

Message from the Chairperson

The New Year started with a “bang” when we had the first big storm of the year around midnight on New Year’s Eve. Our rain gauge recorded 90mm in only an hour! The effects were fairly severe in the Conservancy with fences knocked down in places and birds dead from the hail. Nevertheless, the Conservancy now looks very green and we hope this bodes well for the rest of the year. In keeping with the “watery” theme, Raymond Geens has provided an interesting article in this issue on bullfrogs. We look forward to working with you all during 2009, and hope that the Conservancy will go from strength to strength this year.

Jane

Conservancy management meeting

The first management meeting of the year will be held on 10th Feb at 18.30h. Once again we would like to remind you that even if you are not a member of the management committee you are more than welcome to come along to the meetings. For details of venue etc please contact Jane on 082 566 2210.

If you have any items you would like to be raised at the meeting, please let us know so we can include them on the agenda.

Refunds from the game capture

Members who invested in the game have received notification of the refunds due to them from the game capture operation. We are distributing all of the proceeds except for R10 000 which has been retained in the Conservancy account as a contingency for unexpected expenses. A number of members are electing not to be paid out on the full amount due to them, but are leaving some of their money in the Conservancy account against future annual payments. This is very welcome as it means we will be going into the next financial year with a positive balance in the account.

After the storm – water, water everywhere!



Developments in our area

The Klipkop Conservancy (on the North side of Lynnwood Road) is applying for protected status as a (contract) Nature Reserve (under the Protected Areas Act 57/2003). The application for protected status precedes the declaration of a ‘Nature Reserve’. The status of a protected area requires all the landowners of Klipkop who are interested in protected area (Nature Reserve) status, must however enter into separate agreements with the MEC for the Gauteng Department of Agriculture, Conservation and the Environment.

The basis of the protected area declaration is an agreement between each landowner and the MEC. All the agreements must describe an integrated conservation area, to ensure appropriate biodiversity management, preservation of ecosystem services, and the maintenance of habit. No single property on its own will possess the merits required for declaration. The Protected Areas Act was designed to consider large tracts of land – in the order of 5,000 ha or greater.

A (contract) Nature Reserve apparently offers participating land owners many benefits, including increase of land value, exclusion from municipal rates, protection from mining, commercial development and squatting, and freedom to withdraw or sell at any time. Title is retained; ownership and property rights are not affected.

The Bronberg Conservancy may possibly not be appropriate for similar consideration as a (contract) Nature Reserve due to its smaller size and the need for all landowners to enter into separate agreements with the MEC. Nevertheless this certainly a possibility that we should consider for the future. It would be useful to hear the views of the members.



Members' Newsletter January 2009

Nature news:

African bullfrogs breeding in Bronberg Bewaria/Conservancy

Article contributed by Raymond Geens:

After the heavy hailstorm on old year's eve, the shallow dam on plot 40 filled up quickly. The dam had stood dry for many months, but now the deafening chorus of frogs' mating calls filled the air. Amongst the din, the deeply resonant baritone of the African bullfrog (*Pyxicephalus Adspersus*) was unmistakable.

Two days later thousands of bullfrog eggs (often from several females) hatched on a shallow rocky plate along the edge. At Bronberg Bewaria, we are lucky to have just the ideal habitat and breeding site for this locally endangered species. Although these giant bullfrogs are extremely adaptable amphibians, in Gauteng they barely survive, while their grassland habitat and especially their wetland breeding sites are destroyed by development. For successful breeding, they are completely dependent on these shallow grassy pans, that fill up with water during the rainy season. Permanent dams with predator fish or even reed-lined water bodies are no good for breeding. The frogs leave their underground estivation chambers (10-30 cm deep) after the ground is soaked by about 50 mm of rain. Within 200 m. from the breeding site, there are several such chambers, where the bullfrogs stay in estivation for periods of more than 8 months at a time. It is known that they can survive prolonged periods of drought in these shelters, while surface temperatures can be baking hot. In these chambers they shed their outer skin which turns into a tough cocoon in order to preserve body fluids. They also rely on their bladders to re-absorb water. Their metabolism virtually shuts down, waiting for that rainy trigger.

After emerging from their chambers, the bullfrogs hasten to the breeding site where instinct tells them enough water has accumulated by now. We once, after a prolonged shower, stood guard at the site of a (known) estivation chamber and watched the large male emerge from the ground. We gave

him a free ride to the dam in a bucket!. (Some of these males can live for more than 35 years and weigh up to 1.5 kg !)

The males try to establish a territory as quickly as possible. In nature, breeding is a serious matter and there is no time to lose, as the water might dry up too quickly. The water should last for 3 - 4 weeks to give the tadpoles a chance to metamorphose.

In our dam, it's usually a winner takes all contest. The males fight fiercely for dominance, which sometimes results in serious injury or even death. Since 1976 we only witnessed once that, in a remote corner of the dam, a second male managed to attract a female and raise a small brood. As a rule, the females are mated by a single dominant male.

After mating, the male guards the eggs and then moves around with the tadpoles along the grassy areas of the dam, where the tadpoles voraciously graze on algae. Any terrapin, heron, hammerhead or cormorant that ventures too close (they are attracted by this writhing black mass) gets attacked by the male. We also occasionally saw a few other males hanging around and following the tadpoles from a distance in the hope of snatching a meal. Many visitors, who ventured too close got the fright of their life when the male suddenly hurled himself at them. If he manages to grab you, he is capable of drawing blood with his strong bite (he uses tooth-like projections on his lower jaw). It is quite ironic, that this male, who fiercely defends his brood against any predator, also snacks on his own tadpoles in order to sustain himself during his long vigil. It's a necessary sacrifice in order to see the bulk of his brood turn into little green striped frogs.

When a pale green stripe becomes visible on the tadpoles' back, metamorphosis is in full swing. It's just plain amazing how fast the internal tadpole matter is re-arranged into frog organs and frog features become noticeable. Within a couple more days they are ready to leave the water.

Continued on next page...

Sometimes, the water in the dam evaporates too quickly which spells certain death for the tadpoles. In such a case, the local benevolent "Rain Gods" help out by feeding additional borehole water in the dam so that metamorphosis can be completed.

When the little frogs start swarming, it's a long perilous slog uphill for them. We have seen some of the little frogs being cannibalized by the larger ones. Anything that moves and fits into their mouths is fair game. They put on weight as fast as during their tadpole phase, yet very few survive that first year. After a few weeks have passed, we seldom encounter a little frog hopping in the grass. There must be close to 100 % mortality. This is typical for animals that follow a so-called "r-strategy". Flood the whole show with thousands of eggs and hope that a few offspring will survive (animals, such as most mammals, who heavily invest in raising only a couple of offspring follow what biologists call a "K-strategy").

If there is sufficient water in the dam and it's still not too late in the season, the male bullfrog often initiates another attempt at breeding. We once witnessed 3 successive breeding rounds in this dam by the same male. This is surely the maximum that is possible and it is doubtful that the last batch of frogs had sufficient time to eat and fatten up before the onset of winter.

We sincerely hope that the conservation of our Bronberg grasslands and breeding site will help these remarkable amphibians, against all odds, survive in the Gauteng region.

Dominant male in 2006 (one eye damaged in a fight)



Winner of this year's contest, guarding the egg site (notice some newly hatched eggs on the left)



Tadpoles on the move (going round 'n round along the grassy edges - constantly grazing algae)

