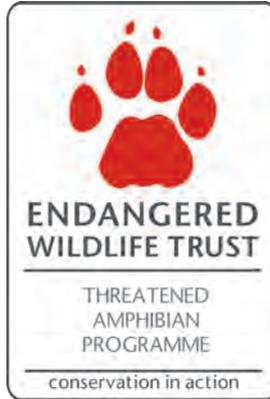
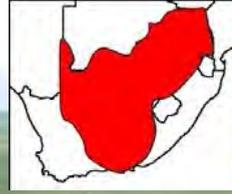


What you need to know about

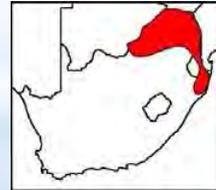
BULLFROGS

Caroline A. Yetman





Giant or Highveld Bullfrog
Pyxicephalus adspersus



African or Bushveld Bullfrog
Pyxicephalus edulis



The Giant Bullfrog is listed as:

There are 2 species of bullfrog in South Africa:

- The Giant or Highveld Bullfrog (*Pyxicephalus adspersus*)
- The African or Bushveld Bullfrog (*Pyxicephalus edulis*)

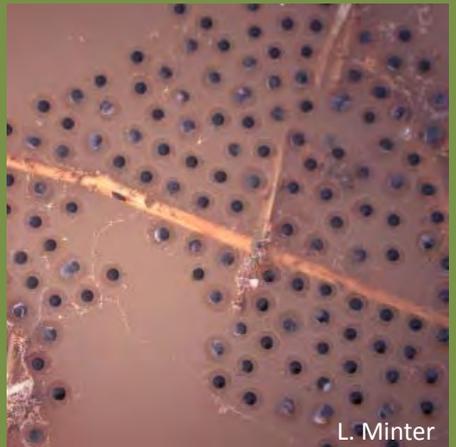
The Giant Bullfrog is listed as:

- “Least Concern” globally. This is because the species occurs in a number of southern and east African countries where it is not yet threatened.
- “Near-Threatened” (NT) in South Africa (SA). In SA many populations of the species have been destroyed or otherwise adversely affected by human activities. Habitat loss, which is most severe in Gauteng Province, is having the greatest impact on the species.

In SA the NT status of the Giant Bullfrog means:

- A provincial permit is required to:
 - catch, handle, collect, transport and/or relocate the species.
 - maintain the species in captivity.
 - conduct hands-on research and/or conservation work on the species.
- A “Specialist Giant Bullfrog Study” must be performed when a proposed development or other man-made disturbance will threaten a Giant Bullfrog population and/or habitat that a bullfrog population uses for breeding, foraging, overwintering and/or dispersal.

Bullfrog Life Cycle



FAQs

When are Giant Bullfrogs active?

Bullfrogs are found aboveground in October-March during or after heavy rain. In Gauteng, bullfrogs are most active in November-January.

When do Giant Bullfrogs breed?

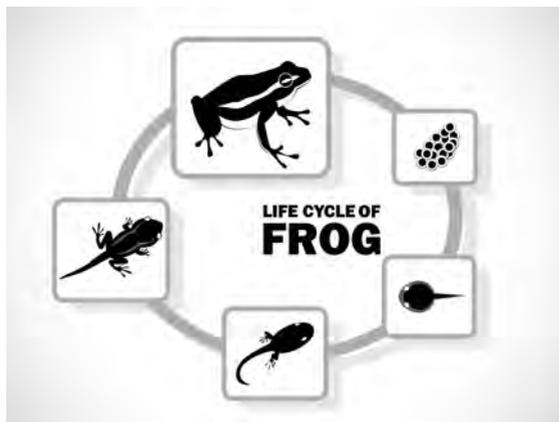
- For a bullfrog breeding site to accumulate sufficient water and for bullfrog breeding to be triggered, a rain shower of >50mm must fall.
- Bullfrog breeding events last 1-4 (although usually 1-2) days. A bullfrog population can breed 1-6 (although usually 3-4) times per summer.

