



How to Make a Frog Pond with Local Native Plants



INTRODUCTION

Setting up a frog garden with local provenance plants is a simple exercise. Once you have a water-tight container (whether a fancy glazed pot, an old bath-tub or laundry tub, or a hole in the ground that retains stormwater), you are ready to start.

A part sun/part shade position in the garden or courtyard is ideal to locate the pond, and now all you need are the plants. The following selection from Trees In Newcastle Nursery will provide some plants for the surrounds of the pond that are generally broad-leafed, and that will in time arch over the pond allowing good access to the water for frogs and suitable shelter zones for the mature frogs.

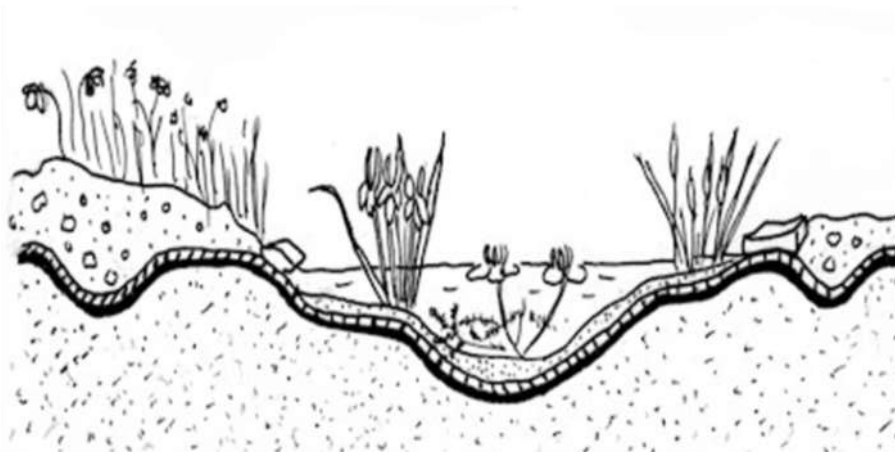
Other plants in the selection can be planted in the water: if you have a glazed pot, old bath or laundry tub, it is probably best to plant the tubestock into **6" or 8" pots with a layer of sand or pebbles** on top to prevent the potting mix soiling the water. Then simply lower the pots into the pond. They can then be easily lifted out of the pond for cleaning of the pond if necessary, or removing dead leaves and tidying up the plants.

If you have a natural pond or dam, you can plant the tubestock in the mud in the shallows at the pond edge.

Frogs are particular about their habitat and so to be sure of their survival, there should be a plan made up prior to the arrival of the new guests.

The plan should include the following:

1. A strategy for clearing weeds from the areas around the ponds
2. Identification and division of the areas into zones
3. A species list for planting
4. A planting strategy
5. A maintenance and monitoring program



1. Weed strategy

One of the most threatening maintenance practices concerning the management of frog populations is the mowing and slashing of exotic grasses. Weeds should be removed prior to the arrival of the frogs.



Disturbance should be kept to an absolute minimum when the frogs are located, ideally none at all.

Allow enough site preparation time to for removal of weeds to occur.

This includes

- a period of 2 weeks after spraying, to check the effectiveness and
- time to allow for re-spraying.
- Also a withholding time of one month after spraying is recommended for the health of the frogs.



It is recommended that the existing exotic grass is sprayed with Roundup Biactive.



The following steps are recommended:

- Identify potential weeds for removal
- Identify weed removal options
- Identify site preparation time frame

