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**HERPETOLOGICAL SURVEY OF ROOIPOORT NATURE RESERVE,
NORTHERN CAPE PROVINCE, SOUTH AFRICA**

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INTRODUCTION

Rooipoort Nature Reserve is one of the oldest conservation areas in southern Africa. The reserve dates back to as early as 1893 and is comprised of more than 40 000 hectares. It is located approximately 65 km west of Kimberley, Northern Cape Province (2824CA & 2824CB, 1000 m – 1200 masl). It is situated in the transition zone of Karoo, Kalahari, and grassland zones and also borders more than 32 km of the Vaal River riverine habitat in the west. We conducted a herpetological survey of the Rooipoort Nature Reserve, Kimberly, Northern Cape Province, South Africa. The main survey took place from 8 – 15 October 2009 and a second survey from 27 January – 1 February 2010. The purpose of the surveys was to 1) document the species that occur on the reserve and 2) to provide data, samples, and museum specimens to the Reptile Speciation Project (<http://sites.google.com/site/reptilespeciationproject/>). Rooipoort Nature Reserve was previously identified as a significant gap in the current sampling for the project, and as such the reserve was targeted for data collection.

METHODS

Three standard Y-shape trap arrays (4 buckets on the ends and 6 funnel traps on the sides) were set in different corners and habitat types of the reserve (trap 1: 28.61603S; 24.32650E; trap 2: 28.57303S; 24.20439E and trap 3: 28.59664S; 24.21083E) and the traps were visited twice daily (morning and evenings). In addition, the team conducted daily active searches for reptiles in different habitat types. Reptiles were captured by hand or by noosing them in the case of lizards. All reptiles and amphibians encountered were captured for proper identification purposes. DNA samples were obtained from target species and representative voucher specimens of lacertids were deposited in the Port Elizabeth Museum (PEM).

SYSTEMATIC ACCOUNT

(Known distribution data based on Minter et al. 2004 for amphibians, and the preliminary SARCA maps. * represents species not previously recorded in 2824CA, ** represents species not previously recorded in 2824CB, *** represents species not previously recorded in 2824CA and 2824CB.)

Family: BREVICIPITIDAE

Breviceps adspersus Peters, 1882***

After heavy rain on the night of 11 & 13 October 2009, adult *B. adspersus* were captured in all three traps. (Fig. 1).

Family: BUFONIDAE

Amietophrynus (= *Bufo*) *poweri* (Hewitt, 1935)**

Adult males were calling and captured at an artificial cement garden pond near the main farm house (28.63703S; 24.28044E). One female was captured near the research accommodation.

Vandijkophrynus (= *Bufo*) *garipeensis* (Smith, 1848)*

Numerous tadpoles were observed from the same artificial cement waterhole as the *A. angolensis* tadpoles.

Family: HYPEROLIIDAE

Kassina senegalensis (Duméril & Bibron, 1841)

Specimens were observed in the empty swimming pool at the main house and were captured in the traps after heavy rain.

Family: PYXICEPHALIDAE

Amietia (= *Afrana*) *angolensis* (Bocage, 1866)

Adults and tadpoles were observed from two artificial waterholes created for game in the reserve (28.57656S; 24.18650E and 28.57656S; 24.18650E).

Cacosternum boettgeri (Boulenger, 1882)**

After heavy rain, *C. boettgeri* males were heard calling at all temporary water bodies on the eastern side of the reserve.

Tomopterna cryptotis (Boulenger, 1907)

Numerous adult males were heard calling in the same artificial cement pond as the *A. poweri* specimens were observed. Call recordings were made and compared to Du Preez & Carruthers (2009) for proper identification.

Family: PELOMEDUSIDAE

Pelomedusa subrufa (Lacépède, 1788)**

One specimen was observed in the same pond as *A. poweri* and *T. cryptotis*.

Family: TESTUDINIDAE

Psammobates oculifer* (Kuhl, 1820)*

One specimen was observed on the grassland area to the east of the reserve (28.61716S; 24.32233E).

