

FROG CALL

THE FROG AND TADPOLE STUDY GROUP NSW Inc.

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NEWSLETTER No. 144 AUGUST 2016

AT OUR JUNE FATS MEETING:

FOUR FABULOUS FATS FEMALE AMPHIBIAN BIOLOGISTS

Marion Anstis (*Tadpoles and Frogs of Australia*, frog bible); Giselle Howard (Environmental educator, EPA Director), Our June speakers: Josie Stokes (Green & Golden Bell Frogs, biodiversity specialist Roads & Maritime Services) & Jodi Rowley (Frogs of SE Asia & Australian Museum Curator of Amphibians and Reptiles).

Photo Rob Ambrose



*You are invited to attend
our next FATS meeting*

Arrive from 6.30 pm for a 7pm start.

Friday 5 August 2016

**FATS meet at the Education Centre,
Bicentennial Pk, Sydney Olympic Park**

Easy walk from Concord West railway station and straight down Victoria Ave.

By car: Enter from Australia Ave at the Bicentennial Park main entrance,

turn off to the right and drive through the park. It is a one way road.

Or enter from Bennelong Road / Parkway.

It is a short stretch of two way road.

Park in P10f car park, the last car park before the exit gate.

AGM and Ordinary Meeting Format Friday 5 August 2016

6.30 pm Lost frogs needing adoption: Green Tree Frogs *Litoria caerulea*, 1 *Litoria infrafrenata* White lipped Tree Frog needing forever homes, available to FATS members. Please bring your FATS membership card and cash \$50 donation. Your current NSW NPWS amphibian licence must be sighted on the night. Rescued frogs can never be released. Sorry we have no EFTPOS

7.00pm Welcome, AGM and announcements

7.45 pm Main speaker: "The History of Green and Golden Bell Frogs in Sydney" Arthur White

Second speaker Peter Spradbrow (just back from Africa). "Elephants are not Frogs"

9.30 pm Show us your frog images, tell us about your frogging trips or experiences. Guessing competition, continue with frog adoptions, supper, relax and chat with frog experts.

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LAST FATS MEETING 3 JUNE 2016

Marion Anstis opened the meeting and welcomed new visitors and regular attendees. The seating in the meeting room has been rearranged longwise to provide those in the back row with an excellent view of the screen. FATS is a voluntary group. We concentrate on conservation interests, more than keeping frogs, however at most meetings there are rescued frogs seeking adoption.

Josie Stokes our first main speaker is a biodiversity specialist at the NSW Roads and Maritime Services (RMS). She writes operational policy, protocols and guides project teams on how to best minimise impacts on biodiversity. Prior to that, since 1998, Josie worked on Bell Frogs at Homebush. She introduced us to what the NSW Roads and Maritime Services does to mitigate the impacts of roads on threatened frogs.

Josie focussed on what has been done for *Mixophyes iteratus* and *Litoria brevipalmata* for sections of the Pacific Highway Upgrade where these species occur.

Mitigation measures include pre-clearing surveys, frog-proof fencing, installing frog breeding ponds, monitoring frog populations before, during and after construction, installing and monitoring frog underpasses.

Josie reported some hot off the press information from Sandpiper Ecological (who do the post-construction monitoring), which was the first recorded crossing through a pipe culvert underpass by a *Mixophyes iteratus*. This is very exciting news for researchers and RMS as there is not a lot of data showing the effectiveness and use of pipe culverts by Australian frogs.



Photo credit: Sandpiper Ecological

Our next main speaker was Jodi Rowley, curator, Amphibian & Reptile Conservation Biology, Australian Museum. Jodi spoke about mountain-top frogs in crisis due to habitat loss. Why should we care? Frogs are the keystone species. Their loss would cause large scale long term ecosystem effects. No other animals fill the role of frogs. Some of Jodi Rowley's blogs are copied below.

TWO ASIAN FROG SPECIES ARE NOW OFFICIALLY MORE THREATENED THAN THE GIANT PANDA. Two frogs found only near the peak of the highest mountain in Indochina are now officially

listed as *Critically Endangered*. Discovered only a few years ago, Botsford's Leaf-litter Toad and Sterling's Toothed Toad are known from a single stream that is under threat from pollution and habitat destruction. This listing will hopefully direct conservation attention to these little frogs at great risk from extinction.

Although amphibians are the most threatened group of animals on the planet, they are also relatively poorly known, with new species continuously being discovered. One of the greatest areas of discovery is Southeast Asia, with well over 100 new frog species having been discovered and described in the last decade. Unfortunately, many of these new species are already threatened with extinction.

In 2013, two new species were described from near the top of Mount Fansipan, in northern Vietnam: Botsford's Leaf-litter Toad (*Leptolalax botsfordi*) and Sterling's Toothed Toad (*Oreolalax sterlingae*). One of us was in the team of scientists that discovered and described Botsford's Leaf-litter Toad from the misty mountain peak, and we were very worried at the time of discovery that pollution and habitat loss due largely to tourists climbing the mountain would impact on these seemingly very restricted-range species. A return visit this year confirmed that they were in serious trouble.

The official listing of these species as *Critically Endangered* (on the IUCN Red List of Threatened Species) places them amongst the top ~450 most threatened frog species in the world. Broadly, threat categories run from Least Concern to Near Threatened, Vulnerable, Endangered and then *Critically Endangered*. The next (and final) steps are *Extinct in the Wild* and then *Extinct*.

