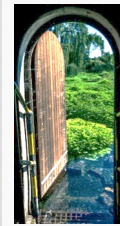




URBAN HYDROLOGY: WATER IN THE CITY OF TSHWANE
Plant Sciences Auditorium, University of Pretoria
23 – 24 January 2014

IMPACTS ON URBAN WATER QUALITY

JUDE COBBING
SLR CONSULTING AND NELSON MANDELA
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BACKGROUND / BASICS

- **POLLUTION**
 - “**Pollution is the introduction of contaminants into the natural environment that cause adverse change**” (*Wikipedia*)
- **SOURCES**
 - Point sources (e.g. leaking fuel tank)
 - Line sources (e.g. road or railway)
 - Diffuse sources (e.g. agricultural land)



WATER POLLUTANTS

- **HUGE RANGE**
- Dissolved substances
- “naturally occurring” substances in high quantities
- Suspended / colloidal substances
- Radioactive materials
- Large solids (from plastic bags to shipwrecks!)
- Microbes – viruses, bacteria, protozoa, helminths,
- Etc, etc

Can interact in a variety of ways, and break down to form huge range of “daughter products” – often less harmful than the parents, but not always.

Visual, health, smell, taste objections, plus effect on other systems and the knock-on effects of these. Unknown / combined effects?

2014/02/03

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SOME ISSUES TO CONSIDER

- Polluter pays! (Rio Declaration)
- But... – who will enforce this? Who decides on levels?
- What about multiple polluters, inadvertent polluters, historical polluters, etc?
- Pollution pathways? Spikes? Monitoring?
- How do we apportion liability?
- Classic externalised cost – and difficult to define
- Tragedy of the Commons vs informal institutions
- Water laws (e.g. EU Water Framework Directive, Water Act) – define an “unimpacted state” or similar – which we may never achieve in reality?

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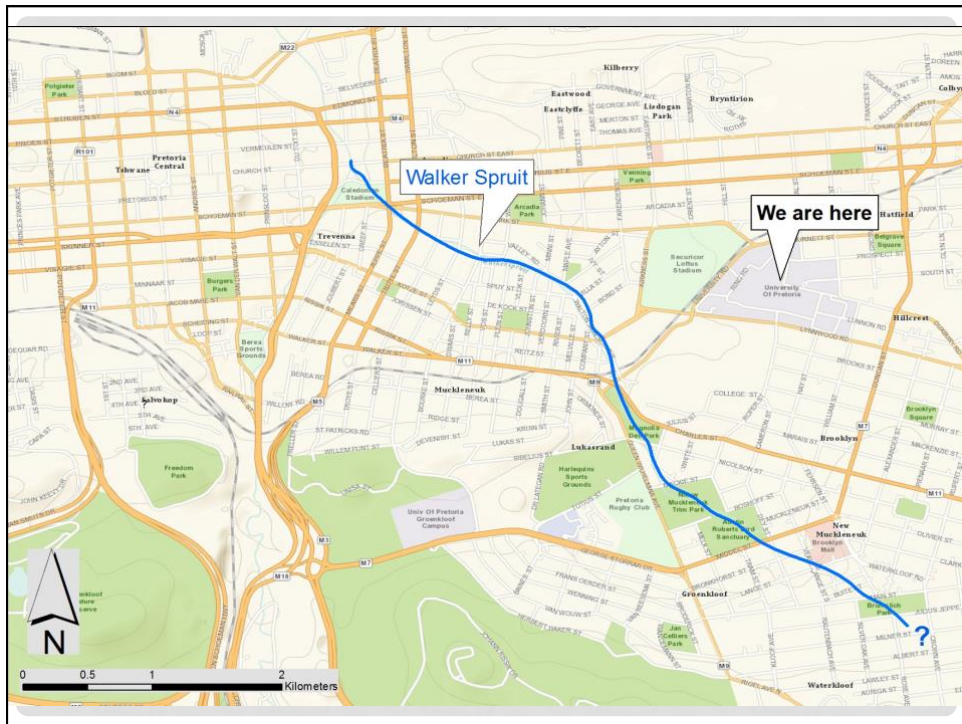
A WALK UP THE WALKER SPRUIT...

