



amphibian ark
2008 YEAR OF THE FROG

CMaG:ARAZPA NZ 2008 Year of the Frog

NZ's response to the campaign

Information Pack



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1. Introduction

1.1 Amphibians in Crisis

Our planet is facing the single largest mass extinction since the disappearance of the dinosaurs. After thriving for over 360 million years, a third to half of the world's approximately 6,000 known amphibian species could be extinct in our lifetime.

The most numerous life forms on earth are insects and frogs keep insect populations in check. Frogs are often referred to as 'environmental indicators' – our modern-day 'canaries in the coal mine' - because of their porous skin which allows both air and water directly through it which makes frogs susceptible to any and all pollutants in the environment.

Amphibians are severely affected by habitat loss, climate change, pollution and pesticides, introduced species, and over-collection for food and pets. While habitat destruction is the major threat, one immediate cause is a parasitic fungus called amphibian chytrid, a disease that is deadly to hundreds of amphibian species. Amphibian chytrid is currently unstoppable and untreatable in the wild. It can kill 80% of native amphibians within months, causing widespread amphibian species extinctions.

1.2 A Global Campaign

The World Association of Zoos and Aquariums (WAZA) and World Conservation Union (IUCN) have declared 2008 the Year of the Frog and has formulated a response in the Amphibian Conservation Action Plan (ACAP). An integral part of that response is the Amphibian Ark, in which select species that would otherwise go extinct will be maintained in captivity until they can be secured in the wild. Without immediate captive management as a stopgap component of an integrated conservation effort, hundreds of species could become extinct.

Functionally, the AArk serves as the *ex situ* branch of the IUCN Amphibian Specialist Group Conservation Division; it will carry out the *ex-situ* components of the IUCN Amphibian Conservation Action Plan (ACAP).

2. Our Response

2.1 ARAZPA Campaign

The Australasian campaign is part of this global initiative and seeks to generate public awareness and understanding of the amphibian extinction crisis, engage the public in amphibian conservation by highlighting ways in which they can make a positive contribution in their daily lives, and generate Aus\$400,000 for implementing *ex-situ* aspects of the IUCN Amphibian Conservation Action Plan (ACAP). This equates to \$0.03 per visitor to each ARAZPA institution.

70% of the funds generated will be allocated to urgent amphibian projects in Australia and New Zealand. Amphibian experts consistent with ARAZPA's Amphibian Action Plan and government conservation priorities will determine these projects.

The remaining 30% of funds raised will support the global campaign, and will be allocated for public awareness, management of the global programme and also to help fund initiatives such as workshops, rescues, cooperatively managed centres and coordination of activities within each region.

A full version of the ARAZPA 2008 Year of the Frog Campaign Information Pack is available for download from the ARAZPA website (<http://www.arazpa.org.au/Year-of-the-Frog/default.aspx>).

2.2 CMaG: ARAZPA NZ Campaign

The New Zealand campaign will be launched at the annual CMaG: ARAZPA NZ Conference so the New Zealand Year of the Frog will therefore officially run from June 2008 – June 2009. Throughout this period our aims are to:

- *Raise Awareness* - of the plight of frogs internationally (and especially our four remaining species of native frogs);
- *Raise Funds* - for the Amphibian Ark (AArk);
- *Take on Insurance Populations* – to ensure all four of our native species survive.

Ruud Kleinpaste and Phil Bishop have agreed to be Ambassadors and Spokespeople for our New Zealand Year of the Frog campaign to support our efforts and provide public faces and expertise for the media.

A particular emphasis should be placed on conducting as many activities as possible around the country during the official Frog Week of 28th September to 4th October 2008.

3. How to Participate

To enrol your organisation to participate in the Year of the Frog campaign please complete the registration form available from the ARAZPA website (<http://www.arazpa.org.au/Year-of-the-Frog/default.aspx>).

