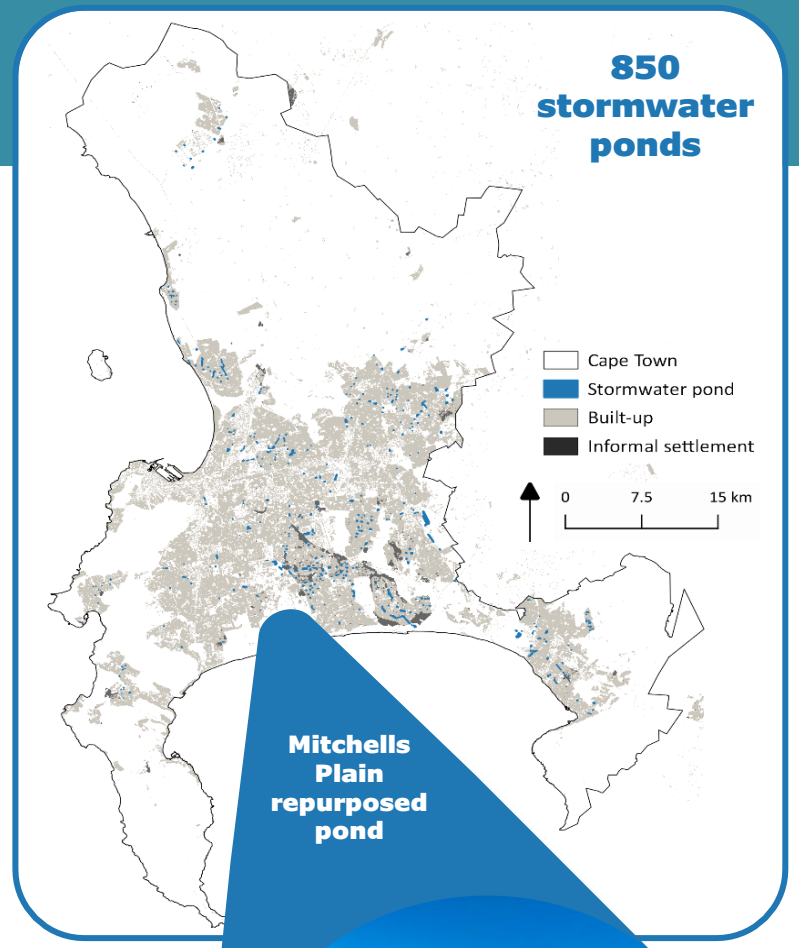
Pathways to water resilient South African cities

Community of Practice webinar:
Educational material and activities to support BGI transitions

A/Prof Kirsty Carden
Future Water research institute, University of Cape Town
10 July 2025

PaWS project - key elements

- Nature-based approaches that link storm runoff and wastewater to water supply
- Water sensitive (urban) design elements and landscape-based solutions
- Integration of built water infrastructure with green infrastructure in a decentralised manner
- Physical and institutional integration pathways (planning, policy)



"to identify opportunities for the physical and institutional integration of hybrid, decentralised Blue-Green Infrastructure into the urban water cycle to accelerate a transition towards water resilience"