There are now nine *Critically Endangered* frog species in Southeast Asia, and over 450 worldwide. These numbers are alarming - frogs around the world are in a lot of trouble. To put things in perspective, some of the threatened mammals that we hear about, such as tigers and pandas, are listed as *Endangered*, having thankfully not yet crossed the line into the *Critically Endangered* category.

Our work on amphibians at the Australian Museum Research Institute doesn't stop at discovering new species, or gaining more information on the species we already know exist, but strives to understand which species are most threatened and where best to direct our conservation efforts. While sobering news, we hope that the official listing of these two species as *Critically Endangered* is an important step towards ensuring their long term survival.



Sterling's Toothed Toad Photo Jodi J. L. Rowley © Aust Mus

By Dr Jodi Rowley, Timothy Cutajar, category: AMRI 10/12/2015 Acknowledgements: Our work assessing the global conservation status of these species was made possible due to the generous support of the Australian Museum Foundation.

THE FIVE NEW FROG SPECIES DISCOVERED IN FAST-DISAPPEARING FOREST. The forests of central Vietnam & adjacent Cambodia are home to five new frog species that have hopefully been discovered in the nick of time.



5 new species of Asian Leaf-litter Frog Photos Dao Tran, Jodi Rowley, Pedro Peloso © Dao Tran, Jodi Rowley, Pedro Peloso

The biodiversity of some of the most threatened ecosystems on the planet remains poorly-known. It's a race against time to discover and document the biodiversity in these areas so that we can make informed conservation decisions. Recently, expeditions by amphibian biologists into the forests of Vietnam and Cambodia have resulted in the discovery of five new frog species. Identified largely by their chirping calls and their DNA, these tiny new frog species are further evidence that the forests in which they live are hiding a greater biodiversity than currently known. Because if this, forest loss in these areas is likely to result in an even greater biodiversity loss than we realise.

Asian Leaf-litter Frogs (genus *Leptolalax*) are small and brown and sound like crickets. To find one, you'll have to trek into dense evergreen forest and quite possibly crawl on your hands and knees in the rocky headwaters of streams in Southeast Asia. Once you find one, they're rather tricky to identify, having very few distinguishing characteristics (a small brown frog looks a lot like other small brown frogs).

This is quite possibly why species discovery in Asian Leaf-litter Frogs has lagged behind many other groups of frogs, and the smallest of the frogs (the "*Leptolalax applebyi* group") weren't discovered until 2009. While their appearances can mask their true diversity, it's their faint cricket-like calls and DNA that really helps in figuring out who's who (and who's new).

In recent years, teams of amphibian biologists have painstakingly combed the forest floor looking for the 2-4cm frogs in the *Leptolalax applebyi* group. These new surveys, combined with detailed analysis of DNA, advertisement calls and morphology (body size and shape, plus colour and pattern) has resulted in us just describing an additional five new species in the group- the Brilliant Leaf-litter Frog

(*Leptolalax ardens*), the Kalon Leaf-litter Frog (*Leptolalax kalonensis*), the Pale Leaf-litter Frog (*Leptolalax pallidus*), the Spotted Leaf-litter Frog (*Leptolalax maculosus*), and the Ta Dung Leaf-litter Frog (*Leptolalax tadungensis*).

Each new species appears to be restricted to individual drainage basins, and much of the forest in which they would have occurred in the past has already been lost. The region continues to experience high rates of deforestation, even within protected areas, and it is likely that each of these species are threatened with extinction. Undescribed species in this group likely occur in nearby unsurveyed forests and some may have already been lost (see my previous blog *Gone before we know they exist*).

Some of the most biodiverse places on earth are under immediate threat. In order to make informed conservation decisions aimed at stemming this loss, we need to know what species occur where and how biodiversity varies across the landscape. Our current lack of knowledge of the biodiversity of these imperilled ecosystems is hindering our conservation efforts. These five tiny new brown frogs are just the tip of the iceberg when it comes to unknown biodiversity, but demonstrate just how much remains to be discovered, and just how much we stand to lose.

By Dr Jodi Rowley category AMRI 1/3/2016

DISCOVERING THE BIODIVERSITY OF THE GREATER MEKONG. Much of the biodiversity of the Greater Mekong region in Southeast Asia remains undiscovered, but is already under great threat.

Forest destruction southern Vietnam

Photo: Jodi J L Rowley ©Aust Mus



The rivers, valleys, mountains, and forests surrounding Southeast Asia's Mekong River are home to an amazing diversity plants and animals, and much of this diversity is only just being revealed. According to figures compiled by WWF, between 2012 and 2013, biologists working in the area discovered an incredible 367 new species. Unfortunately, discovering the biodiversity of the region is a race against time.

The Mekong River flows through Cambodia, Laos, Myanmar, Thailand, Vietnam, and parts of southern China. This region, the Greater Mekong, is known for iconic wildlife such as the tiger, Asian elephant, and Irrawaddy dolphin, but many bizarre and beautiful species are still being discovered. Among the 290 plants, 24 fishes, 21 amphibians, 28 reptiles, one bird and three mammals just discovered are a blind huntsman spider, a giant squirrel, a hunch-backed bat, a flying frog (*Helen's Flying Frog*) and a small, fat toad from the highest mountain in Indochina (*Botsford's Leaf-litter Toad*).

These fantastic discoveries are the result of ongoing research by biologists from around the world striving to document the unique biodiversity of the Greater Mekong. Many of the discoveries were made during recent expeditions into previously biologically unexplored areas. They involved days of hiking through rugged terrain, along rivers and up mountains. The discoveries often involve blood (from leech, mosquito and other invertebrate bites), sweat, and possibly even tears.