Where do Giant Bullfrogs breed?

- Bullfrogs use shallow, still-standing, seasonal water to breed. "Shallow" means that along at least one edge of the wetland the water is <5cm deep. Elsewhere the water should not be >1.5m deep.
- Bullfrog breeding sites are characterized by a predominance of grass, sedge and/or herbaceous plant species <1.5m high. Bullfrogs are not known to breed in dense stands of reeds or bulrushes.

Did you know...

After mating, the biggest male bullfrogs will remain at the breeding site to look after their offspring. Parenting male bullfrogs will physically attack animals or people that threaten their offspring. They will also use their back legs to dig channels at the periphery of the breeding site to improve water availability, depth and temperature for growth and survival of their eggs or tadpoles.



The call produced by a breeding male bullfrog is a soft, deep “whooop”.



Bullfrogs are aggressive but not poisonous.

Bullfrog tadpoles, froglets and adults can be cannibalistic.



FAQs

What type of call do Giant Bullfrogs make?

The call produced by breeding male Giant Bullfrogs is a soft, deep “whoooooop.” The Guttural and Raucous Toads produce the particularly loud frog calls typically heard on summer nights in Gauteng.

How long do bullfrog eggs and tadpoles take to develop?

Bullfrog eggs take 2 days to hatch into tadpoles. Bullfrog tadpoles take 17-30 days to turn into baby bullfrogs (called froglets).

Is it necessary for male bullfrogs to guard their offspring?

Bullfrog eggs or tadpoles that are left unattended suffer major (up to a 100%) mortality due to predation and/or evaporation at the edge of the breeding site.

Are Giant Bullfrogs poisonous?

No. Bullfrogs are merely aggressive i.e. they can give you a nasty bite.

Are Giant Bullfrogs really cannibalistic?

Yes. Bullfrog tadpoles, froglets and adults can be cannibalistic. Cannibalism occurs when population density is high and food availability is low.

What do bullfrogs do if they're neither breeding nor buried?

The bulk of a bullfrog's time aboveground is dedicated to (accumulatively ~1-4 weeks) foraging at night.

What do bullfrogs eat?

Bullfrogs eat any animal ranging in size between a fly and a small chicken.

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Bullfrogs are highly faithful to their burrows.

Bullfrogs in Gauteng usually bury themselves 10-20cm below the soil surface.



FAQs

How far do bullfrogs move away from their breeding sites?

- Some male bullfrogs bury themselves in the dry bed of their breeding sites. However most members of bullfrog populations bury themselves several hundred meters away from their breeding sites. (Most male bullfrog study animals at a breeding site in Diepsloot, Gauteng, buried themselves within a 200m radius of their breeding site. In contrast, most of the female study animals buried themselves within a 200m-1km radius around the breeding site. Other researchers have found Giant Bullfrogs 4-6km away from their breeding sites.)

How deep do Giant Bullfrogs bury themselves?

- The more sandy the soil the deeper bullfrogs burrow it seems. Bullfrogs in Gauteng usually bury themselves 10-20cm below the soil surface. In Namibia, for example, the species has been found up to 0.5m deep.

For how long will a bullfrog use the same burrow?

- Both male and female adult bullfrogs are highly faithful to their burrows within and even between summers. (At the previously mentioned site in Diepsloot most study animals used 1 burrow per summer.)

How long can Giant Bullfrogs stay buried underground?

- A captive bullfrog reportedly remained buried for 7 successive years. It is not known whether wild bullfrogs exhibit such lengthy aestivation.

How old do Giant Bullfrogs get?

- A captive bullfrog apparently lived for ~45 years. It is considered unlikely that wild Giant Bullfrogs regularly live that long.

A bullfrog in your garden will consume many creepy crawlies.