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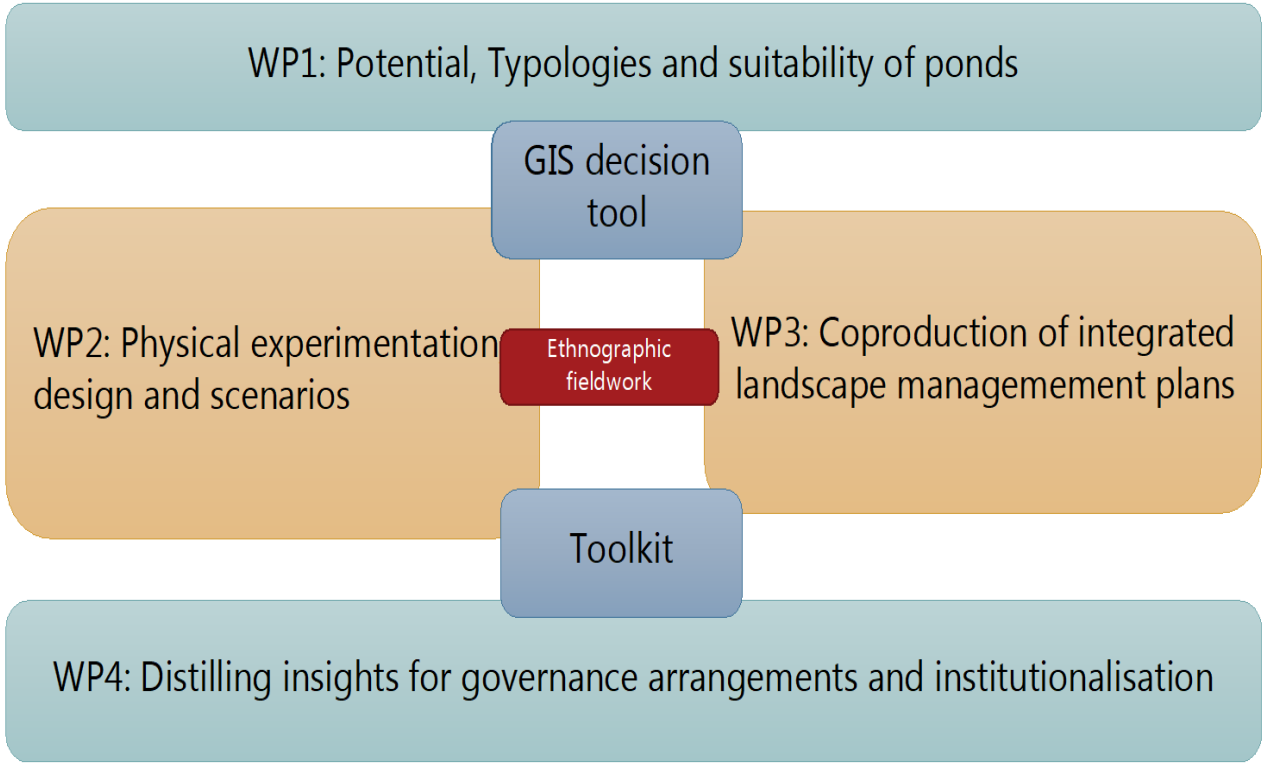
PaWS2 - Why the CoP?

"What are the opportunities for repurposing existing stormwater infrastructure as BGI with multiple functions to achieve water resilient South African cities?"



- Co-production around case sites
- Local, civil and city stakeholders
- Platform to foster network building and social learning
- Collaboratively leverage existing policy to achieve stronger BGI in SA cities
- Newsletters, articles, workshops

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Agenda

Presentations

1. Kirsty Carden, Future Water Institute, UCT – *PaWS project education activities*

2. Stacy-Ann Michaels, Zandvlei Nature Reserve, City of Cape Town – *Experiences with environmental education at the City of Cape Town*

3. Sally Sivewright - *Guardians of the Deep education programme*

Discussion

How to create and sustain educational and knowledge-raising material. Why bring children into the discussion

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Seminars / Newsletters for PaWS2 CoP – 2024/25

Toolkit theme	Proposed newsletter	Discussion points for seminar	Project presenter	Possible external stakeholder	Date of seminar	Event type
2 Implementing	*6. Monitoring water quality in MAR BGI projects*	Importance of water quality monitoring and impact of BGI on MAR; physico-chemical tracking. Includes maintenance / management of MAR BGI.	Rachelle Schneuwly, Kirsty Carden, John Okedi	Other DFC-supported project partners? Liz Day? BIOGRIP? CoCT?	9 April 2025	Webinar
3 Building knowledge	*7. Educational material to support BGI transitions (link to mural video)*	How to create and sustain educational and knowledge raising material – why bring children in? Mural co-design process.	Kekeletso Ramodibe, Amber Abrams	Sally Sivewright (Guardians of the deep) / Sunbird restoration / CoCT	June/July 2025	Webinar
4 Working together	*8. Multifunctional BGI requires multi-layered maintenance and co-production of management plans*	Co-design of management plans based on examples from different spaces; workshop processes with civics, city, etc.	Lise Herslund, Amber Abrams, Kirsty Carden	CoCT - Wayne Steyn, Gehardt Muller	May / June 2025	Workshop)in-person)
2 Implementing	*9. Institutionalising multifunctional BGI towards a water sensitive city*	Input from pond and compendium sites – including policy review from MAR BGI study	Kirsty Carden	External stakeholders	July / August 2025	Webinar
5 Sustaining	*10. A Community of Practice around water resilience in Cape Town and other developing cities*	Toolkit and Compendium launch, CoP close, catalogue of collaboration across different sectors and disciplines	Kirsty Carden	CONSUS people, Andrew McDonald, GIZ / CFF C40	September/ October 2025	In-person (half-day event)

