1995)

• No tortoise records (Branch et al. 1995)

• Gap in widespread species ranges

• “Transkei Faunal Distribution Gap” (Skead 2007; Perera et al. 2011)
Introduction

Amphibians

- Trachylepis capensis

Reptiles

- Bitis arietans
- Lamprophis aurora

Tortoises

Source: http://vmus.adu.org.za
Introduction - continued

- Global decline in amphibians & reptiles
- Protected areas
- Consider occurrence, abundance and distribution within a local and regional context

Objective:
Compile an up-to-date Herpetofaunal checklist for the Eastern Cape Forest and adjacent graslands
Materials & Methods

• Visual encounter surveys (diurnal & nocturnal)
• Standard y-shape trap arrays
• Audio-visual surveys
• Dip-netting
• Voucher material collected
Materials & Methods - continued

- Literature records, FrogMap & ReptileMap (ADU), iNaturalist
Results – summary

The graph shows the comparison of Amphibians, Reptiles, and Total counts across different locations.

- **Amphibians** are represented by blue bars.
- **Reptiles** are represented by orange bars.
- **Total** is represented by gray bars.

The locations include:
- Ford Fordyce
- Isidenge
- Manubi
- Dwesa
- Langeni
- Nquado
- Hluleka
- Silaka
- Mkambati
- Mbyoti

Counts: 34, 32, 40, 41, 22, 22, 39, 33, 44, 31
Results - amphibians

- 8 Families
- 18 Genera
- 24 Species
- ~90% coverage
- 2 threatened species
- 2 range extension
- 1 new EC record
Results - amphibians

[Map showing distribution of amphibians in different forest types]
Results – reptiles

- 17 Families
- 42 Genera
- 58 species
- ~90% coverage
- 5 marine species
- 4 threatened

Bradypodion caffer
Bradyopdion kentanicum
Afroedura pondolia
Tetradactylus fitzsimonsi
Macrelaps microlepidotus
Leptotyphlops sylvicolis
Results – reptiles
Results – reptiles

Legend
- Tetradactylus_fitzsimonsi_new
- Tetradactylus_fitzsimonsi_historical
- Tetradactylus_fitzsimonsi_2014_IUCN

~350 km
Results – reptiles
Conclusion

• Near complete amphibian and reptile checklist accomplished
• Important baseline data obtained
• “Gap” caused by under sampling, not a real gap
• More surveys needed, especially inland
• Thriving populations in existing protected area network
• Proposed mining and N2 toll road
• Dispersal networks or corridors
• Monitoring programs
• Updated IUCN assessments
Acknowledgments

• FBIP Eastern Cape Forest Project
• The Eastern Cape Parks and Tourism Agency (ECPTA)
• Eastern Cape: Department of Economic Development, Environmental Affairs and Tourism
• Department Agriculture, Forestry and Fisheries
• Judith Kushata, Alex Rebelo, Chad Keates, Luke Kemp, Theo Busschau, Savel Daniels, Michael Cherry, Victor Rambau, Leigh Richards, ect.