W. Barnard from Crowthorne, Gauteng, photographed this bullfrog gorging termites on his patio.



W. Barnard



A. Gerber

If you see a bullfrog please photograph it. A. Gerber photographed this Giant Bullfrog in Rayton, Gauteng.

If it is REALLY necessary to remove a bullfrog from your property, it should be relocated to a site such as that in the photograph.



C. Yetman

What to do when...

You have a Giant Bullfrog on your property.

- Leave the frog alone. To your benefit it will consume many creepy crawlies. Bullfrogs are not poisonous and they won't disturb you with loud croaking.
- Please take a clear, close-up photo of the frog. Send the photo with location details to:

Dr. Jeanne Tarrant

Endangered Wildlife Trust Threatened Amphibian Programme

www.leapdayforfrogs.org.za

W + 27 31 7655471 | C + 27 83 254 9563

Email: jeannet@ewt.org.za | Web: www.ewt.org.za | Skype: [jandgtarrant](https://www.skype.com/people/jandgtarrant)

- Try to make your property and even your neighbourhood “frog-friendly.” For information about this visit:

<https://zoology.up.ac.za/bullfrogs/> to read/download “Bullfrog Bulletin” Vol. 2 Iss. 6.

<http://frogs.org.au/frogwatch/friendly.html> to read/download “Bonking in the Garden.”

- ONLY MOVE THE FROG IF you live in a very built-up environment (e.g. a townhouse complex) where the frog is highly likely to either remain trapped, or get killed by road traffic. Catch the frog by hand, or with a hand-held net. Place it in a closed but ventilated bucket containing a 1cm layer of water. Immediately relocate the frog to the largest piece of undeveloped “veld” where there is a (preferably seasonal) wetland within a 10km radius of where the frog was originally found. The frog need not be fed if it is immediately released.

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Your contribution will be entered into a database of information about the geographical distribution of the Giant Bullfrog in SA.

- Try to make your property and even your neighbourhood “frog-friendly.”

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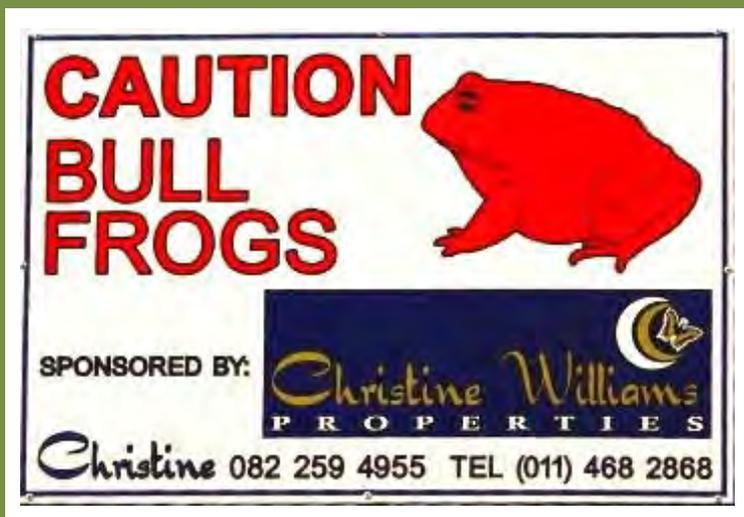
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A road sign alerting motorists about bullfrogs on a road in Diepsloot, Gauteng.



What to do when...

Bullfrogs are being killed by traffic in your neighbourhood

- Fill in all ditches that accumulate rainwater on and alongside roads. Bullfrogs are often fatally attracted to rain-filled road ditches.
- Take to the streets when heavy rain brings the bullfrogs aboveground. To make your presence and that of the bullfrogs known, PLEASE wear bright, reflective clothing, erect temporary signboards, use lights, beacons, danger tape, etc. Bullfrogs that stand a high risk of being hit by traffic should be transferred (by hand, net or by bucket) several meters off the road in the direction that the frogs were traveling in.
- Find sponsors to support a “bullfrog” road sign initiative. Even if the signs result in a negligible reduction in road kill they will definitely improve public awareness about the species. They may even deter developers!
- Contact your local municipality to apply for the construction of speed bumps.
- Contact your local municipality to apply for temporary or permanent road closures, or restricted road or neighbourhood access.