Unfortunately, biologists such as my colleagues and I are racing against time to document species in the Greater Mekong before they are lost. Many, or perhaps most, of the newly described species are under serious threat from extinction. Although collection for the wildlife trade, introduced species, hydropower development, disease, pollution and climate change all pose significant threats to the biodiversity of the Greater Mekong, the greatest threat is habitat loss. While some plant and animal species are capable of living in human-modified habitat, many species require relatively undisturbed habitats to survive.

Simply knowing a species exists is a vital first step towards its conservation, and these species discoveries will hopefully enable much-needed conservation actions to be directed towards the species most in need. While rapid social and economic development continues in the region, I just hope these 367 new species have been discovered in time to protect them.

By Dr Jodi Rowley 6 / 10 / 2014

Arthur White showed interesting images from Jabiru and Arnhem Land. Jilli Streit had great shots from Bali. FATS is privileged at every meeting to attract high profile, unassuming, interesting, informative and knowledgeable amphibian speakers, such as Jodi Rowley, Josie Stokes and Arthur White, at our meetings. We are very grateful for the time and effort they all give us to present their talks.

The meeting ended with raffles, supper and relaxed conversation. Thanks to the FATS committee and others, including Wendy and Phillip Grimm, Arthur and Karen White, Jilli Streit, Vicki Deluca, Andre Rank, Kathy, David, Harriet, and Sarah Potter, Ryan, Rob Wall, Marion Anstis, Andre Rank and Punia Jeffery for making our meeting nights run smoothly such as the welcome and frog adoption tables, providing prizes, running technology, organising seating, obtaining and returning the building keys, providing yummy supper, offering advice, making people feel welcome, listening to frog stories, socialising with visitors and processing membership. MW



Limnodynastes dumerilii 9-7-2016
Craig R Broadfield FATS Facebook Friend

DAVID WHITE FATS FACEBOOK FRIEND DAINTREE SOLAR WHISPER CRUISES



This green glam goddess is in the pursuit of nothingness. Morning Meditation in the magnificent mangroves. Hanging out in that space between thoughts. Pictured here in perfect peaceful prayer pose position. White lipped tree frog on the Daintree River Solar Whisper Daintree River Crocodile & Wildlife Cruises.



Solar electric boat with croc cam, lets you get closer to nature, crocodiles on most tours, all wildlife, Daintree rainforest creeks, eco friendly. Cruise the **Daintree River** spotting wildlife on a quiet, clean solar electric boat **Solar Whisper**. Get closer to nature... hear, smell & experience without noise & fumes. 99% success rate for spotting crocodiles, excellent bird watching opportunities and other wildlife possibilities such as snakes, frogs and fish. This is true Eco Tourism.



<https://www.facebook.com/SolarWhisper/>

FATS AGM

The FATS Annual General Meeting will be held during the August meeting on Friday 5 August 2016. At that meeting all positions on the FATS' executive become vacant and so we are seeking nominations for the following positions: President, Chairperson, Vice-President, Secretary, Treasurer, Membership Officer, Website and Facebook Manager, Field Trip Co-ordinator, Frog Helpline, Editor and Events Co-ordinator.

If you are interested in joining the executive you can nominate yourself, or if you know of someone who you think would be interested, you can nominate them (but ask them whether they are prepared to stand before doing so). If you are not sure what the job entails ask a FATS executive or ring them and have a chat.

To make a nomination, send your nomination to me before 29 July. Don't be shy about being on the executive. FATS only works because people who are interested are prepared to devote some time to its activities. The current executive has been reappointed a number of times (and do a sterling job) - but it would be good to have some new blood.

We can only take nominations from the floor at the AGM if there are no previous nominations for that position.

If you have any issues that you would like to raise at the AGM, you can also email those to me before the AGM.

Arthur White President

2016 FATS FROG-O-GRAPHIC COMPETITION

In 2008 FATS conducted our first Frog-O-Graphic competition. This proved very successful as we have many creative people in the group. So start photographing. We look forward to seeing your entries.

FATS members' 2016 Frog-O-Graphic competition opens

1st May and closes 31st August, 2016

Junior and Senior Best Frog Image,
Junior and Senior Best Pet Frog Image,
Junior and Senior Most Interesting Image,
People's Choice.

Category winners to be decided by a panel of judges. **People's Choice** will be decided by everyone present at our 2nd December FATS meeting. All entries are by email to photos@fats.org.au Please state: your name, confirm that you are a financial FATS member, age if under 18, whether the image is of a pet frog and contact phone number. Maximum six entries per person. Maximum attachment size 6 MB. Fabulous prizes will be awarded for each category. Entries must be original and your own work. The winning entries may be featured in FrogCall, FATS 2017 calendar and other FATS publications. **Arthur White**



Barbara's Sydney bathroom Peron frog heaven

**OVER THE NEXT FEW MONTHS
FROGCALLS 1 TO 110 WILL BE UPLOADED
TO THE FATS WEB SITE**

Some have never been seen in colour before!