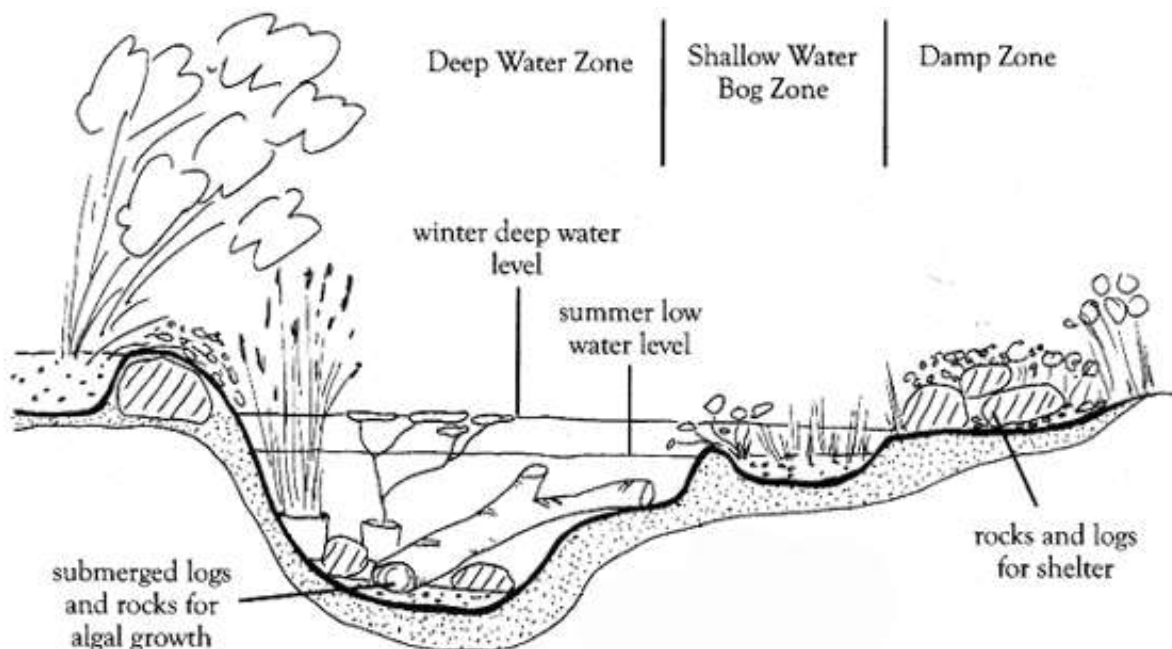


2. Divide the areas into zones

Dividing the areas into zones is helpful for planning your planting strategy. You will be able to choose the correct plants and evaluate how many you will need.

Zones will consist of:

- The Ponds- Emergent Vegetation
- Bank slope to the water
- The Raised Banks
- Surrounding Grassed Area
- Possible depressed water pooling or boggy areas
- Pathways or access points



3. A species list for each area

Tufted native grasses, reeds and sedges densely planted at 6 to 8 plants per square metre should provide quick coverage and shelter zones for the frogs.

A combination planting of the following species should provide a suitably dense habitat for each section of the pond habitat.

Frogs tend to spend time in the water when they are spawning but spend the majority of their time in damp vegetation and mulch.

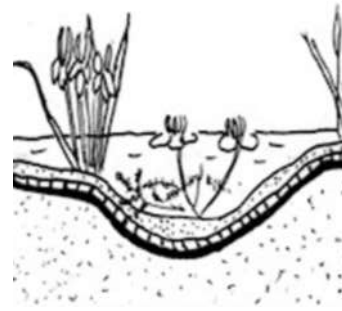
Getting to know the species that you have chosen for each site will enable you to plant them in the right place. This will ensure the survival and health of the plants and the enhancement of the natural habitat.

| Plant Species | The pond Emergent | Bank Slope to the water | The raised banks | Surrounding grassed area | Boggy areas |
|----------------------------------|-------------------|-------------------------|------------------|--------------------------|-------------|
| <i>Typha</i> sp | ✓ | | | | |
| <i>Baumea articulata</i> | ✓ | | | | |
| <i>Eleocharis sphacelata</i> | ✓ | | | | |
| <i>Bolboschoenus fluviatilis</i> | ✓ | | | | |
| <i>Baumea juncea</i> | | ✓ | | | ✓ |
| <i>Crinum pedunculatum</i> | | ✓ | | | ✓ |
| <i>Isolepis nodosa</i> | | ✓ | ✓ | ✓ | |
| <i>Juncus kraussii</i> | | ✓ | | | ✓ |
| <i>Juncus usitatus</i> | | ✓ | | | ✓ |
| <i>Sporobolus virginicus</i> | | ✓ | ✓ | | ✓ |
| <i>Pericaria</i> sp. | | ✓ | | | |
| <i>Lomandra longifolia</i> | | | ✓ | ✓ | |
| <i>Dianella caerulea</i> | | | ✓ | ✓ | |
| <i>Carex appressa</i> | | | ✓ | ✓ | |
| <i>Austrodanthonia</i> spp | | | | | ✓ |
| <i>Themeda australis</i> | | | | ✓ | |
| <i>Poa</i> spp | | | | ✓ | |



a)The Pond- Emergent Vegetation

The vegetation in the pond will help the frogs both access and exit the water easily and be perching habitat and act also as habitat for food creation for them.



