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*
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
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!)