- Urban river
- Tributary of the Mighty Apies
- Mainly aesthetic use?
- Environmental resource
- Drainage and flood control
- Nuisance and a danger?!!
- Runs past the end of my street in Sunnyside!

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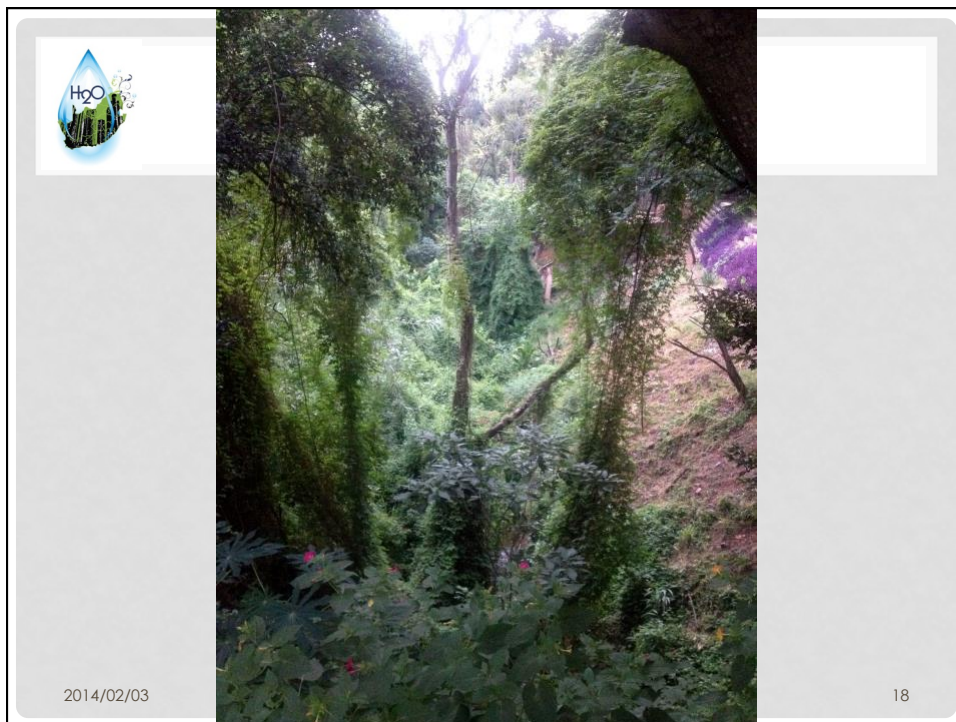
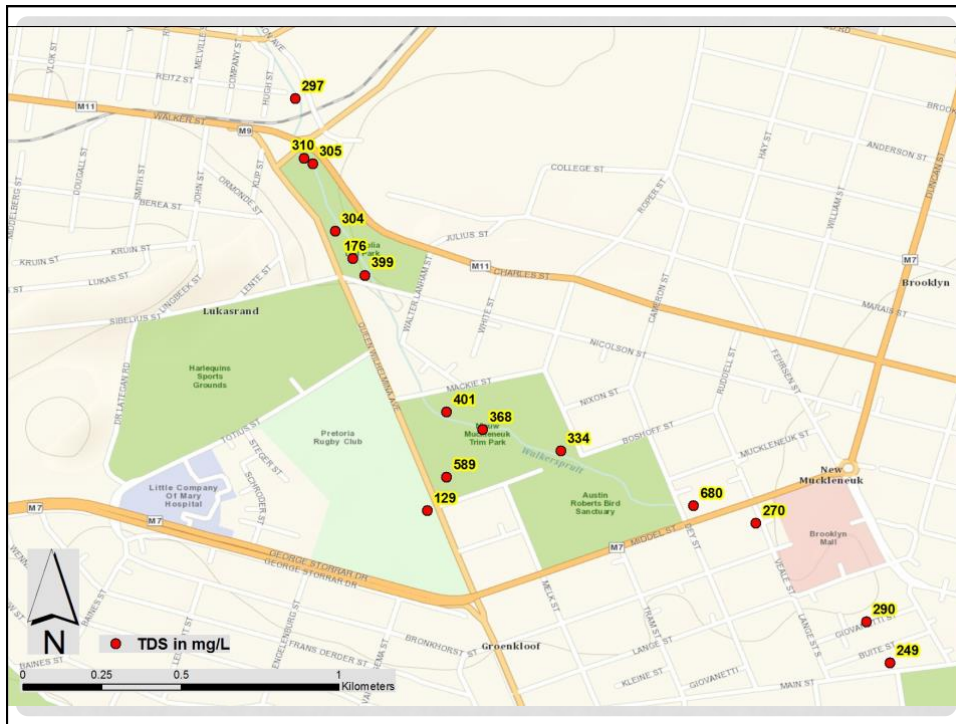