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Seminars / Newsletters for PaWS2 CoP – 2024/25

Toolkit theme	Proposed newsletter	Discussion points for seminar	Project presenter	Possible external stakeholder	Date of seminar	Event type
2 Implementing	*6. Integrated water quality management for a resilient city*	Importance of water quality monitoring and impact of BGI on MAR; physico-chemical tracking. Includes maintenance / management of MAR BGI.	Rachelle Schneuwly, Kirsty Carden	Liz Day – freshwater consulting, CoCT – Scientific Services	9 April 2025	Webinar
3 Building knowledge	***7. Educational material to support BGI transitions***	**How to create and sustain educational and knowledge raising material – why bring children in? Mural co-design process.**	**Kirsty Carden, Kekeletso Ramodibe**	**Sally Sivewright (Guardians of the Deep), Stacey-Ann Michaels – CoCT Conservation**	**10 July 2025**	**Webinar**
4 Working together	*9. Institutionalising multifunctional BGI towards a water sensitive city*	Input from pond and compendium sites – including policy review from MAR BGI study	Kirsty Carden	External stakeholders	September 2025	Webinar
5 Sustaining	*9. A Community of Practice around water resilience in Cape Town and other developing cities*	Toolkit and Compendium launch, CoP close, catalogue of collaboration across different sectors and disciplines	Kirsty Carden, Lise Herslund	CONSUS team, CoCT SW and other depts, Drakenstein Mun, Stellenbosch Mun, GIZ / CFF C40	November 2025	In-person (half-day event)

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Pathways to water resilient South African cities (PaWS) - Project education activities

A/Prof Kirsty Carden
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Mono-functional stormwater ponds as a WSD opportunity

Liveable + Resilient + Sustainable + Productive

Pathways to water resilient South African cities (PaWS) project, 2019-2025

- Low-cost retrofitting of stormwater ponds to allow for infiltration and treatment of contaminated runoff
- Stakeholder engagement, co-creation of multifunctional infrastructure with local residents
- Facilitating enabling governance environment for increased water resilience
- Developing pathways for physical and institutional integration of Water Sensitive Design approaches into urban water cycle

Increasing water re-use	Enhancing cultural and heritage associations with water systems	Increasing access to blue-green space
Increasing equity	Reducing the Urban Heat Island effect	Managing water quality
Flood control	Community services connection with water systems	Enhancing biodiversity

Community collaboration in multifunctional POS

- **Awareness-raising** and safe-guarding adding support for amenity and biodiversity benefits
- Co-design and management – local stewardship
- Safety / security, preventing land invasions
- Citizen science / monitoring – **education programmes**
- Community anchors - job creation / funding

Building knowledge - stormwater mural

Journey of stormwater

- Source to Sea
- Biodiversity and Nature (plants and animals)
- Ecosystem services
- Cape Flats Aquifer / groundwater
- Connected stormwater systems and pollution impacts
- Eco-friendly paints
- Project QR code