Jodi Rowley speaking at the June FATS meeting



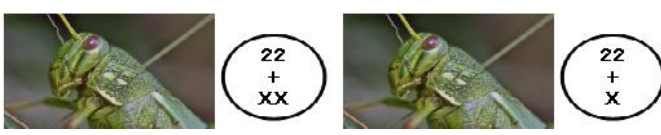
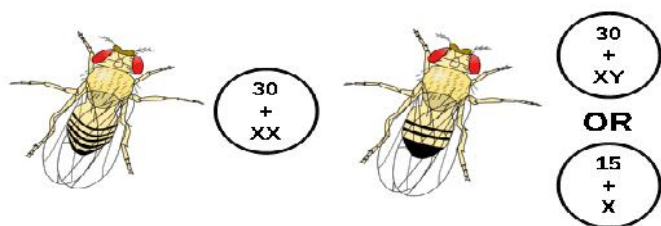
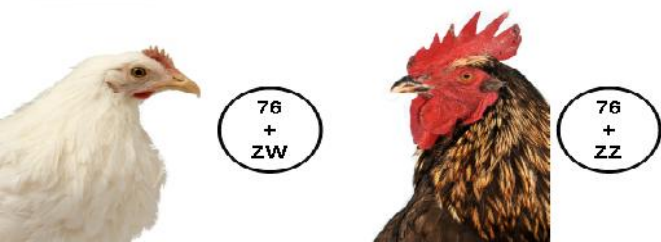
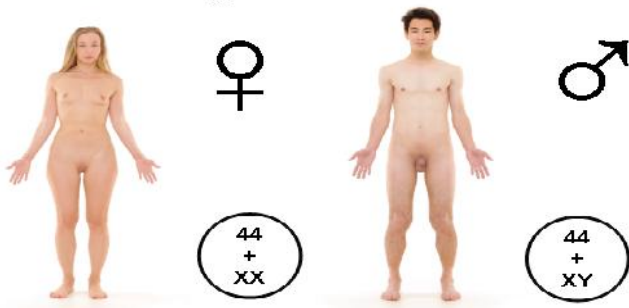
SEX DETERMINATION AND SEX REVERSALS IN FROGS

Sex Determination In most species, sex determination is genetic: males and females have different alleles or even different genes that specify their sexual form (gender). In animals this is often accompanied by chromosomal differences, generally through combinations of XY, ZW, XO, ZO chromosomes, or haploidy (half the complement of chromosomes in each cell).

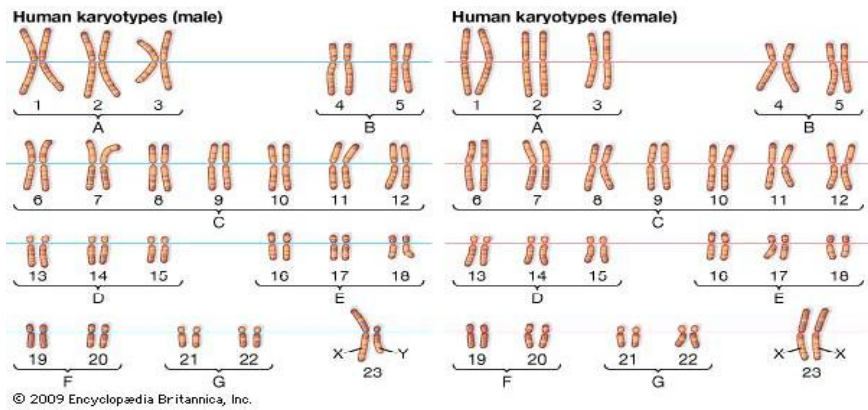
Sexual differentiation in the embryo is generally triggered by a main gene (a "sex locus"), with a multitude of other genes following in a domino effect.

- HUMANS have two sex chromosomes XY. The female has paired sex chromosomes XX.
- BIRDS have two sex chromosomes ZW. The male has paired sex chromosomes ZZ.
- FLIES have two sex chromosomes XY. Males may be unpaired or haploid.
- GRASSHOPPERS have one sex chromosome X. Males are haploid for the sex chromosome.

Different types of sex determination

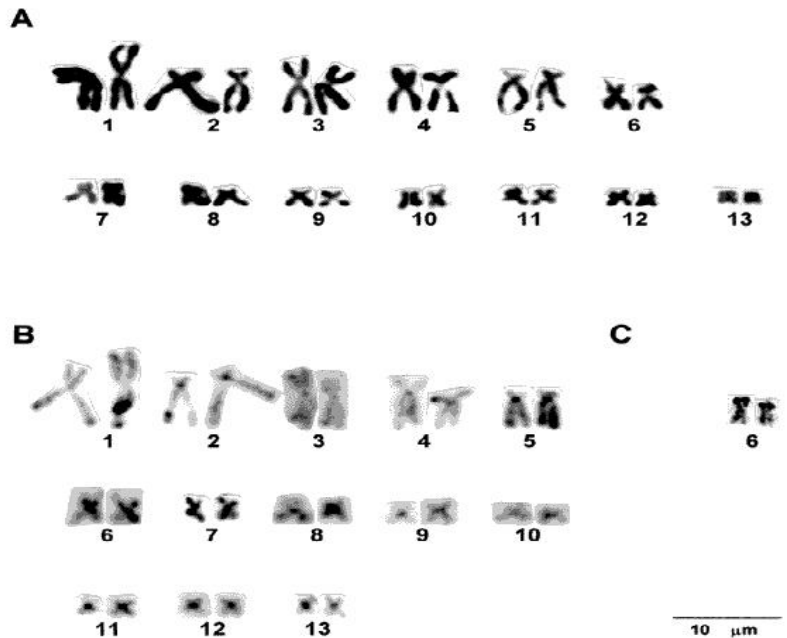


Human Karyotype



Frog Sex Chromosomes Frogs have a dual sex chromosomal system: XX/XY or ZZ/ZW. This makes amphibians the only vertebrate animals to have a dual chromosomal system.

In both systems, males have paired chromosomes. ie XX or ZZ.



Karyotype A is from a frog that has the XX/XY sex chromosomes. In this case it is a male, the paired X chromosomes are pair 13.