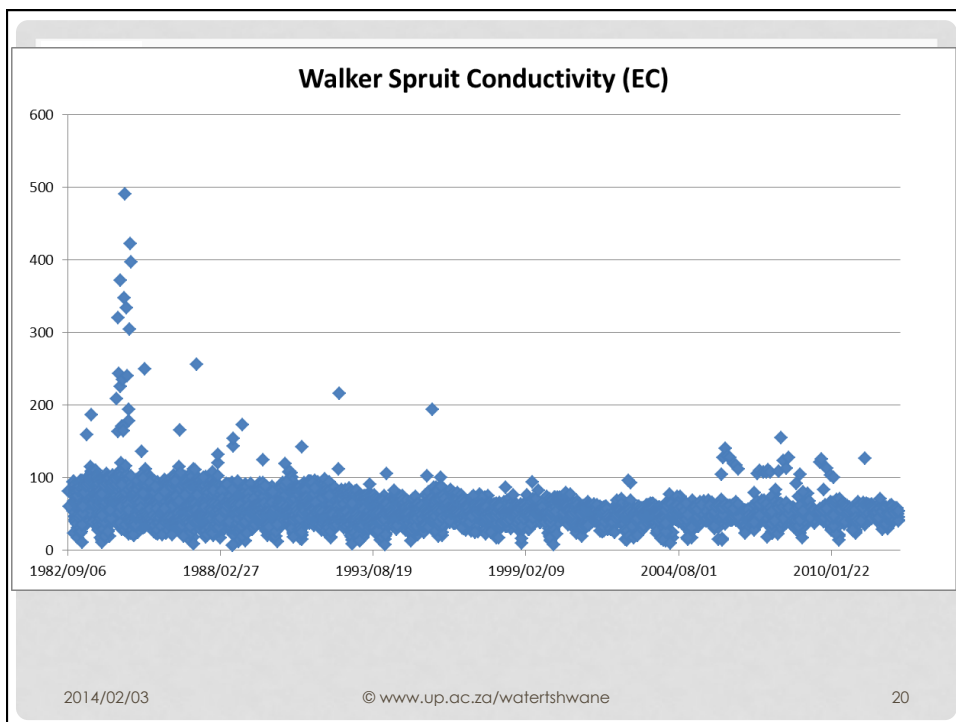
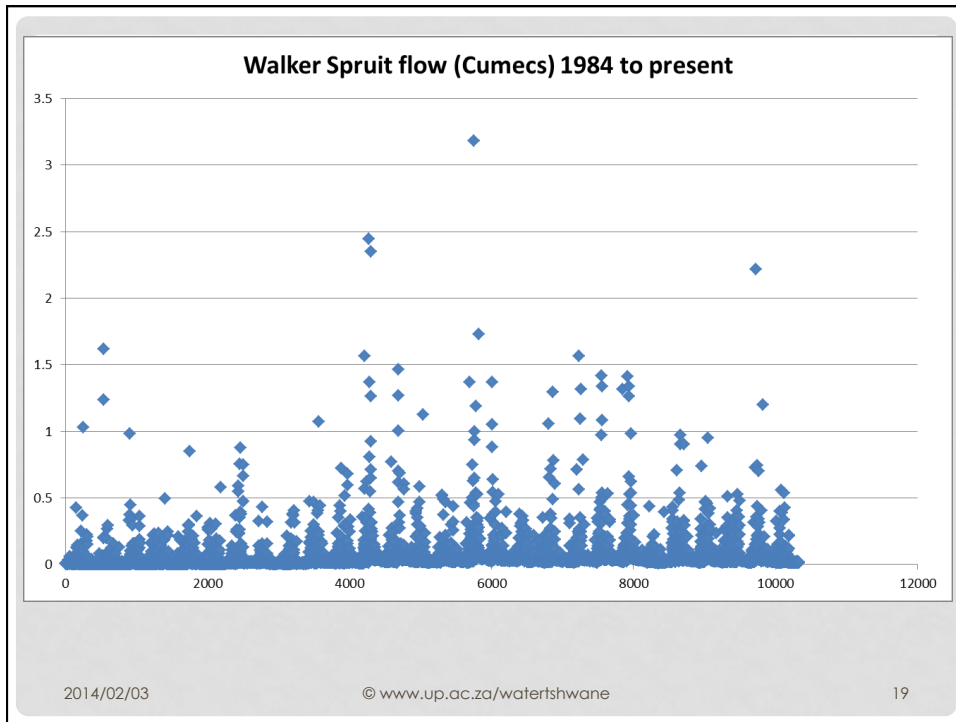