Suitable local native species could include the following:

Typha sp
Cumbungi, Bullrush
(from division of plants in existing ponds or nearby)



Bolboschoenus fluviatilis
Marsh Clubrush



Baumea articulata
Jointed Twig Rush

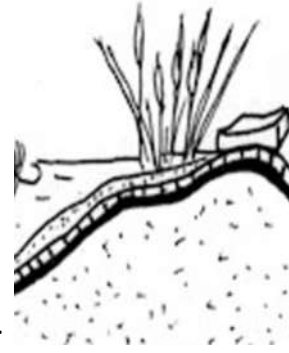


Eleocharis sphacelata
Tall Spike Rush



b) Bank Slope to the water

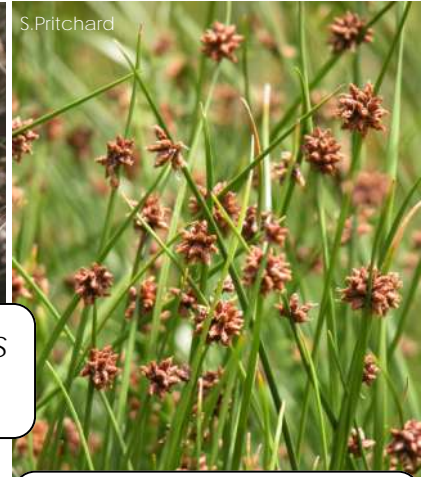
This is likely to be a foraging zone for the frogs and so needs to be dense. It will be inundated with water when it rains and so needs species tolerant to periodic waterlogging and drying out.



Persicaria sp.



Sporobolus virginicus
Saltwater Couch



Isolepis nodosa
Club Rush



Juncus usitatus
Common Rush



Baumea juncea
Sedge

Royal Botanic Gardens-Sydney



Crinum pedunculatum
Swamp Lily



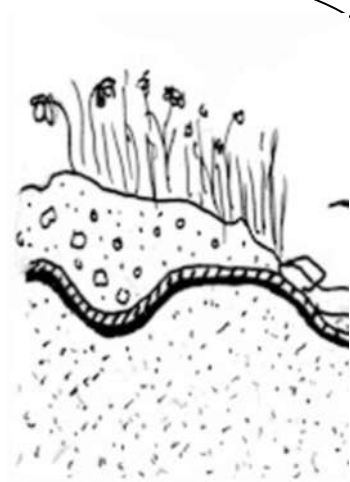
Juncus kraussii
Sea Rush



c) The Raised Banks

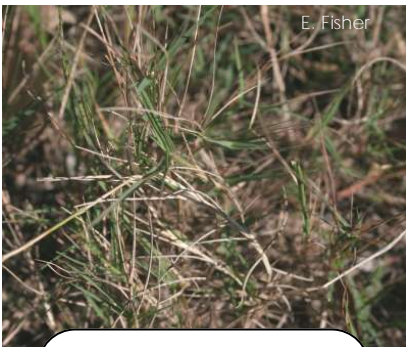
Plants tolerant of a sunny, dry and moist position will be perfect in this spot. They will be a continuation of the foraging area and also provide cover and protection and help the frogs retain moisture.

Suitable local native species could include the following:



Dianella carulea Paroo Lilly

Carex appressa
Sedge



Sporobolus virginicus
Saltwater Couch



Isolepis nodosa
Club Rush



Lomandra longifolia
Mat Rush



d) Surrounding Grassed Area

It is recommended that this area be planted with native grass substitutes. Nothing taller than this should be planted so as not to give predator birds the advantage.

Suitable local native species could include the following:

- Carex appressa* Sedge
- Isolepis nodosa* Club Rush
- Lomandra longifolia* Mat Rush



S.Pritchard

Themeda australis
Kangaroo Grass



Royal Botanic Gardens Sydney

Austrodanthonia spp
Wallaby Grasses



nativegrasses.com.au/



Dianella carulea
Paroo Lilly

Poa spp.
Tussock Grasses

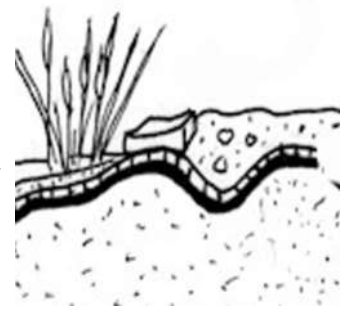


Jackie Miles & Max Campbell



e) Depressed water pooling or boggy areas

Some shallow ephemeral water holding hollows could also be created in the grassed areas, at this establishment phase, as these would act as foraging areas for the frogs.