Karyotype B is from a frog that has the ZZ/ZW sex chromosomes. In this case it is a male, the paired X chromosomes are pair 6.

Expression of Gender The sex chromosomes determine the potential sex of the embryo.

The ultimate body form (gender) of the embryo is determined by the activation of the sex gene (which is not located on the sex chromosomes).

In humans, XX chromosomes will activate the gene and the embryo becomes female.

Sometimes EXTERNAL factors activate the sex gene and the resultant gender may not be the same as the sex chromosomes. The embryo may develop the sexual genitalia of the other sex, it may become hemaphroditic or it may be sexually neutral.

Animals that Change Sex Sex changing is widespread in the animal kingdom. Probably fish are best known for sex reversals.

Clownfish, wrasses, morays, gobies and other fish species change sex according to the environment. A school of clownfish is always built into a hierarchy with a female fish at the top. When she dies, the most dominant male changes sex and takes her place. In the wrasses, sex change is from female to male, with the largest female of the harem changing into a male and taking over the harem upon the disappearance of the previous dominant male.

How is Sex Reversal Possible? Humans do not normally reverse sex roles during their lives. Once the sex gene is activated, the gender of the embryo is fixed.

Sex reversals are possible because the testes and ovaries are derived from the same embryological tissue. In many animals, the undifferentiated sex organs of the other sex are retained (but not activated) throughout life.

Even Chooks can do it Normally, female chickens have just one functional ovary, on their left side. Although two sex organs are present during the embryonic stages of all birds, once a chicken's female sex genes come into effect, it develops only the left ovary. The right gonad, which has yet to be defined as an ovary, testes, or both remains dormant.

Some diseases can cause a chicken's left ovary to regress. In the absence of a functional left ovary, the dormant right sex organ may begin to grow, the activated right gonad will begin secreting male sex hormones and the chicken becomes a rooster.

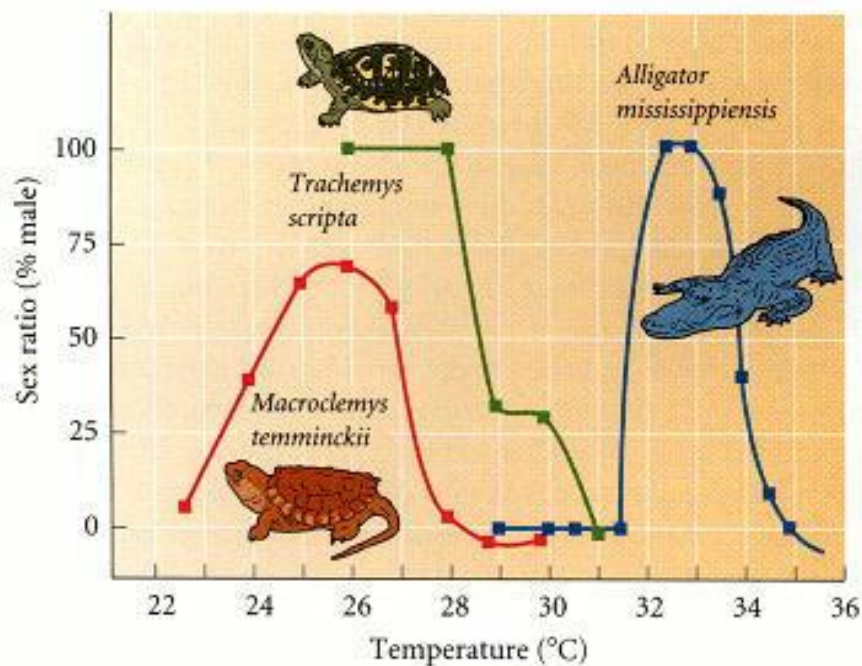
Environmental Sex Determination

Animals may change sex in response to a range of environmental cues- such as age, temperature during incubation, presence of other individuals, health and mate availability.

Temperature-dependent sex is the best studied of these.

In reptiles, there are two patterns of sex determination:

- Pattern 1 eggs hatch male at low temps, hatch female at high temperatures;
- Patterns 2; males at intermediate temps, high or low temperatures produce females.



Herbicides and Sex Reversals Some common herbicides are chemically similar to the sex gene activator protein. For animals that are exposed to herbicides of this type, sex reversals are common, resulting in a gender imbalance in the population.

Atrazine (banned in Europe in 2003 because of links to prostate and breast cancer in humans) can induce sex reversals in frogs in concentrations of less than 2.5 ppb. At other concentrations it causes sterility, hermaphroditism or sexual dysfunction.



Atrazine is the 21st Century's DDT: LET'S GET IT BANNED!

- > Atrazine is one of the world's most harmful pesticides.
- > Atrazine was banned in the European Union in 2004.
- > Eighty million pounds of Atrazine are used in the USA each year, primarily on corn, rice, sorghum and sugar.
- > Atrazine is an endocrine disruptor that causes immunosuppression, hermaphroditism and complete sex reversal in frogs at concentrations as low as 2.5 parts per billion.
- > Atrazine is the most commonly detected pesticide in US groundwater, and can persist in the environment 15 years after it is applied.

HELP US GET ATRAZINE BANNED!

Sign the petition and learn more at:
savethefrogs.com/atrazine



SAVE THE FROGS! is America's first and only public charity dedicated to amphibian conservation.

Scan the QR Code to view the petition!