3.1 Raising Awareness

Raising awareness of the plight of amphibians, and particularly our native species, can be achieved by a variety of methods. Those listed below are examples of some ideas proposed by Keepers and Educators.

Children's Activities:

- Frog call game/contest;
- Frog jump contest or 'frog prints' painted on ground to show jump distance;
- Clay modelling classes;
- Frog stories – indigenous myths and legends.

Large skeletal frogs (3D Frog activity) on floating lillypad in waterways/moats.

Interpretation - Create interpretive signage that reflects the current 2008 initiative; either wholly new if none exists in your amphibian display, or supplement existing with Amphibian Ark/2008 Year of the Frog material.

Keeper Presentations - Utilise any freshwater or herptile visitor experience to promote the plight of frogs and individual actions to help.

Formal Education Programmes – As described in a later section the Year of the Frog campaign can be addressed in a variety of contexts with school groups.

Media – Events and activities based on Year of the Frog inherently provide great opportunities for media involvement. Combined with the strengths of our Ambassadors and Spokespeople this is a great avenue to utilise.

3.2 Raising Funds

Collection boxes - The 'whirlpool' style collection box in which the coins race to the 'drop' is eternally popular. Similar 'interactive', frog themed donation boxes would be a great way to collect public contributions – a coin chute that is the frog's tongue? Make the coin jump the lillypad or into the frogs mouth?

Do a White Pages search for "frog" and contact frog related businesses to ask for a contribution, to display collection boxes, sell merchandise etc.

All funds raised during the campaign should be transferred to:

Account name: Australasian Regional Association of Zoological Parks and Aquaria
(Year of the Frog)
BSB: 012-351
Account no: 486499031
Swift Code: ANZBAU3M

Or if this is not possible cheques should be made payable to “ARAZPA (Year of the Frog)” and sent to:

ARAZPA Year of the Frog
PO Box 20
Mosman, NSW 2088
Australia

3.3 Taking on Insurance Populations

Hamilton Zoo holds a population of Hochstetter’s Frog, Auckland Zoo hold Archey’s Frog, Orana Wildlife Trust are seeking to hold Maud Island Frog to augment the population held in Karori Sanctuary. Hamilton’s Frog is currently unrepresented in insurance populations and this needs to be addressed.

4. Ambassadors and Spokespeople

4.1 Ruud "Bugman" Kleinpaste

Ruud was born in Indonesia but moved with his Dutch parents to Holland when he was still very young. He rolled through the school system as a rather average student, but managed to pick up some foreign languages along the way. This, according to some people, accounts for his incomprehensible utterances.

Natural history has always been Ruud's passion: from an early age he possessed binoculars and chased birds in a wide range of habitats. After high school, Ruud enrolled at Wageningen University, where he gained an MSc honours degree in silviculture, animal ecology and conservation, while managing to travel extensively around Europe and farther afield. During his university studies, entomology became an important hobby, although he never actually took a paper in the subject: a hobby is much better than a job!

In 1978 Ruud migrated from the Netherlands to New Zealand, where he was appointed Scientific Advisor for the Nature Conservation Council (Wellington), before moving to DSIR Entomology Division and, later, joining the New Zealand Forest Service on an 18 month contract to study the ecology of the brown kiwi (*Apteryx australis*) in Waitangi State Forest.

From 1982 to 1996 Ruud was employed as an entomologist with MAF in Auckland, working on a huge number of subjects, ranging from aircraft disinsection research, pest identification and control, to biosecurity issues. At that time, MAF was a medium-secure institution, allowing entomo-hobbyist to be integrated into the community under supervision.

But it became apparent that the plight of creepy crawlies needed an advocate: in 1987 "the Bugman" was born in the shape of a talkback show (*Ruud's Awakening*) on Newstalk ZB, a number one-rating programme that has continued in various formats over the past 19 years. Since 1988 regular columns and articles in newspapers and magazines (Auckland Star, NZ Listener, Your Home & Garden, Growing Today, New Zealand Gardener etc.) have been keeping New Zealanders up-to-date with all those small invertebrate animals we share our planet with. Ruud's first book *Scratching for a Living* was published in 1997, and because it is out of print, it can now only be stolen from a reputable library. His second book, *Backyard Battlefield*, appeared in March 2005.