Suitable local native species could include the following:



Juncus usitatus
Common Rush



Baumea juncea
Sedge



Juncus kraussii
Sea Rush



Crinum pedunculatum
Swamp Lily



Sporobolus virginicus
Saltwater Couch



f) Pathways and Access Points

Pathways and access points are important for people wishing to see the frogs and will direct traffic to minimize disturbance of growing plants and the frogs' foraging zones.

These should also be established prior to planting, and be preferably built from natural mulch products (no cement, bitumen or treated pine logs). Maintenance should then consist of hand removal of weed species.

4. Planting Strategy

It would be beneficial to have the plants growing and well established before the frogs arrive to ensure minimum disturbance and also cover, so as not to be easily predated on by birds and other animals.

Employ a strategy for successful planting:

- Identify species to be planted
- Identify species and numbers to be planted for each zone
- Identify a strategy for planting each section
- Identify a planting and establishment time frame

5. Maintenance and monitoring

As mentioned, maintenance should not impact on the frog population. An enrichment planting of native species should be undertaken with minimum disturbance, if some of the initial species planting fails.

and now for the frogs...

Once you have located your pond and planted your plants, don't rush to translocate either frogs or tadpoles.

Moving frogs and tadpoles about can create problems by spreading diseases or bringing in species that are not suitable for your area.

If you are patient, the local frog species will find the pond, sometimes within days.



Acknowledgements

- Carl Fulton and Barb Nanshe compiling the information contained within these pages and sharing their vast expertise and knowledge.
- Suzanne Pritchard for the desk top publishing and layout
- The Trees In Newcastle team for the inspiration to undertake the project
- The Hunter Central Rivers Catchment Management Authority and Natural Heritage Trust for funding the project as part of the Environmental Education Grants 2007-2008

Image Credits

Front page

Green & Gold Bell frog:

http://www.sydneyolympicpark.com.au/Visiting/arts_and_culture/urban_art/artworks/wentworth_common_and_surrounds/wentworth_common_frogs_and_lizard

All pages-Clip Art Frog in the corners Down Under Collection Delux CD- New Horizons Educational Software. [Http://www.nh.com.au](http://www.nh.com.au)

Page 2 and excerpts on page 6,7,8,10

Pond design abridged : www.wildlifetrust.org.uk/.../section8/ponds.htm, (accessed 29/01/08)

Page 3

- Whipper Snipper- Down Under Collection Delux CD- New Horizons Educational Software. [Http://www.nh.com.au](http://www.nh.com.au)
- "Do Not Disturb" and calendar - Microsoft Clip Art
- Round Up Biactive- <http://www.ruralbuying.com.au/chemicalsroundupbiactive.htm> (accessed 29/01/08)

Page 4

Frog pond design- abridged from www.frogs.org.au/frogwatch/bitg.html (accessed 29/01/08)

Page 6

- Typha-http://www.rbgnsyd.nsw.gov.au/science/hot_science_topics/Ecology_of_Cumberland_Plain_Woodland/woodland_plants/typha_orientalis (accessed 29/01/08)
- *Bolboschoenus fluviatilis* photo by Jackie Miles and Max Campbell http://thebegavalley.org.au/uploads/tx_steverplantgallery/Bolboschoenus_sp_01_river%20clubrush.jpg (accessed 29/01/08)
- *Eleocharis sphacelata* photo by Jackie Miles and Max Campbell http://thebegavalley.org.au/uploads/tx_steverplantgallery/Eleocharis_sphacelata_01_tall%20spike%20rush.jpg (accessed 29/01/08)

Page 7

Baumea juncea <http://plantnet.rbgnsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=gn&name=Baumea> (accessed 29/01/08)

Page 9

- *Austrodanthonia* spp www.nativegrasses.com.au/revegetation.html (accessed 29/01/08) and http://www.rbgnsyd.nsw.gov.au/science/hot_science_topics/Ecology_of_Cumberland_Plain_Woodland/woodland_plants/austrodanthonia_fulva (accessed 29/01/08)
- *Poa labillardieri* photo by Jackie Miles and Max Campbell http://thebegavalley.org.au/uploads/tx_steverplantgallery/Poa_labillardieri_05_poa%20tussock.jpg (accessed 29/01/08)

All other images Peter Saunderson- Trees In Newcastle collection



252 Parry Street
Newcastle West, 2302
Phone: 4969 1500
Fax: 4927 6821
enquiries@treesinnewcastle.org.au