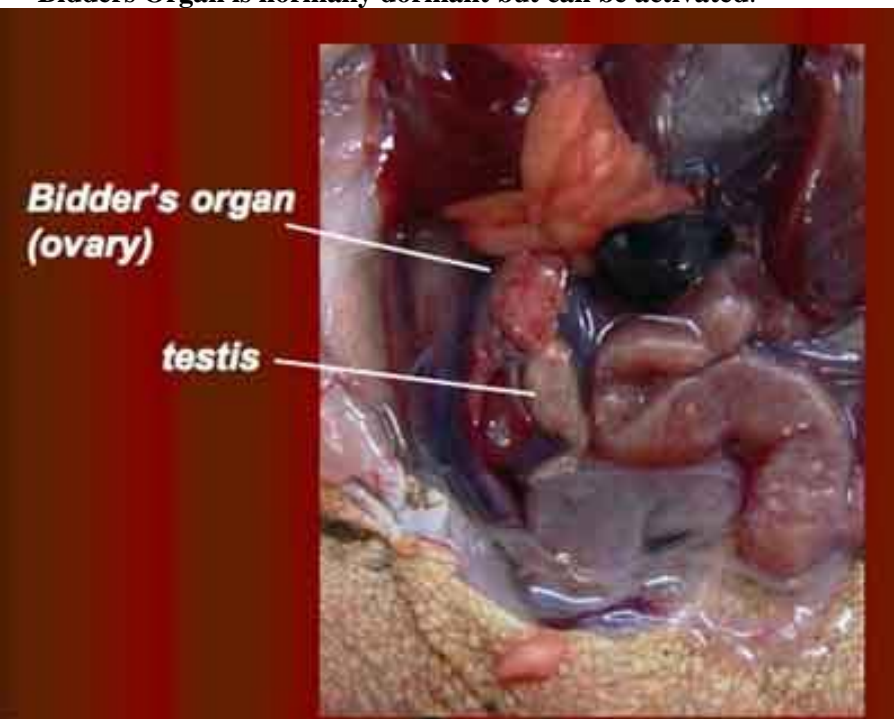


Atrazine Effects on Humans Atrazine is used in massive amounts in the central west of the USA, mainly in broad-acre fields of maize, sorghum, sugar cane and sweet corn.

It was believed that at levels below 2.5 ppb humans were safe from the effects of Atrazine. Recent studies in the USA have found town drinking water with levels that exceed these concentrations- cancers, birth defects and malformations are above normal levels in towns in these areas.

Natural Sex Reversal in Frogs The gonads of frogs are internal. Like all other vertebrates, the ovaries and testes develop from the same embryological tissue. In frogs, a mass of undifferentiated gonad remains in the adult (Bidders Organ).

Bidders Organ is normally dormant but can be activated.



African Reed Frogs African Reed Frogs (genus *Hyperolius*) can naturally change sex when required. Adult frogs have both ovarian and testicular tissue, but only one is active at a time.

If there is a shortage of mates of one sex eg. males, some females will reverse to become males. The survival value of being able to change sex in these circumstances is very clear.

Sex reversal is achieved by the activation of the sex gene but the ultimate pathway is unknown.

Hyperolius viridiflavus is a diverse species with 60 defined sub-species.



H.v.granulatus



H. v. Viridiflavus



H.v.pallidus

Sex Reversals Being human, we do not regard sex reversal as "normal" but changing sex occurs in more species of vertebrates than not. It is less common in mammals and birds and it is likely that all early vertebrates changed sex as required.

Sex reversals are much easier in species where there is little physical difference between the sexes. **Arthur White**

AUSTRALIA'S MOST ENDANGERED FROGS NEED \$15 MILLION TO SAVE THEM FROM EXTINCTION



A deadly fungus is devastating the spotted tree frogs of Victoria. (Melbourne Zoo: Trent Browning)

Scientists have put forward a \$15 million plan to save Australia's seven most endangered frogs from extinction as a deadly fungus devastates their numbers.

The seven most at-risk frogs are:

- The southern corroboree frog (NSW)
- The northern corroboree frog (ACT and NSW)
- The Baw Baw frog (Vic)
- The spotted tree frog (Vic)
- The Tasmanian tree frog (Tas)
- The Kroombit tinker frog (Qld)
- The armoured mist frog (Qld)

David Newell, a lecturer in environmental science at Southern Cross University, and his colleagues have identified the seven most at-risk frogs. Six frog species have already become extinct as a result of the fungus's expansion into Australia. He said steps needed to be taken urgently to save the seven endangered frogs species, which have already taken a hit from the fungus's spread. "We need to act," he said. "It's a massive deal. We've already lost six species and extinction is forever.

"There's a lot of medical compounds that have come from frog skin. But they're also beautiful animals and they have an inherent right to exist."



The Baw Baw frog has been boosted by a captive breeding program at the Melbourne zoo. (Melbourne Zoo: Damian Goodall)

The frogs are vulnerable to a fungus known as chytrid, which attacks their skin, impairing frogs' ability to breathe and manage their hydration. Dr Newell said the origins of the fungus are unclear, but it probably arrived in Queensland in the 1970s and spread from there. And he said the problem is not isolated to Australia. "It's a global phenomenon. Hundreds of species worldwide are now extinct because of the chytrid fungus," Dr Newell said.

The plan proposes to spend the money monitoring the current populations and researching the fungus, while undertaking captive breeding programs to boost numbers. Some of the seven frogs identified, such as the corroboree frogs and the Baw Baw frog already have such programs in place.

The captive breeding was set up when the first threat abatement plan for the chytrid fungus was developed in 2006. The plan was reviewed at the end of last year and will go before the Environment Minister Greg Hunt within the next month.