For many years, Ruud has lectured Plant Protection at UNITEC, in an attempt to encourage common-sense growing practices amongst the future horticulturists of New Zealand. The sub-title of the course was: "How to murder your plants more slowly".

He's a trustee of Project Crimson (protecting icon endemic tree species), the Little Barrier Island Supporters Trust, Bank of New Zealand Save the Kiwi Trust and patron of Keep New Zealand Beautiful. He also served on Auckland's Zoo Enterprise Board from 1989 to 1998 as a co-opted member. It all helps to publicise the importance of our Natural Heritage, both in New Zealand and around the globe. In 2008 Ruud was asked to be the Ambassador for "the Year of the Frog".

Television has been part of the Bugman's life since 1990; he worked on TV3's "*Early Bird Show*", presented many items for the kid's show "*What Now?*" and the "*New Zealand*

Today Show", and narrated a four part docu-drama ("*The Enduring Land*") on the history of farming in New Zealand, broadcast on TVNZ.

From 1992 till the end of the programme in December 2003, Ruud has been part of the presenters team of "*Maggie's Garden Show*", a job that has taken him right around the country, Australia and the Pacific, and even back to his home country, the Netherlands. More recently he has been appearing as an entomologist on Animal Planet/Discovery programs (*Twisted Tales* and *Most Extreme*) and has regularly contributed segments for "*Good Morning*" (TVNZ).

His documentary "*The Bughouse*" screened on TV ONE in August 2001, and in 2003/2004 activities started to centre around international television programs; "*The World's Biggest and Baddest Bugs*", was filmed in High Definition format for Discovery Channel and Animal Planet in the USA.

This resulted in a brand new project: fronting a series of shows for Animal Planet (and High Definition Discovery Channel) called "*Buggin' with Ruud*". From late November 2004 to late November 2005, Ruud travelled the world, filming "Buggin'" in the most exotic and weird locations – from Alaska and the Okefenokee swamp, to Papua New Guinea, Namibia and the Venezuelan Amazon. About 40 weeks were spent filming 13 one-hour episodes which included some strange stunts.

The profile of "*Buggin' with Ruud*" led to two Emmy nominations in 2006 and a number of appearances on some of the American networks' popular shows, such as the 'Tonight Show' with Jay Leno. The best aspect of it all is that now the Americans are slowly starting to grasp the crucial importance of insects and other invertebrates; a world we know relatively little about!

In April 2008 the Waikato University bestowed on him an Honorary Doctorate – something that "flattened" Ruud: he was speechless for once!

Ruud (technically) still lives in Auckland, New Zealand, with his wife Julie and son Tristan, and when he is not working on media projects, he does research, or works as a consulting entomologist for Government Departments and private companies based in New Zealand, Japan or points in-between ... or he prepares a new destination for the next eco-tour he wants to lead: He loves Nature, ecology and invertebrates so much that he goes out of his way to find little bits of paradise all over the world ... while constantly striving to change people's perceptions about the small things in life that matter so much to our world!

How Ruud Can Help:

Ruud has agreed to be keynote speaker at the CMAG: ARAZPA NZ Conference in June. He is keen to use his regular articles in NZ Gardener and Growing Today to raise awareness. Although he is not available to do a speaking circuit around other zoos and wildlife parks, he is more than happy to mention any frog related activities in zoos on ZB and at any other opportunity he gets. He is also more than happy to provide quotes for press/media releases.

4.2 Phil Bishop

After completing a BSc (Hons) and a MSc degree in Zoology at Cardiff University (UK) Dr Phil Bishop was keen to pursue a research career involving amphibians, and completed his PhD on amphibian communication at the University of the Witwatersrand, South Africa where he discovered and named a new species of frog, *Arthroleptella ngongoniensis*.

