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P. Le F. N. Mouton, Department of Botany and Zoology, Stellenbosch University, Private Bag X01, Matieland 7602, South Africa. E-mail: pnm@sun.ac.za

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Buyi Makhubo, Department of Herpetology, National Museum, P. O. Box 266, Bloemfontein 9300, South Africa. E-mail: buyi.makhubo@nasmus.co.za

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E-mail: johan@africansnakebiteinstitute.com

JOURNAL EDITOR

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NEWSLETTER EDITOR

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ADDITIONAL MEMBERS

Graham Alexander, School of Animal, Plant and Environmental Sciences, University of the Witwatersrand, Johannesburg 2050, South Africa. E-mail: graham.alexander@wits.ac.za

Michael Bates, Department of Herpetology, National Museum, P.O. Box 266, Bloemfontein 9300, South Africa. E-mail: herp@nasmus.co.za

Aaron Bauer, Department of Biology, Villanova University, 800 Lancaster Avenue, Villanova, Pennsylvania 19085, USA. Email: aaron.bauer@villanova.edu

Andrew Turner, Scientific Services, Western Cape Nature Conservation Board, Private Bag 5014, Stellenbosch 7600, South Africa. E-mail: aaturner@capenature.co.za

EXTENDED BREEDING SEASON

The Kloof Frog (*Natalobatrachus bonebergi*) is an endangered frog restricted to coastal and gallery forests in the Eastern Cape and KwaZulu-Natal (Minter et al., 2004). Much of its specialised habitat has been destroyed. They lay their eggs in very distinguishable masses in a jelly-like substance attached to leaves or branches above water. Once the tadpoles have developed in the eggs, they hatch and make their way down the leaf or drop straight into the water. The female often urinates over the eggs to keep them moist during dry conditions (du Preez & Carruthers, 2009).

Towards the end of May I started visiting the Crowned Eagle Estate in Gillitts, KwaZulu-Natal, with the hope of seeing *N. bonebergi*. Records of the species had been posted to the website www.ispot.org.za and confirmed in April 2013 by Dr. Jeanne Tarrant, who put me in touch with the Georges’ who are responsible for the conservancy. If I found the species, I planned on going back to the estate a few times to see when they would become less active.

The conservancy which joins the Estate is well maintained by two brothers, Clive and Mervyn George. The habitat in the Crowned Eagle Estate is fairly unusual for *N. bonebergi*. A stream runs through a bamboo forest at the top of the conservancy, and the habitat becomes more of a swamp forest further down. It leads to a small dam (known as the top dam), then another bigger one further downstream, eventually running off a waterfall. The bottom dam is relatively open, with little over-hanging canopy. It is not a very rocky area, apart from the waterfall. There’s lots of rotting vegetation, so it is also a haven for millipedes, including the endangered Pink-footed Giant Black Millipede. *Natalobatrachus bonebergi* is usually found in dark, rocky streams with closed canopy (du Preez & Carruthers, 2009).

Clive and Mervyn gave me access to the estate. They also showed me around and told me about the conservancy and the Kloof Frogs in it. They had counted large numbers of *N. bonebergi* egg masses in the previous month. They believed there could easily have been one hundred masses present. They had not seen *N. bonebergi* in the bottom dam, which is probably because the habitat is too open. During my visits there, I successfully managed to find a both adults and nests of *N. bonebergi*.

The finds were as follows:
23 May 2013 - First visit to the Estate:
Number of frogs: 4
Number of nests: 2
26 May 2013 - A fairly warm night:
Number of frogs: 4, including one that was much smaller than normal.
Number of nests: 4
Tadpoles were seen breaking out of the egg, swimming off the leaf that the nest was on, and landing in the stream.

29 May 2013:
Number of frogs: 7, including a small juvenile and a pair that appeared to be mating.
Number of nests: 4

8 June 2013:
Number of frogs: 13, including two small juveniles.
Number of nests: 2

26 June 2013:
Number of frogs: 2, they were quite well hidden behind roots in the bank of the stream, but they were active.
No egg masses were seen.

The breeding season is recorded from October to May (du Preez, 2004 and du Preez & Curruthers, 2009). The above observations indicate an extended breeding season lasting until early June.

I didn’t expect them see *N. bonebergi* into late June, particularly after a number of cold-fronts. Almost all of the frogs and egg masses I saw were in a section in the bamboo forest and in the top dam. On the 26 June 2013, I did not see any eggs, just some remains of the nest on the leaves that they were on. No one yet knows if the frogs occur downstream from the waterfall, although there is a good chance that they do. That discovery will have to wait till next season!

**Additional frog species seen during the five visits to the Estate:**
Bush Squeaker - *Arthroleptis wahlbergii*, 3 colour variations.
Natal Tree Frog - *Leptopelis natalensis*, all were juveniles.
Queckett’s River Frogs - *Amietia queckettii*.
Common Platanna - *Xenopus laevis*.

**Threats**
Unfortunately, the Crowned Eagle Estate’s conservancy could be destroyed for a proposed highway. This would mean more of this already diminished habitat will be lost. The Crowned Eagle Estate seems to be a hot-spot for this endangered frog. The area also supports a large diversity of wildlife. There are many different and uncommon birds found there, as well as Bush Pig, Blue Duiker, Genet, Water Mongoose and the Pink-footed Giant Black Millipede. The area by the waterfall looks like it could be suitable habitat for the Natal Cascade Frog, *Hadromophryne natalensis*, which is
currently listed as Least Concern. It is very important that this area is conserved, in order to protect threatened and endangered species.

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REFERENCES:

SUBMITTED BY:
NICK EVANS, Durban, KwaZulu-Natal, South Africa. Email: mpe@polka.co.za

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Developing eggs of Natalobatrachus bonebergi observed on 23 May 2013. Photo: Nick Evans
Tadpoles were observed hatching from the eggs on 26 May 2013 and wriggling off the leaf that the nest was on and landing in the stream below. Photo: Nick Evans

On 29 May 2013, seven frogs were observed including a small juvenile and a pair that appeared to be mating. Photo: Nick Evans