BUSH TELEGRAPH

FRUSTRATED FROGS IN QUACKING FRENZY

Frog researcher Dr Dale Roberts from the University of Western Australia took this astounding photograph of these quacking frogs, which sometimes engage in bizarre and spectacular mating behaviour.

The quacking frog (Crinia georgiana) is a familiar species on the coastal plains and in the forests of southwestern Australia. The species has a prolonged breeding season, with most breeding activity occurring between July and October. Males congregate where there is ample shallow water, and call to attract females. Particularly favourable sites are found around granite outcrops in the Darling Range. The call is a short and remarkably loud 'quack ... quack... quack', hence the common name of this Females species. are

attracted to a chorus of calling males and select a mate. On an average night a mating pair enter into a sexual embrace termed 'amplexus', where the male lies on the back of the female and clasps her firmly around the back legs. Eggs are released, then fertilised externally by the male releasing sperm over them.

This form of mating behaviour is common among most frog species. On certain nights, however, when large numbers of males appear at the breeding sites and competition for females is intense, males desperate to mate may attempt to join already amplexed pairs. Amplexed males attempt to discourage interlopers by lashing out with their powerful hind legs, however this evasive action is often to no avail and several males may also gain hold of the female. It is not uncommon for four or five males to join a mating pair and in extreme instances up to nine males have been observed to mate with a single female. The outcome is a writhing ball of frogs desperately struggling to fertilise the female's eggs.

Genetic analyses reveal that a male placed in the normal, upper position, and a male amplexed underneath on the lower abdomen can both fertilise eggs, but other males may not do so well. Multiple male matings may be the best that they can do if females are scarce. For females there may real costs: lower fertilisation success, because males are squabbling rather than concentrating on the job, or even death, probably from asphyxiation, if the males are too vigorous. Male quacking frogs have massive forearms but females are slender and delicate. This gender difference suggests that wrestling for a position, or holding on in the ventral position, has had a long history in this species.

Multiple paternity is rare in frogs. Quacking frogs offer some unique opportunities to understand costs and benefits to both males and females of having several fathers for a single clutch.

For Dr Roberts and Phil Byrne of the University of Western Australia's Zoology Department, this is a continuing study.

Quacking frogs mate. Note the released eggs below, waiting for the male to fertilise them.

Photo - JD Roberts





The waters off Western Australia's south

marine plants and animals. Read about

coast are home to a rich diversity of

them on page 28.

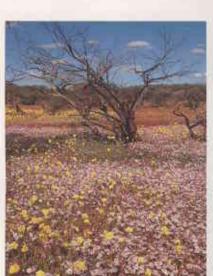
VOLUME THIRTEEN NUMBER 2, SUMMER 1997-1998

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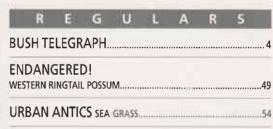
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Finished art: Colourbox Digital Illustration: Gooitzen van der Meer Cartography: Promaco Geodraft

Executive Editor: Ron Kawalilak

Marketing: Estelle de San Miguel # (08) 9334 0296 Fax: (08) 9334 0498 Subscription enquiries: # (08) 9334 0481 or (08) 9334 0437

Colour Separation by Colourbox Digital Printed in Western Australia by Lamb Print

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Published by Dr S Shea, Executive Director Department of Conservation and Land Management, 50 Hayman Road, Como, Western Australia