His interest in frog communication, particularly in 'earless' frogs brought him to New Zealand where he now resides. Since 1995, his interests have become increasingly involved with frog conservation and causes of frog declines. His current research has three main strands:

- Leiopelma reproductive biology and conservation
- Frog communication
- Chytridiomycosis.

In 2005 he was appointed as the co-leader of the New Zealand Native Frog Recovery Group and is now leader of the New Zealand Frog Research Group, University of Otago, currently in the process of writing the new *Leiopelma* recovery plan. As well as being the previous DAPTF Working Group Chair for NZ he has recently been appointed as the Amphibian Specialist Group Working Group Chair for New Zealand.

How Phil Can Help:

Phil is an excellent speaker with current knowledge and expertise in the area of native frogs. He is very happy to help in any way he can including quotes for media releases. Phil is keen to list details of activities or events taking place around the country on the NZ Frog website (www.nzfrogs.org). He will talk at any zoo or any other forum if his flight and accommodation costs can be covered.

5. Education Messages

These key messages can easily be included in formal education programmes associated with a variety of topics. Frogs may only play a small part in the overall content of the programme but our messages are easily included.

- Amphibians/Herptiles;
- Native Species;
- Endangered Species;
- Animals in Captivity.

To a lesser degree these messages can also be included in informal education such as public presentations/feeds/keeper talks.

5.1 Check, Clean, Dry

The didymo message has been well publicised and provides a platform to piggy-back/carry our message while reiterating the same, to stop it from fading from public awareness. The message is equally important in slowing the spread of chytrid fungus. The *Check Clean Dry* message has been prioritised since it develops a capacity for action that provides ongoing environmental protection, is not limited to a single instance or species, and will help to combat the spread of any aquatic pests.

5.2 Never Keep

Frogs are kept by a variety of organisations (kindergartens, primary and secondary schools) and are often housed in entirely inadequate facilities, and with no expertise in their wellbeing. In addition, they are frequently sourced from pet stores or local waterways, and upon completion of the study or breeding of excess individuals these are released into the local waterways. This has proven to be a major factor in the spread of amphibian chytrid fungus through local waterways (pet stores are believed to be responsible for the original introduction of chytrid fungus to New Zealand and are known to source stock from infected waterways).

5.3 Tell Someone

Everyone can assist in the plight of amphibians by simply telling someone else about what is happening and what they can do to help. Direct them to a website or provide them with a brochure.

6. Frogs in New Zealand

6.1 Native Species

New Zealand's native frog species have several special features that make them unlike any others in the world; round rather than slit eyes, hatching straight into an almost fully-formed frog instead of tadpoles, no external ear drums, not croaking regularly like most other frogs and catching their prey in their mouths rather than with their tongue!

6.1.1 Archey's Frog (*Leiopelma archeyi*)

This is the smallest of New Zealand's native frogs with a length up to 31 mm for males, 37 mm for females. They can vary from mostly green to green and brown to mostly brown and have no or little webbing in the hind toes. The male Archey's frog may then carry his young offspring around on his back. Archey's are found only in the Coromandel and at one site west of Te Kuiti in moist forests, grassy clearings, ridges, and sub-alpine scrub around 200-1000 m altitude. They become active at night and feast on small insects, worms and other invertebrates. A **nationally critical** species (DoC) or **critically endangered** (IUCN).

6.1.2 Hochstetter's Frog (*Leiopelma hochstetteri*)

This is a small stocky frog with a length up to 38 mm for males, 47 mm for females. Mostly brown, and occasionally green, its hind toes are webbed for about half their length, and it has more warts than the other native frogs. The male frogs do not care for their young. The most widespread native frog, Hochstetter's have been seen around the upper half of the North Island, central North Island, and the Raukumara Ranges and Maungatautari Mountain. This species is semi-aquatic, living in shaded creek edges in forest, up to about 800 m altitude rather than on land where the other three species are found. When mature they feed on insects and spiders. A **sparse** species (DoC) or **vulnerable** (IUCN).

