

# 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!
- Test position – can't move when full!
- Cable tie Ag pipe in tight coil
- 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 loosing 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!



6 October 2018



18 November 2018

# 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!)