

Growing carnivorous plants in bog gardens

What worked (& what didn't work!) for me...



John Nielsen

What is a bog garden & why make one?

- Containerised bog habitat
- Optimised for wetland plants
 - Conditions more stable than pots
 - Less likely to dry out
 - Stable pH
 - Safety in numbers: humidity, prey
- Ideal for numerous carnivores
 - *Sarracenia* – most species
 - *Dionaea muscipula*
 - *Drosera* (African, pygmy, *binata* & temperate spp.)
- Some considerable drawbacks
 - Effort to set up
 - Hard to move once set up
 - Dividing plants a major challenge!



Note added post meeting...



- All photos are of my bog gardens & plants grown here in Canberra
- Reflection of what can be done locally!

Initial planning

- Do you really want a bog garden???
 - Hard to back out once set up!
- Species: choose wisely!
- Problem children for CBR include:
 - *Sarracenia alata* & *psittacina*: too cold
 - *Sarracenia oreophila*: short season
 - *Sarracenia leucophylla*: see next slide
 - *Darlingtonia*: water flow, shade
 - *Pinguicula primuliflora*: cover needed
- Spp. too invasive for bog gardens!
 - *Sarracenia rubra* sensu stricta
 - *Drosera binata*, *burmannii* & *tokaiensis*
- Consider themed bogs:
 - VFT & *Drosera* only
 - Tall/short *Sarracenia*



Nice – but can't recommended for bogs

Personal recommendations for CBR

- Many species work very well!
 - *Sarracenia flava*
 - *Sarracenia purpurea*
 - *Sarracenia rosea*
 - *Sarracenia leucophylla* - maybe
 - Long, hot summers (e.g. 2018-19)
truncate season; cool autumns best
 - *Sarracenia alabamensis* ssp.
 - *Sarracenia minor*
 - All *Sarracenia* hybrids
 - Temperate *Drosera*
 - Pygmy & African *Drosera*
 - African *Drosera*
 - VFTs (single species bog)



Nothing beats *Sarracenia flava*!

Choosing a site

- Maximum sun exposure
 - North facing, >6 hours sun
 - Clear of saplings/plantings
- Wind protection important!
 - Burnt growth, water loss
 - Broken/stunted pitchers
- Must be easily accessible
 - Weeding, watering
 - Admiring!
- Solid, level base a must
 - Gravel ideal – weeding
 - Concrete too hot!



Key hardware needed

- Fibreglass pre-formed ponds best
 - Durable, UV stable
 - Easily cut/drilled
 - Self supporting
 - Bigger is better – 1100 mm good
- Ag pipe: reservoir
 - Lightweight & cheap
 - Maximum water volume potential
 - pH neutral; gravel has alkaline dust
 - Fill directly & easily via fittings
 - Stocking stops peat leakage
- Pond liners: too fragile
 - Couch grass spears straight through!
- Kiddy ponds: too brittle, UV issues



Other Kit needed

- Drill
- Hole cutting kit
- Irrigation fixings:
 - Threaded risers
 - 90 degree angle or t fitting
 - Bulkhead through fitting
 - 90 mm downpipe
 - 90° Ag pipe-downpipe adapter
 - Mosquito excluder
- Peat (1 bale/pond)
- Sand (fizz tested w. vinegar)
- Labels (plastic venetian blinds work!)



Building the bog – initial setup

- Clear & Level site – no grass!
- Cable tie Ag pipe in tight coil
- Test position – can't move when full!
- 100mm pipe gives perfect depth



Building the bog – water fittings

- Filler: allows direct watering with hose
 - 90° angle adaptor
 - Downpipe (90 cm length)
 - Mosquito excluder
 - Fills reservoir directly – perfect!
- Overflow (must have!)
 - Threaded riser, bulkhead through fitting & 90° angle adaptor
 - Cut hole in Ag pipe, insert riser
 - Cut hole 1-2 mm wider than bulkhead fitting through pond side 100 mm below soil surface
 - Secure bulkhead, fit 90 degree angle
 - Screw in riser & cable tie in stocking (no soil leakage)