Video of mural painting process - https://www.youtube.com/watch?v=eW_M6feVew0

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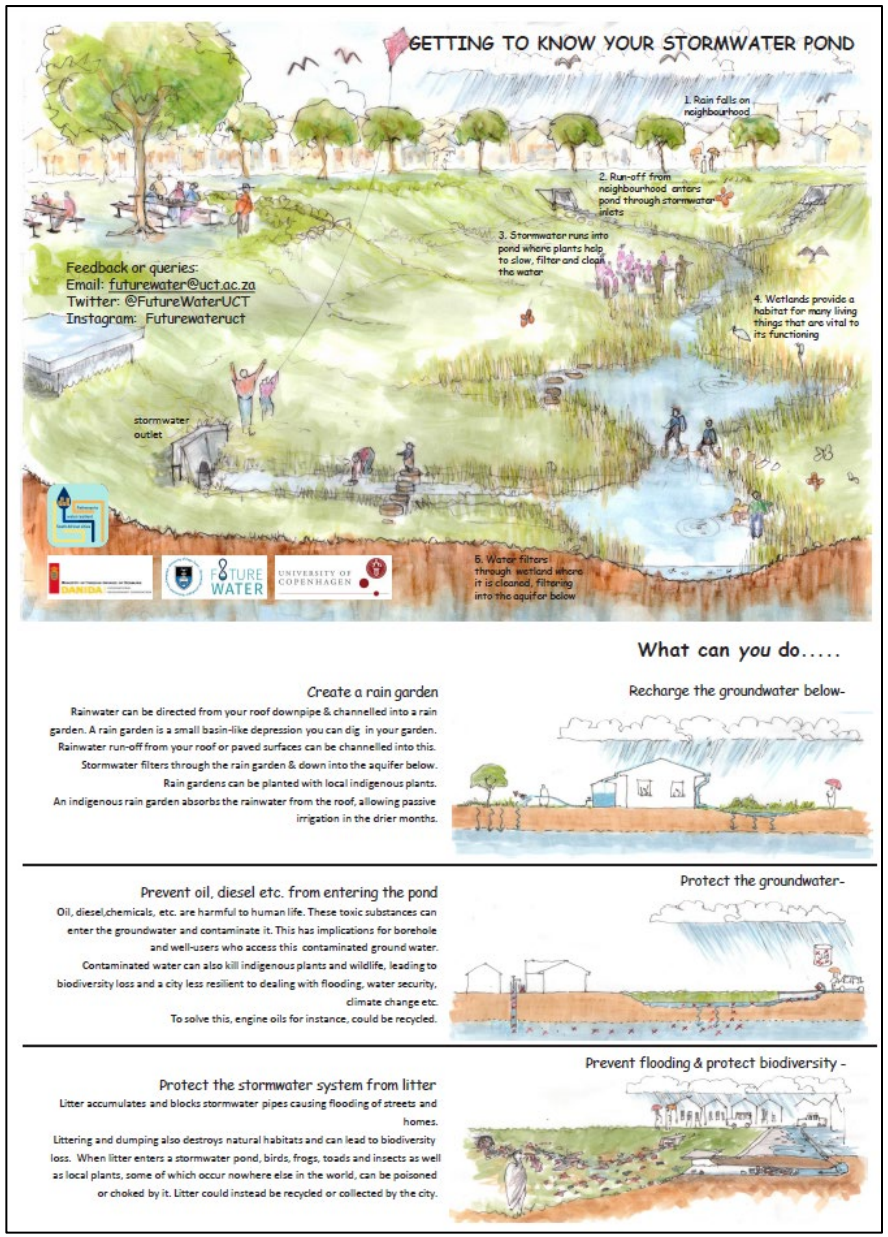
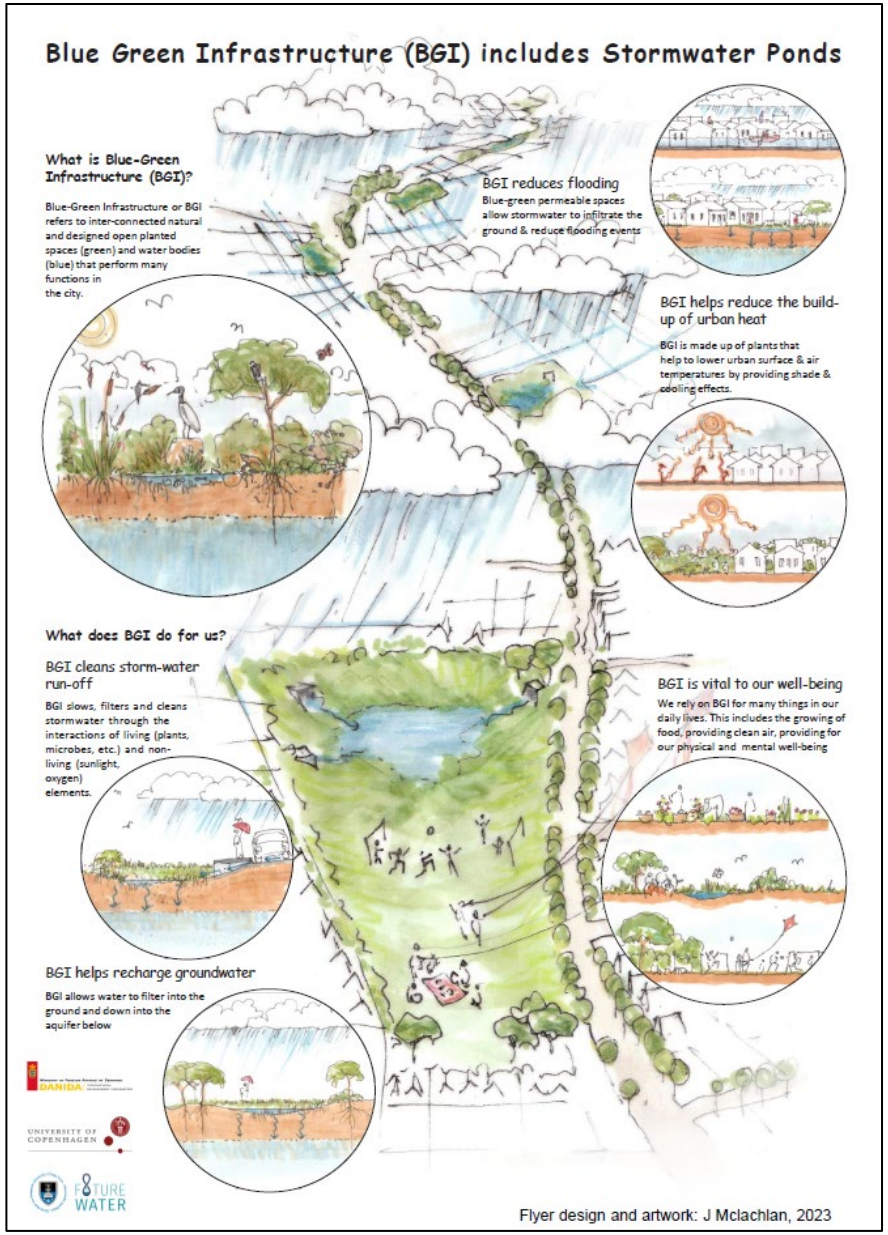
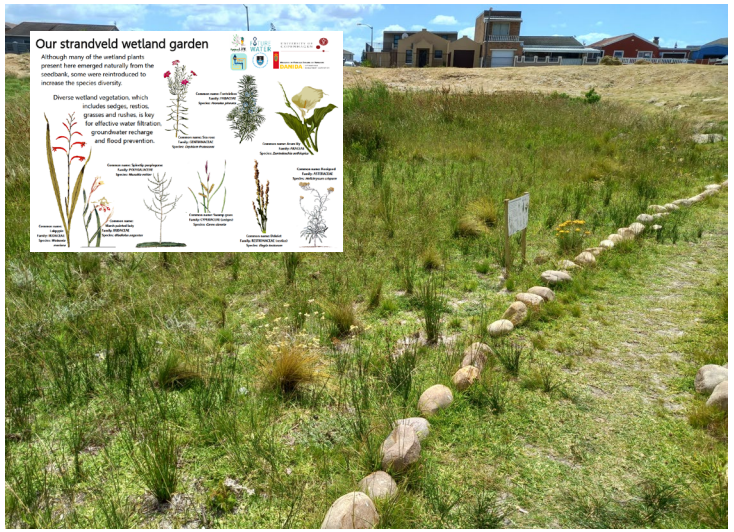
Stormwater pond pamphlet