6.1.3 Hamilton's Frog (*Leiopelma hamiltonii*)

This is a small frog with a length up to 43 mm for males, 49 mm for females, and one of the rarest frogs in the world with a population estimate of about 300 individuals. This species is virtually indistinguishable from the Maud Island frog. Females tend to be larger than males, but are otherwise identical. Males attend the eggs and hatchlings, which climb onto its back and legs. It is only found on the summit of Stephens Island in Cook Strait. This frog eats small insects and other terrestrial arthropods. A **nationally critical** species (DoC) or **endangered** (IUCN).

6.1.4 Maud Island Frog (*Leiopelma pakeka*)

Their overall colouration is brown (ranging from light tan to almost black), with black patterning over their backs and faces, and the upper part of the iris is bright gold. The hind limbs are fairly short, and the feet have no webbing. They look almost identical to *Leiopelma hamiltoni* but are slightly smaller at about 47 mm. The eggs are guarded by the male and froglets may then be carried on his back and legs. They are only found on Maud Island in the Marlborough Sounds and Motuara Island amongst boulders, logs, and rocks toward the lower, damper, less steeply sloping part of the forest, with no permanent streams or seepages. Their diet consists of terrestrial insects. A **nationally endangered** species (DoC) or **vulnerable** (IUCN).

6.2 Introduced Species

Although at least 8 species of frogs were imported into New Zealand in the late 1800s only three of these established breeding populations that still exist today. They are fairly easy to identify as they all produce characteristic vocalisations and appear quite distinct from the native species.

6.2.1 Green and Golden Bell Frog (*Litoria aurea*)

The Green and Golden Bell Frog is a large, stout frog; adults range from 45 mm to 110 mm. A creamy-white or pale yellow stripe, bordered above with gold and below with black, extends from behind the eye, across the tympanum to the groin. Mature males develop a yellowish colouration to the vocal sac on the throat.

It is most typically found in coastal South-Eastern Australia, and Northern areas of the North Island of New Zealand in short-lived freshwater ponds that are still, shallow, unshaded and unpolluted. The frog prefers water bodies that support emergent vegetation such as reeds and bullrushes for basking. Adults have a very broad diet, including insects and other frogs, even of the same species. The tadpoles feed on detritus, algae and bacteria. A **vulnerable** species (IUCN).

6.2.2 Southern Bell Frog (*Litoria raniformis*)

This species is a very large ground-dwelling tree frog growing up to 100 mm in length. It is a mottled bright green and bronze colour above, often with dark brown enameled bumps. There is a pale stripe running from the side of the head down the flanks as a skin fold and there are a series of shallow bumps over its back. Found in Southern Australia and throughout New Zealand, this species is associated with large swamps, permanent dams, ponds and lakes (particularly ones with reeds) in woodland, shrubland, open and coastal areas. This frog eats small water vertebrates and invertebrates. It has been reported that these frogs will hunt other frogs by zoning in to the sound of their calls. An **endangered** species (IUCN).

6.2.3 Brown Tree Frog (*Litoria ewingii*)

This species reaches 45 mm in length. It is pale to dark brown on the dorsal surface, with a broad darker patch starting at the eyes and covering the majority of the back. There is a dark band starting at the nostril which runs through the eye and tympanum to the shoulder. This species is found in a wide range of habitats in Coastal Southern Australia, the South Island of New Zealand and a few locations in the North Island. This includes forest, farmland, heathland, semi-arid areas, alpine regions and suburban areas. The diet of this species consists of small invertebrates. A **least concern** species (IUCN).