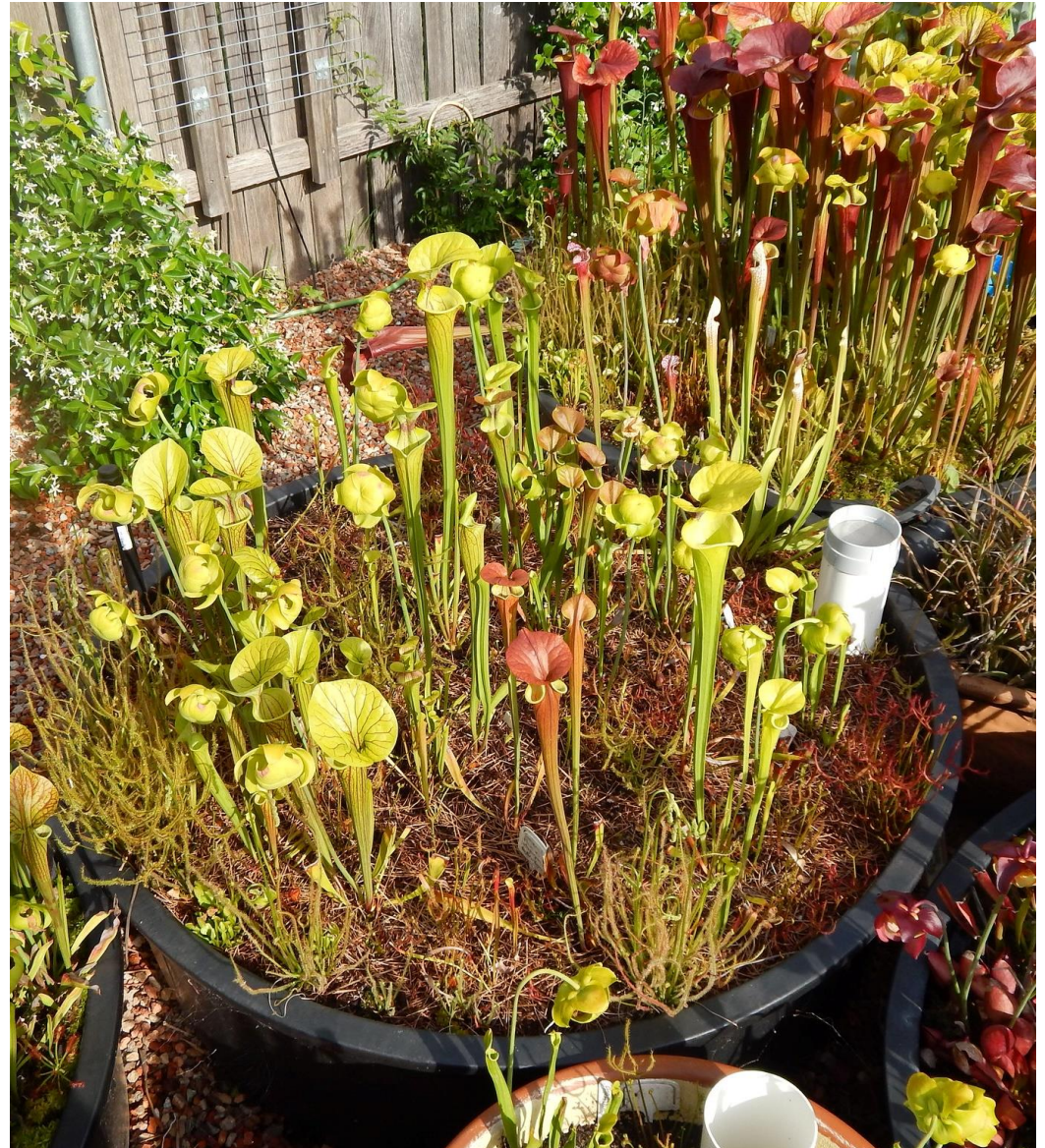
Fill pond with your favourite CP mix!

- Beware perlite – it floats & blows in wind!



Plant it out!

- Tall plants to South, shorter plants to North
- Always test fit before planting!
- Beware overplanting!
 - >200 mm gap: *Sarracenia*
 - 100 mm between VFTs
 - Underplant if unsure
 - Plants will grow!



Mulching carnivores (yes it's a thing!)

- Reduces water loss
- Stable root temperature
- Shredded pine needles
 - Weed seeds – compost it!
 - Cut with whipper snipper
- Live *Sphagnum* – pros & cons...
 - Looks great; natural
 - Grows like crazy!
 - Expensive if you don't have!
 - Hides pests, introduces weeds
 - Weeding is difficult
 - Heartbreaking to disturb when dividing...



Watering

- Same rules as pots: never dry out!
- Siphon excess in winter
- Daily watering to overflow in summer



General maintenance

- Weeding –nil after first year
 - Grasses – weed before they flower!
 - Weedy daisies, birches – seed blow ins
- Pests – rarely problematic
 - Bogs act as predator habitat
 - Avoid use of insecticides!
- *Sarracenia* pruning
 - Dead leaves: blanket effect
 - Prune to 50 mm when flowers first appear



Before...



After!

Winter – just keep drier & let freeze!



Labelling issues with *Sarracenia*

- Rhizome growth is tremendous!
- Must move labels as plants grow
- Risk losing clones during division if not careful!
- *Sarracenia rubra* grows through & over other plants!
- Fading ink: may need to re-label annually!
- Scribed/punched Aluminium labels?



You may think you know where everything is, but will you be able to remember mid winter when they have no leaves?

Division of *Sarracenia* in bogs

- Needed every 3-4 years
 - Rhizome rot – fatal if divisions not taken
 - Reduce plant density to manageable levels
 - Spares/swaps – always a good thing!
- You will need to lift all plants from bog garden
 - Major exercise – it will take days to do!
 - Easier if labels kept up to date
 - Temperate *Drosera* & *Sarracenia* seedlings – mark positions with skewers
 - **Heartbreaking – like destroying CP habitat!**
- Remove, bag & replant each garden in turn
 - Divide & bag *Sarracenia* as you go
 - Protects live *Sphagnum* & seedlings



Rhizomes tend to start rotting in 3-4 years – if you're not careful, the rot can reach the growth point...

Be warned - you will need to pull this apart every 3-4 years for thinning, new peat & division!



But its so worth the effort!!!



Imagine walking out to this after work?
Or being able to sit down with a drink, relax and enjoy beautiful plants any time you want?
(Trust me – its awesome!)





Minibogs

- Mini bog garden
- Perfect for smaller species including:
 - VFTs (look amazing!!!)
 - *Drosera* (*D. binata* looks great!)
 - Single species *Sarracenia* (water!)
- Easier setup
 - Plug drain hole: plastic & silicone
 - Seal with pond sealant paint
 - Drain hole 50 mm from soil surface
 - Inverted plastic pot reservoir
 - Downpipe filler + mosquito excluder
- Issue: needs close eye on watering
- Amazing VFT growth & vigour
- Heavy to move, doable with help!



Potted bogs

- Use a pond for your potted collection – force multiplier for growth & prey
- Same benefits as bog garden plus easier repotting & management
- Less likely to tie you down (key reason for me anyway)
- Mosquitoes: Nomoz degrades fast (pH), use MMF like mosquito drops instead



Thank you!



Post-repotting QA check, winter 2019 (paw of approval given!)