

THE STATUS OF RESEARCH ON WETLAND ECOLOGY, MANAGEMENT AND CONSERVATION IN SOUTH AFRICA

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OVERVIEW OF PRESENTATION:

Wetlands and research in South Africa

- Brief history of wetland research in SA
- Some of the major outputs
- Challenges
- Advantages
- Gaps - knowledge and tools



HISTORY OF WETLAND RESEARCH IN SA:

Two WRC reports nearing completion

- Chronology of freshwater science in SA (*in prep*)
Ashton, Roux et al.
 - wetland section (Jenny Day)
- An impact assessment of the research funded by WRC on wetland management in SA (*in pub 2010*)
Phillips & Madlakazi

HISTORY OF WETLAND RESEARCH IN SA:

- 1930 – 1980 A handful of studies
- **1971 Ramsar declaration**
- **1975 South Africa became 5th signatory**
- 1983 Wetlands session at SA Limnological conference
- 1986? - 1991 CSIR Inland Water Ecosystems
Wetlands Programme
- 1991 Silberbauer and King
- 1980s G. Begg, Natal wetlands



HISTORY OF WETLAND RESEARCH IN SA:

- Wetlands neglected (focus on rivers, reservoirs)

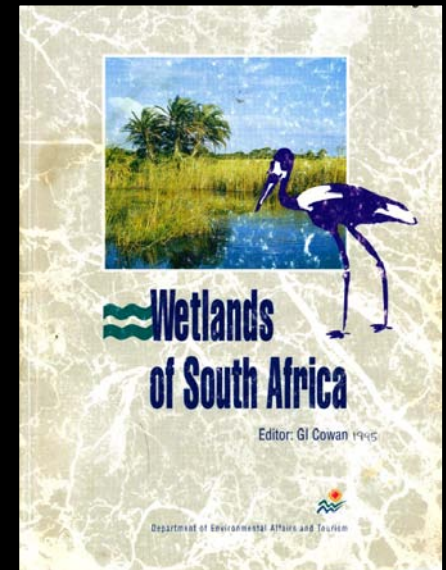
- 1990 – 2000 Environmental Affairs

Designation of more RAMSAR sites

Wetlands News letter

1995 “Wetlands of South Africa”

(Cowan ed.)



HISTORY OF WETLAND RESEARCH IN SA:

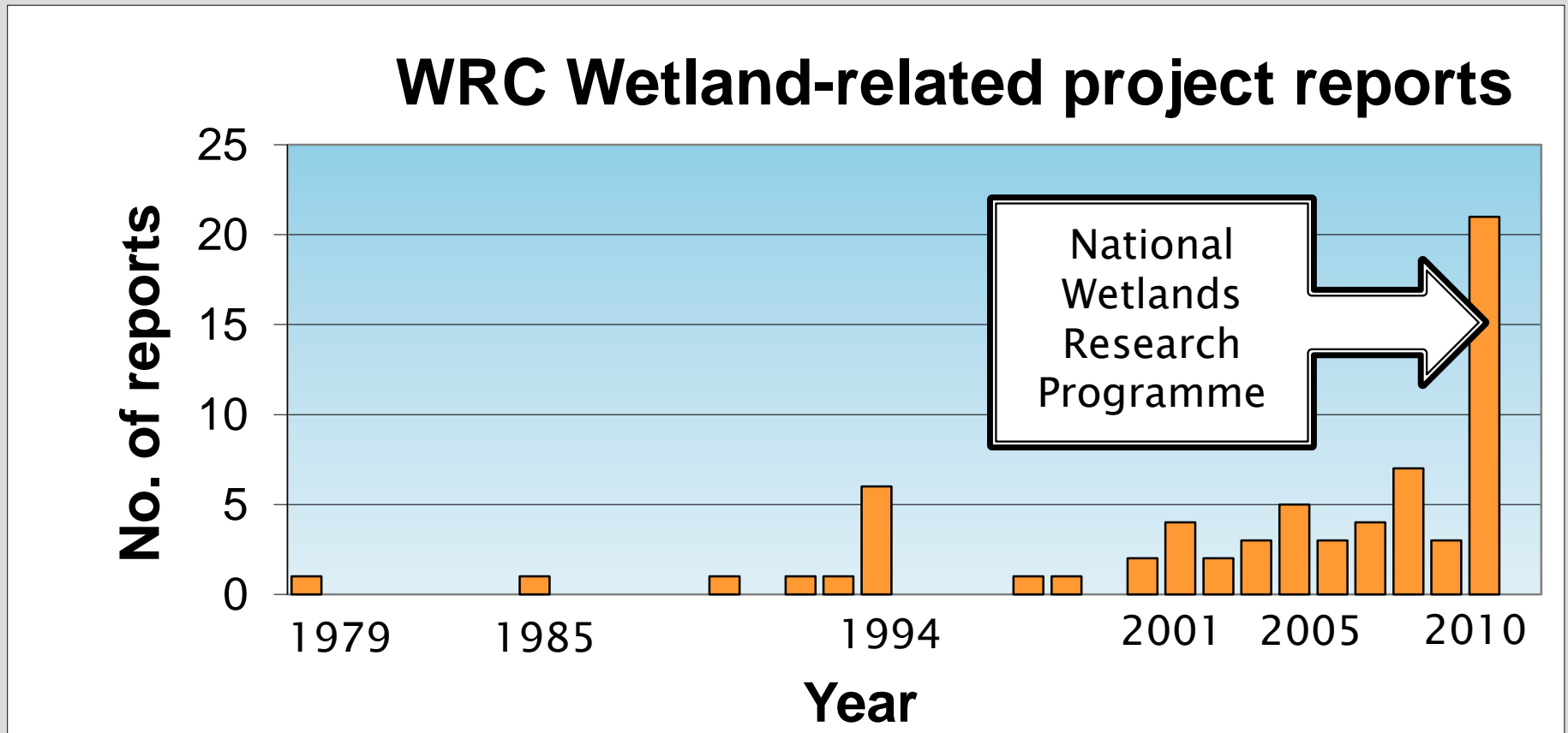
- 1990s – Wetland wise use (Breen, Kotze et al.)
- **1998 - National Water Act** – including wetlands