7. Appendices

The following material has been prepared by CMaG: ARAZPA NZ in the development of their Year of the Frog response and is available for download from the CMAG: ARAZPA NZ website for use by other institutions. They have been developed as a package to present consistent messages and use a multi-layer interpretive approach to address varying levels of interest, from a cursory glance to attentive reading.

Additional images for use during the campaign are available from (<http://zims.isis.org/aark/YOTF%20Campaign%20Pack%20images/Forms/AllItems.aspx>) the Amphibian Ark Team Portal website.

Logos, campaign artwork and additional information are also available from the Amphibian Ark website (<http://www.amphibianark.org/YOTFinfopack.htm>).

7.1 Year of the Frog Display Panel

In its full size this panel measures 1000 x 600mm and is mounted over three facing sides of a square pillar for use in lobbies, reptile houses, cafeterias, etc. Printed on A4, trimmed and laminated it can be formed into a triangle for placement on cafeteria tables.

7.2 Amphibian Crisis Brochure

Designed to be printed double sided with the chytrid poster this forms a “broster” – a four panel brochure that opens out to expose the poster. The content has been formulated to include quotes from frog specialists in all four main centres and multiple calls to action. The poster emphasises the Check Clean Dry message and espouses proven sterilisation methods.

7.3 Frog Interpretation Poster

When printed onto an overhead projector transparency this poster can be used in backlit light boxes for display alongside existing amphibian exhibits to highlight the Year of the Frog and Amphibian Ark. It is also useable in paper format for non illuminated interpretation panels.

Native frogs are unique!

Our frogs have several special features that make them unlike any others in the rest of the world.

They have round rather than slit eyes, no external ear drums, catch their prey in their mouths rather than with their tongue, hatch straight into an almost fully-formed frog instead of tadpoles, and don't croak regularly!

Hochstetter's Frog Maud Island Frog has been seen around is only on Maud and the upper half of the Motuara Islands in the North Island. Marlborough Sounds.

Sparse Nationally endangered



Hamilton's Frog Archey's Frog is only found on the can be found in the summit of Stephens Coromandel and in one Island in Cook Strait. site west of Te Kuiti.

Nationally critical Nationally critical



amphibian ark
2008 YEAR OF THE FROG
Frogs Matter. Jump In.

Our planet is facing the single largest mass extinction since the disappearance of the dinosaurs.

One third to half of the world's known amphibian species could be extinct in our lifetime. Frogs are often called modern-day 'canaries in the coal mine'; their skin allows both air and water directly through it and makes frogs one of the first to suffer when the environment is contaminated.

Habitat loss, pesticides, herbicides and now the waterborne 'chytrid' fungus are killing frogs in huge numbers.

Zoos and Aquariums worldwide are working together on the 2008 Year of the Frog to raise funds for the Amphibian Ark; so that endangered frogs can be cared for until they can be released back into the wild.

Otherwise hundreds of species could become extinct.



Archey's Frog
(*Leiopelma archeyi*)

What can YOU do?

Although the actions we take on our own may seem small, together we can make a huge difference.

After crossing any waterway give your boots, boat, kayak, car, rods etc a thorough Check, Clean and Dry.

Don't keep frogs as pets - many of our local waterways are infected with the chytrid fungus.

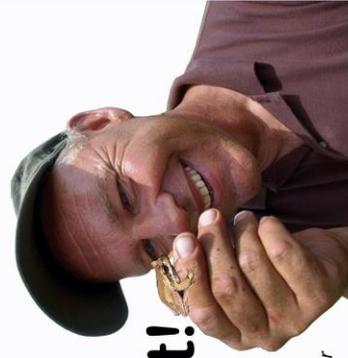
Never release frogs into the wild or move them to different areas of the country.

Report your sightings of native frogs to DoC: don't touch the frog because you may damage its skin.

Make a donation to support the Year of the Frog and the Amphibian Ark.

...tell someone else how they can help!

hop-to-it!