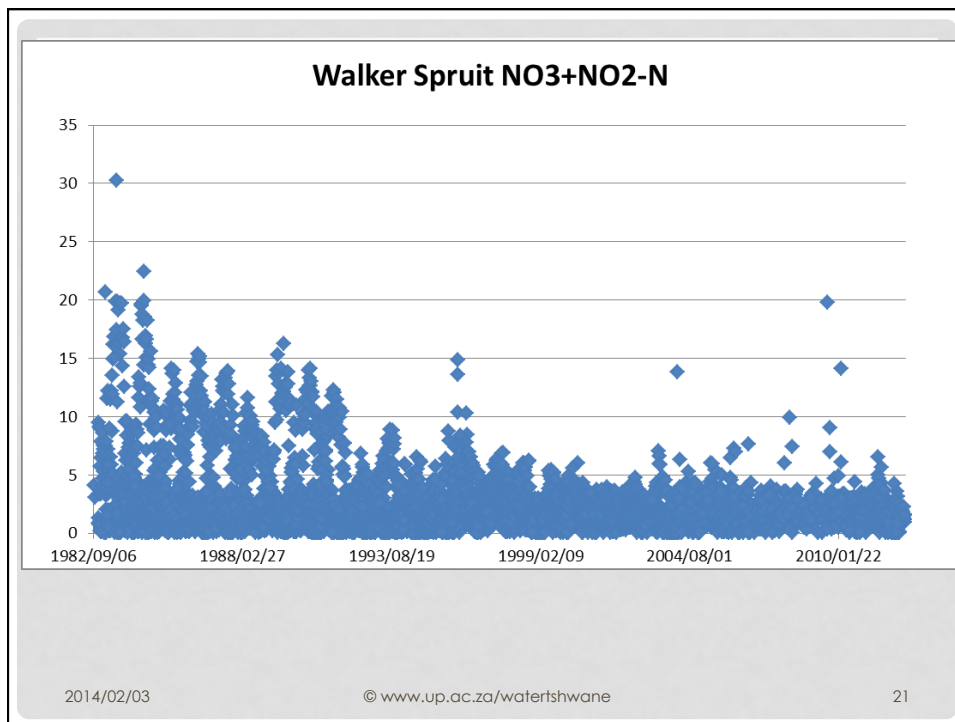
















WALKER SPRUIT CONCLUSIONS

- Evidence of pollution – but could be worse...
- Better quality is desirable?
- Variety of pollution sources? Suspect one or two main ones...
- RRAs work together with experts / Tuks and DWA / Metro?
- May well be “quick wins”
- Tremendous asset – Love your River!
- www.sunnysideeast.co.za

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