Stigmochelys pardalis* (Bell, 1828)**

Specimens were observed on the side of the main roads to the west of the reserve, associated with more compacted soil types. The adult tortoises were small in size and resemble the *S. p. bacoeki* race.

Family: AGAMIDAE

Agama aculeata* Merrem, 1820 **

Specimens were captured on the side of the roads, sitting on gravel or sand. They were observed over the whole of the reserve.

Agama atra* Daudin, 1802**

Specimens were captured on rocky outcrops at trap 3 and the rocky outcrops to the west of the reserve.

Family: CHAMAELEONIDAE

Chamaeleo dilepis* Leach 1819*

One juvenile was captured on a night drive, near the main gate of the reserve (28.65742S; 24.25217E).

Family: CORDYLIDAE

Cordylus polyzonus* Smith, 1839**

Specimens captured at Rooipoort were red/orange in colour. Specimens were not captured on the big rocky outcrops, but were more associated with scattered roadside rocks (28.59664S; 24.21083E and 28.62147S; 24.34228E).

Family: GEKKONIDAE

Chondrodactylus bibronii* (Smith, 1846)**

These thick-toed geckos were found over the whole reserve, associated with large rock outcrops. Specimens were also captured on the walls of two old buildings.

Lygodactylus capensis* (Smith, 1849)

Specimens were observed in the natural environment around one of the waterholes and on the walls of an old shed (28.65867S; 24.19150E).

Pachydactylus capensis* (Smith, 1845)**

Found under rocks on the surrounding koppies and under the bark of dead *Acacia* trees.

Ptenopus garrulus garrulus* (Smith 1849)

Adult males were heard calling on a sandy grassland area of the reserve near trap 3. Males started calling at dusk.

Family: GERRHOSAURIDAE

Gerrhosaurus flavigularis* Wiegmann, 1828

During the October survey no *G. flavigularis* were seen, but numerous sub-adult specimens were observed during the February survey. They were running around in the leaf litter under large bushes to the west of the reserve (28.59664S; 24.21083E). Only one unconfirmed record for *G. flavigularis* exists for the Northern Cape (Visser, 1984), thus this is the first confirmed record for the Northern Cape Province.

Family: LACERTIDAE

Ichnotropis squamulosa* Peters, 1854**

Similar circumstances and habitat to *G. flavigularis*. No specimens were observed in October, but were abundant in February.

Nucras holubi* (Steindachner, 1882)**

Specimens were captured on the western side of the reserve on more compacted soil and thicker vegetation. Voucher specimens were collected: PEM R18239, 18240, 18285, 18290, 18293, 18296 & 18299. 5 males, 1 female & 1 juvenile.

Nucras intertexta* (Smith, 1839)*

During October only two specimens were captured in traps 2 and 3. During February six adult specimens were noosed in the open. Voucher specimens were collected: PEM R18257: 1 adult female, 28.57303S; 24.20439E (trap 2). PEM R18258: 1 adult female, 28.59664S; 24.21083E (trap 3)

Pedioplanis lineocellata* (Duméril and Bibron, 1839)**

These lacertids were more abundant on the sandy areas of the reserve. Voucher specimens were collected: PEM R18236, 18252, 18265, 18286, 18287, 18288, 18289, 18297, 18298 & 18304: 4 adult males & 6 adult female.

Pedioplanis namaquensis* (Duméril and Bibron, 1839)**

These lacertids were more abundant on harder surfaces associated with calcrete. Voucher specimens were collected: PEM R18245, 18246, 18251, 18273, 18291, 18292, 18295, 18300, 18657, 18663 & 18664: 7 adult males & 4 adult females.

Family: SCINCIDAE

Panaspis walbergii* (Smith, 1849)**

Specimens were captured around rocks covered with a few layers of leaf litter on the south-western side of the reserve (28.65867S; 24.19150E and 28.68111S; 24.17233E). One individual was captured in the funnel of trap 2.

Trachylepis punctulata* (Bocage, 1872)*

These skins were found in the same habitat as *T. sulcata*.