Ruud "Bugman" Kleinpaste
Year of the Frog Ambassador



In some frog populations with the disease only some **animals die**; in others, it can cause 100% mortality. Surviving individuals are thought to be carriers.

There is no known treatment for the fungus in the wild, so we need to do what we can **stop it spreading**.

Recent studies show the Earth's warming climate is contributing to the increase of chytrid disease, a **fungal infection** that is already responsible for the extinction of many frog species. Scientists know the spore stage can swim through water to infect other frogs, but there is still much to learn about how the disease spreads.

The fungus invades the surface layers of the frog's skin but it is not yet known exactly how this kills the frog. Possibly, the fungus **releases toxins** into the skin, or it may directly affect water uptake and respiration.

Hamilton's Frog

New Zealand's four species of **native frogs** belong to an ancient genus and differ little from the first frogs over 200 million years ago. All are nocturnal, lack ears and don't croak. They hatch from the egg as fully developed froglets, missing out a tadpole stage entirely.



Southern Bell Frog

What can YOU do?

Although the actions we take on our own may seem small, together we can make a huge difference.

After crossing any waterway **give** your boots, car, rods etc a thorough Check, Clean and Dry.

Don't keep frogs as pets - many of **our** local waterways are infected with the chytrid fungus.

Never release **frogs** into the wild or move them to different areas of the country.

Report **your** sightings of native frogs to DoC: don't touch it because you may damage its skin.

Make a donation to **support** Year of the Frog and the Amphibian Ark at your local zoo.

...tell someone else how they can help!



Green and Golden Bell Frog



Brown Tree Frog



Phillip Bishop, University of Otago

"They've been likened to canaries in the coalmines; if something is going on with the frogs then it's a sure sign there's something going on in the environment."

Ben Bell, Victoria University

"The fungus seems to be spreading at an alarming rate, and clearly not just via waterways. Hikers and pig hunters may carry the disease deep into the bush on their boots and clothes."

Ermin Sadic, University of Canterbury

"Frogs distributed by the pet trade are probably the main vector for [chytrid fungus] spread."

Andrew Nelson, Auckland Zoo

"These frogs are ancient, exquisite creatures that we absolutely must not lose."



Archer's Frog

Where have all the frogs gone?

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2008 YEAR OF THE FROG
Frogs Matter. Jump In.

PROTECT OUR WATERS FROM CHYTRID AND OTHER AQUATIC PESTS



When you are moving items between waterways you must:

CHECK Remove all obvious matter from items that have been in the water.

CLEAN Soak and scrub all items that have been in the water for at least one minute with:

- 2 percent solution of bleach;

OR

Soak and scrub all items that have been in the water for at least five minutes with any of the following:

- 5 percent solution of salt;
- hot (60°C) water;

A 2 percent solution is 200ml, a 5 percent solution is 500ml (two large cups), with water added to make 10 litres.

DRY If cleaning is not practical, dry items completely and then leave for at least 48 hours before using in another waterway.

For more information visit:

www.nzfrogs.org



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A third to half of the world's **amphibian species** could be extinct in our lifetime. Habitat loss, pesticides, herbicides and now the waterborne 'chytrid' fungus are killing frogs in huge numbers.

Zoos and Aquariums worldwide are working together on the 2008 Year of the Frog to raise funds for the Amphibian Ark; so that endangered frogs can be cared for until they can be released back into the wild. Otherwise hundreds of species **could become extinct.**



Southern Bell Frog
(*Litoria raniformis*)

What can YOU do?

After crossing any waterway **give** your boots, boat, kayak, car, rods etc a thorough Check, Clean and Dry.

Don't keep frogs as pets - many of **our** local waterways are already infected with the chytrid fungus.

Never release **frogs** into the wild or move them to different areas of the country.

Report **your** sightings of native frogs to DoC: don't touch the frog because you may damage its skin.

Make a donation to **support** the Year of the Frog and the amazing Amphibian Ark.