Bullfrog breeding site in
Monavoni, Gauteng.

EARLY 2004



MID 2004

The remains of a bullfrog
killed by earth-movers.



What to do when...

You are concerned about a proposed development that will threaten a Giant Bullfrog population and/or its habitat

- Contact the developer or the developer's environmental consultant to ask to be registered as an "Interested And Affected Party" (IAAP). Register as an IAAP and submit your concerns to the developer or consultant in writing.
- Ask one of the bullfrog specialists listed on the back of this booklet to also register and respond as an IAAP.
- Based on various factors, including the concerns of the IAAPs, the provincial conservation department may or may not oblige the developer to have a Specialist Giant Bullfrog Study (SGBS) done. IAAPs may appeal the decision made.
- The purpose of a SGBS is to have a Bullfrog Specialist: i) determine to what extent Giant Bullfrogs occur and utilize habitat on the proposed development site;
ii) assess to what extent the proposed development will threaten resident bullfrogs and/or their habitat; and
iii) prescribe measures to mitigate the impact of the proposed development on the bullfrogs and/or their habitat.
- Based on various factors, including the conclusions of the SGBS report, the provincial conservation department may or may not issue a positive Record of Decision (RoD) (with or without certain restrictions) for the proposed development. Again, IAAPs may appeal the decision that is made.

Wetland damage caused by quad bikes.



This bullfrog was rescued from someone's private bird aviary. The frog had been blinded by birds and was on the brink of starvation.

This bullfrog, which was hit by traffic, had to be euthanized at Onderstepoort Veterinary Clinic.



What to do when...

You witness an activity (other than development) that threatens Giant Bullfrogs and/or their habitat

- Contact your local municipality or provincial conservation department.

You see a bullfrog in a pet store or other captive situation.

- Report anyone who keeps, breeds and/or sells Giant Bullfrogs, and does not have a provincial permit to do so to your provincial conservation department.

You see bullfrogs being persecuted for food or recreation

- Take photographs of the incident. Note as much information about the offenders as possible (e.g. their vehicle registration, school uniforms, etc.).
- Report the incident immediately to your provincial conservation department.

You find a sick or injured Giant Bullfrog.

- Consult your local vet or:
- The Bird and Exotic Animal Clinic, Onderstepoort Veterinary Institute, Onderstepoort, Pta
Tel: 012 529 8105 or 083 381 6566
- FreeMe Wildlife Rehabilitation Centre, Paulshof, Jhb, Tel: 011 807 6993 or 083 558 5658

Provincial conservation departments:

- Gauteng: www.gdace.gpg.gov.za/html/index.htm
- Free State: www.fs.gov.za/
- North-West: www.nwdace.gov.za/
- Limpopo: www.limpopo.gov.za/prov_dept/econ_dev_tourism/default.asp
- Mpumalanga: www.mpumalanga.gov.za/
- Northern Cape: www.northern-cape.gov.za/index.asp?inc=departments/economic/main.html
- Eastern Cape: www.ecprov.gov.za/department.php?index=3
- Western Cape: www.capegateway.gov.za/eng/yourgovernment/gsc/406
- Kwa-Zulu Natal: <http://agriculture.kzntl.gov.za/portal/>

Giant Bullfrog specialists

Graham Alexander (University of Witwatersrand)
Tel.: 011 717 6438; E-mail: graham.alexander@wits.ac.za

Vincent Carruthers (VC Management Services)
Tel.: 011 463 2390; E-mail: vcms@mweb.co.za

Clayton Cook (University of Limpopo)
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