The northern corroboree frog is a distinct species from its southern cousin. (Taronga Zoo: Michael McFadden)

Dr Newell is concerned existing funding will not be renewed.



Numbers for the southern corroboree frog dropped as low as four males in the wild. (Taronga Zoo: Michael McFadden)

http://www.abc.net.au/news/2016-04-11/frogs-facing-extinction-need-15-million/7312636?WT.mc_id=newsmail
By environment reporter Sara Phillips
Sent to FrogCall by Lothar Voigt

LIFE IN THE PARK



Come and join a free series of short talks by special guests on urban wildlife; learn about our local native animals and how to protect their habitats. Enjoy reptile, frog and bird displays, fun kids' activities and live footage, via EagleCAM, of our nesting White-bellied Sea-Eagles.

10am - Health check - Sydney Olympic Park biodiversity update Jen O'Meara, Sydney Olympic Park Authority

10.20am – Feather Map of Australia: Waterbirds meet citizen scientists Dr Kate Brandis, research fellow at the Centre for Ecosystem Science, UNSW and ANSTO

10.40am – Fishing for microbats Dr Leroy Gonsalves, NSW Department of Primary Industries

11am – Butterfly birthplaces Mia Dalby-Ball, Director, Kingfisher Urban Ecology and Wetlands



11.20am – Cities are a hazard if you are a frog Dr Arthur White, Biosphere Environmental Consultants

11.40am – Mitigating impacts of roads on threatened species in NSW Josie Stokes, Biodiversity Officer, Roads and Maritime Service

A free light refreshment will be served after talks. Whether you are a nature enthusiast or just want to get up close to some animals, everyone is welcome! Parking available at Bicentennial Park P10 carpark. Cost: Free
Tickets/Bookings: N/A All Ages More info: 02 9714 7300

http://www.sydneyolympicpark.com.au/whats_on/nature_and_environment_events/life_in_the_park_2015

NATIONAL THREATENED SPECIES DAY

Is held every year on 7 September, the day that commemorates the death in 1936 of the last thylacine (Tasmanian Tiger) in a Tasmanian Zoo. This year the number of threatened species in NSW is over 1000. While it is truly distressing to comprehend the scale of species decline there are things that can be done to halt and even reverse it.

This competition encourages primary aged children in NSW to engage with and learn more about Australia's Threatened Species, and share their views about them by making original artworks. The theme for this year's competition is *Our Threatened Plants and Animals*. The challenge is to do some research, and produce an artwork on one threatened species or highlight a reason why a species might be threatened.



<http://www.forestmedia.net.au/threatened-species-day.html>

We believe that every species of native plant and animal deserves to be protected from the threat of extinction, and to survive and flourish in its habitat for generations to come.

The art competition will be held for primary school children aged 5-12. Prizes will be given in four categories: Children aged 5-8; children aged 9-12, most unusual entry, and there will be a special prize for a group work open only to schools and educational programs.

Entries will be open for two months from 13 June – 17 August 2016. Up to forty finalists' works will be chosen to hang in an exhibition in Sydney opening on 7 September. Prize winners will be announced at the opening. This contest weaves together the love of young people for animals and plants, creativity, and environmental advocacy.

Instructions for the Artist:

<http://www.forestmedia.net.au/instructions-for-the-artist.html>

Instructions for sponsors:

<http://www.forestmedia.net.au/how-to-enter.html>

Prizes: <http://www.forestmedia.net.au/prizes.html>

FATS MEETINGS commence at 7 pm, (arrive from 6.30 pm) and end about 10 pm, at the Education Centre, Bicentennial Park, Sydney Olympic Park, Homebush Bay. They are usually held on the **first Friday of every EVEN month** February, April, June, August, October and December but not Easter (Good) Friday. Call, check our web site, Facebook page or email us for further directions. We hold 6 informative, informal, topical, practical and free meetings each year. Visitors are welcome. We are actively involved in monitoring frog populations, field studies and trips, have stalls at local events, produce the newsletter FROGCALL and FROGFACTS information sheets.

All expressions of opinion and information in FrogCall are published on the basis that they are not to be regarded as an official opinion of the Frog and Tadpole Study Group Committee, unless expressly so stated.

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FATS ON FACEBOOK: FATS has almost 1,700 Facebook members from almost every continent. Posts vary from husbandry and frog identification enquiries to photos and posts about pets, gardens, wild frogs, research, new discoveries and habitats from all over the world. The page included dozens of information files.

<https://www.facebook.com/groups/FATSNSW/>

RESCUED FROGS are seeking forever homes are at our meetings. Please contact us in advance if you wish to adopt a frog. Cash donation required to cover care costs. FATS must sight your current amphibian licence. Licences can be obtained from NSW National Parks and Wildlife Service, Office of Environment and Heritage. We request you join FATS before adopting a frog. This can be done on the meeting night. Sorry we have no EFTPOS.

<http://www.environment.nsw.gov.au/wildlifelicences/GettingAnAmphibianKeepersLicence.htm>



Thank you to the committee members, FrogCall supporters, meeting speakers, Frog-O-Graphic competition entrants, events participants and organisers David, Kathy, Sarah and Harriet Potter for an enjoyable year. The FrogCall articles, photos, media and webpage links, membership administration and envelope preparation is greatly appreciated. Special thanks to regular newsletter contributors, Robert Wall, George Madani, Jilli Streit, Karen & Arthur White, Andrew Nelson, Wendy & Phillip Grimm, Henry Cook, Marion Anstis and Bill Wangmann.