Curating a biodiverse landscape – information on cues to care



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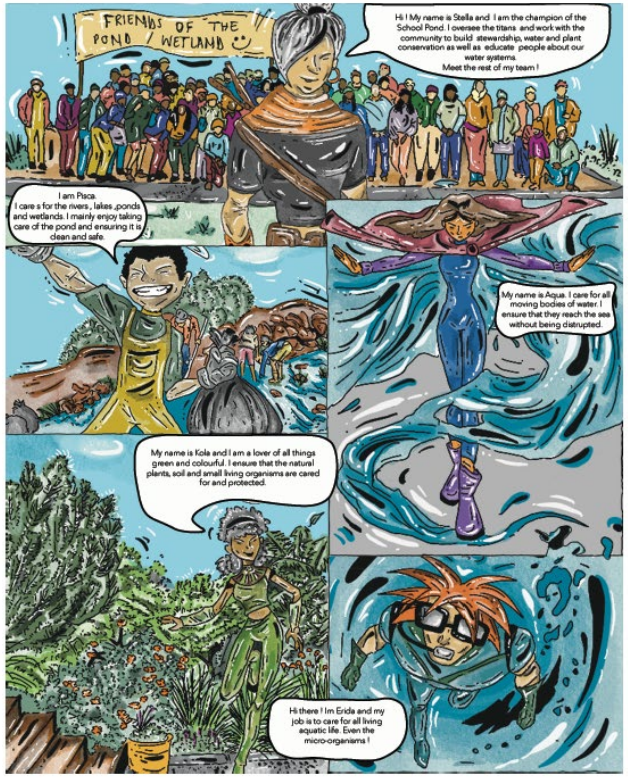
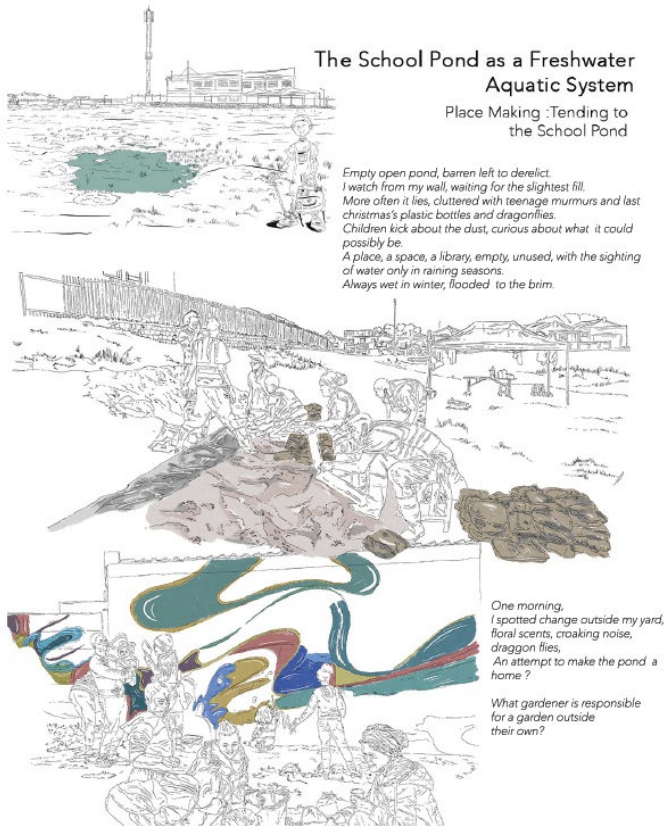
Nature education for primary and high schools

Guardians of the pond - programme





1. Welcome and explanation of stormwater spaces
2. Sensory activity on water and water relations
3. Treasure hunt – what treasures does the space hold?
4. Introducing stewardship
5. Pledge activity
6. Need for monitoring – MiniSASS
7. Guardians booklet, badges and certificates

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Guardians of the pond - activities

CoCT-affiliated education activities

- Nature Connect as funding mechanism / facilitator
- River Wardens
  - Skills development (monitoring / restoration)
  - Community liaison
  - Awareness-raising / education / training
- Friends of Mitchells Plain stormwater spaces
  - Resident-led stewardship
  - Community liaison

Livelihood opportunities and green skills development

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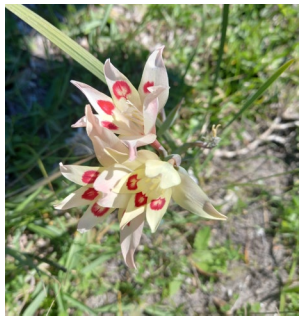
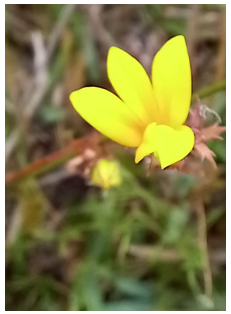
Academic teaching and research





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Desired waterscapes – let the pond speak

'Guardians of the Pond, between concrete and sky'

In the heart of Mitchells Plain, where concrete often dominates, the Fulham pond breathes life into a hardened neighbourhood. It was openly barren and neglected at first encounter, with its potential hidden beneath years of disregard. As a casualty of apartheid spatial planning, these ponds are shaped by conventional design methods to hold and channel the stormwater present during the wet seasons. However, when the drought period hit Cape Town between 2015 and 2018, the pond sat with a heavy heart as the wind swept through it, waiting for its silent whispers to be heard:

"Oh, how I wish for my potential to be realised and my agency to be mine to own. My inability to speak the common tongue and lack of a personified form, has compromised my relevance many who protect the homes of those who fear my extent."

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Questions?