Trachylepis spilogaster* (Peters, 1882)**

These skins were observed on the *Acacia* trees in the sandier areas of the reserve, near trap 3. One adult was captured in the swimming pool.

Trachylepis sulcata* (Peters, 1867)

One of the more abundant skink species, restricted to the rockier area.

Trachylepis varia* (Peters, 1867)

Found on the sandier area around low growing shrubs.

Family: VARANIDAE

Varanus albigularis* Daudin, 1802**

Two individuals were found. One (female) was observed in her rock hide-out on the western side of the reserve on a rocky outcrop. The second individual (male) was seen curled up in a big bush, cold after the previous night's rain near trap 1.

Varanus niloticus* (Linnaeus, 1762)

Two adult individuals were observed diving into the Vaal River, western side of the reserve.

Family: AMPHISBAENIDAE

***Monopeltis capensis* Smith, 1848**

One specimen was captured late one afternoon, a day after heavy rain, under a big rock boulder on the side of the road east of trap 1 (28.62147S; 24.34228E). (Fig. 1).

Zygaspis quadrifrons* (Peters, 1862)*

Specimens were found in the late afternoon, a day after the heavy rain under big rock boulders on the side of the track (28.64036S; 24.34656E). Habitat includes Kalahari grassland.

Family: LAMPROPHIIDAE

Prosymna sundevallii* (Smith, 1849)

One specimen was found under a rock near to an old rock kraal to the west of the reserve (28.68111 S; 24.17233 E).

Psammophis trinasalis* Werner, 1902

Two specimens were encountered. One was captured in the funnel of trap 2. The other specimen dropped from overhanging branches upon disturbance (28.59664S; 24.21083E). It is surmised that it might have used this position for basking.

Family: ELAPIDAE

***Naja nivea* (Linnaeus, 1758)**

One adult specimen was seen crossing the road early in the morning and a juvenile was captured in trap 2.

Family: TYPHLOPIDAE

Rhinytyphlops lalandei* (Schlegel, 1844)**

Specimens were found in the same conditions and habitat as *Monopeltis capensis*.

DISCUSSION

Our survey produced more than 200 individual records of reptiles and amphibians, covering 37 species (7 frogs, 4 snakes, 23 lizards, and 3 chelonians), which represents approximately 80% of all lizards, 75% of chelonians, 20% of snakes, and 50% of frogs that would be expected to be present in the area (*sensu* Branch 1998, SARCA, Du Preez and Carruthers 2009, Minter *et al.*, 2004). This high herpetofaunal diversity may be due to the diverse habitat types occurring in the area. The survey was not exhaustive, and it is expected that a full species list will only be obtained by repeated visits during different seasons. This is evident in the capture of *G. flavigularis* and *I. squamulosa* in February but not in October.

Many of the records represent new atlas distribution records for the two quarter-degree grids cells (65% for 2824CA and 59% for 2824CB). Five reptile (*P. sundevallii*, *I. squamulosa*, *G. flavigularis*, *T. varia* and *Z. quadrifrons*) and two amphibian (*A. pow-eri* and *V. garipeensis*) species were recorded for the first time in the whole one degree grid cell (28°S; 24°E) (Minter *et al.*, 2004; SARCA). The other observation worth mentioning is the presence of five lacertid species (*I. squamulosa*, *N. intertexta*, *N. holubi*, *P. lineocellata* and *P. namaquensis*) sharing the same habitat.

These rapid surveys yielded a large number of species observations, and demonstrate the utility of short but intensive surveys of biologically diverse regions. In summary, the Rooipoort Nature Reserve has made an important contribution to both conserving and understanding South Africa's biodiversity. The existence of such private reserves are an important part of preserving southern Africa's rich biological heritage, and for contributing to basic research which will assist us to better conserve our biodiversity.

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Fig. 1: *Breviceps adspersus* (top) and *Monopeltis capensis* (below) from Rooipoot Nature Reserve, Northern Cape Province, South Africa. (Photographs by W. Conradie)