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Crinia tasmaniensis The endemic Tasmanian Froglet
Photo C R Broadfield FATS Facebook Friend



Limnodynastes dumerilii 30-6-2016
Ulverstone Tasmania Photo CR Broadfield



FIELD TRIPS

Please book your place on field-trips; due to strong demand, numbers are limited. Be sure to leave a contact number. Regardless of prevailing weather conditions, we will continue to schedule and advertise all monthly field-trips as planned. It is YOUR responsibility to re-confirm in the last few days, whether the field trip is proceeding or has been cancelled. Phone Robert on 9681 5308.

24 September 7 p.m.

Darkes Forest

Leaders: Brad and Matt McCaffery

Take the Princes Hwy south (not the free-way), then take the Darkes Forest Rd turn-off. Meet 200m from the corner.

On previous fieldtrips, we have looked at the riparian zone (“*rye-pair-ee-an*”). It is important not to think of riparian land as just a narrow strip of land along each riverbank. Depending on the nature of the land (floodplain, gorge or broad valley), the width of the riparian zone may range from a very narrow to a very wide and densely vegetated corridor. Riparian land is simply any land that adjoins or directly influences a water-body. It includes the land along creeks and gullies, it also includes land surrounding lakes, wetlands or river floodplains. Unfortunately, riparian land is often highly productive or aesthetically pleasing to man. This has often led to extensive clearing of this habitat. Often all that is left today of the riparian is a very degraded and fragmented remnant. Tonight, at this site, Brad and Matt will help us explore aspects of the riparian zone. We will discuss the importance of the riparian zone and how it influences our froglife.

Brad and Matt are two of our more experienced fieldworkers. They have a unique understanding of our frogs and how they relate to particular habitats. Most FATS members will be familiar with their intuitive way of finding even the most difficult of frogs.

22 October 7.30 p.m.

Sydney Olympic Park

Leader: Josie Styles

Meet in the carpark at Wentworth Common. The carpark is in Marjorie Jackson Parkway, about 150m from the intersection with Bennelong Parkway.

The Sydney Olympic Park precinct is known for its population of endangered Green and Golden Bell Frogs. The frogs here soared to public prominence during the planning and construction of the Sydney Olympics venue. These frogs had long-occupied this derelict and largely-forgotten site. The Bell Frogs were facing an uncertain future in the face of a construction project that was perhaps the largest ever undertaken in Australia. The public watched as degraded wetland sites were enhanced to ensure the long-term survival of Bell Frogs. This recovery program was necessary to fulfil environmental obligations to the International Olympic Authority and to placate an international audience that had been given many desperate assurances by the Government. Tonight, we will look at how the Bell Frogs are faring a decade-and-a-half later.

Josie works as a Biodiversity Specialist for the Roads and Maritime Service. She provides advice on the environmental impacts of major roads and develops mitigation measures to lessen the impact of those roads. She is well-acquainted with the Bell Frogs of Sydney Olympic Park as she previously spent ten years with the Australian Museum monitoring the Bell Frog population here.

11 – 13 November

Smiths Lake Camp-Out

Leaders: Karen and Arthur White

In Australia, frogs survive periods of extreme aridity by entering into a dormancy known as aestivation (“*es-tuh-va-tion*”). Frogs will also aestivate as cold weather approaches. The body metabolism is slowed down to lower energy use and to reduce water requirements. Historically, the word “aestivation” comes from a Latin word which alludes to “summer sleep”. Aestivation is generally regarded as being different to hibernation. “Hibernation” comes from the Latin word “*hibernia*”, which means “winter sleep”. Broadly speaking, only larger mammals such as bears hibernate (until food resources become available in the Spring). Students should also note that many smaller animals, such as micro-bats, birds and insects enter into a daily or nightly “torpor” to similarly save energy. Torpor is usually a much more short-lived phenomenon than hibernation or aestivation (usually on a daily cycle) and is perhaps the most common energy-saving strategy amongst wildlife. All three terms are subtly different, but allude to the much the same thing. It is the way in which an animal conserves energy and avoids dehydration in adverse conditions. These strategies enable animals to survive in environments that would otherwise be unsuitable for it, and allows a species to expand their distributional range.

This weekend, Arthur will discuss aestivation, hibernation and torpor. We will examine the ways in which some of the local species conserve energy and cope with environmental extremes. Arthur and Karen have spent many years studying the Smiths Lake area and have built up an encyclopaedic knowledge of the area and particularly with its wildlife. Karen and Arthur always put on a great week-end here! Dormitory/cabin accommodation and camping sites are available. All kitchen facilities, crockery and utensils supplied. Hot showers. There is a **non-refundable** fee of \$17-50 p.p. per night. A maximum of twenty-five people. For bookings and enquiries, please phone Karen and Arthur White on ph.9599-1161.

In the event of uncertain frogging conditions (e.g. prolonged/severe drought, hazardous and/or torrential rain, bushfires etc.), please phone 9681-5308. Remember! rain is generally ideal for frogging! Children must be accompanied by an adult. Bring enclosed shoes that can get wet (gumboots are preferable), torch, warm clothing and raincoat. Please be judicious with the use of insect repellent – frogs are very sensitive to chemicals! Please observe all directions that the leader may give. Children are welcome, however please remember that young children especially can become very excited and boisterous at their first frogging experience – parents are asked to help ensure that the leader is able to conduct the trip to everyone’s satisfaction. All fieldtrips are strictly for members only – newcomers are however, welcome to take out membership before the commencement of the fieldtrip. All participants accept that there is some inherent risk associated with outdoor fieldtrips and by attending agree to; a release of all claims, a waiver of liability, and an assumption of risk.