BUT:



2003 - National Biodiversity Strategy and Action Plan - too little information available!

ADDRESSING THE NEGLECT:



No. wetland researchers ↑ 85% since 2000

(Data from Phillips & Madlokazi – 2010)

ADDRESSING THE NEGLECT:

2003 Collaborative interagency research programme

WRC, DEAT, DWAF, NDA, DME, Mondi Wetlands Project



National Wetlands Research Programme

THREE PHASES:

Phase I: Wetland Rehabilitation (2004 - 2008)

Phase II: Wetland Health and Importance (2006 - 2009)

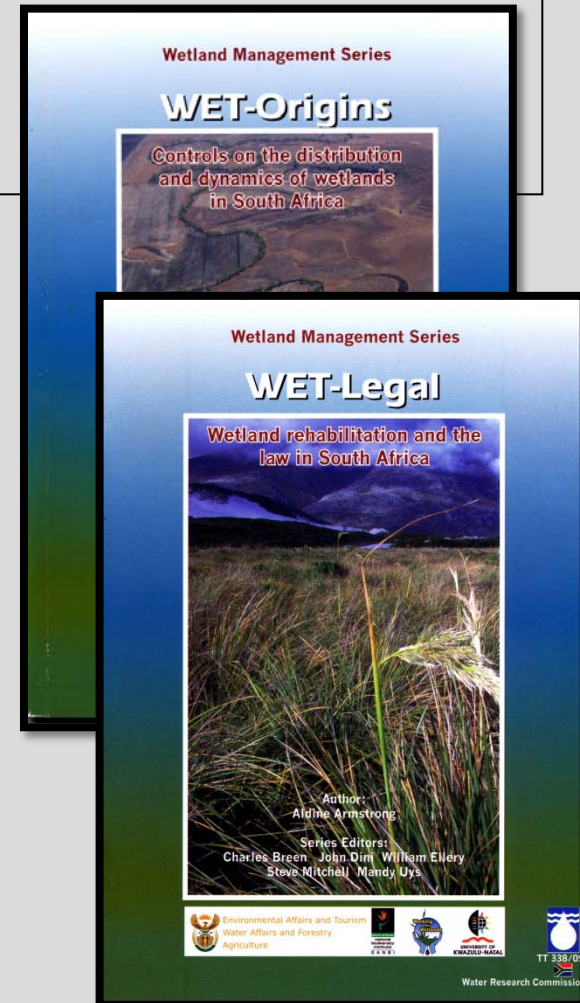
Phase III: Wise use

NATIONAL WETLANDS RESEARCH PROGRAMME:

Phase I: Wetland Rehabilitation: Ellery, Kotze et al (2010)

“WET-MANAGEMENT series” (10 reports)

- Assessment of wetland condition
(WET-Health)
- Legal framework for rehabilitation
(WET-Legal)



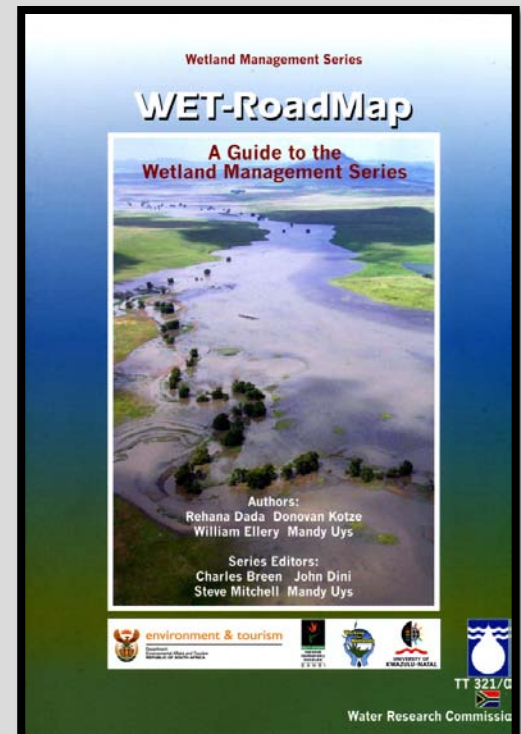
NATIONAL WETLANDS RESEARCH PROGRAMME CONT:

- Prioritisation for rehab (**WET-Prioritise**)
- “Goods and services” (**WET-Ecoservices**)
- Which rehab methods to use (**WET-RehabMethods**)

A guide to the Wetland Management Series

“WET-RoadMap”

Available: WRC “Knowledge Hub”
www.wrc.org.za



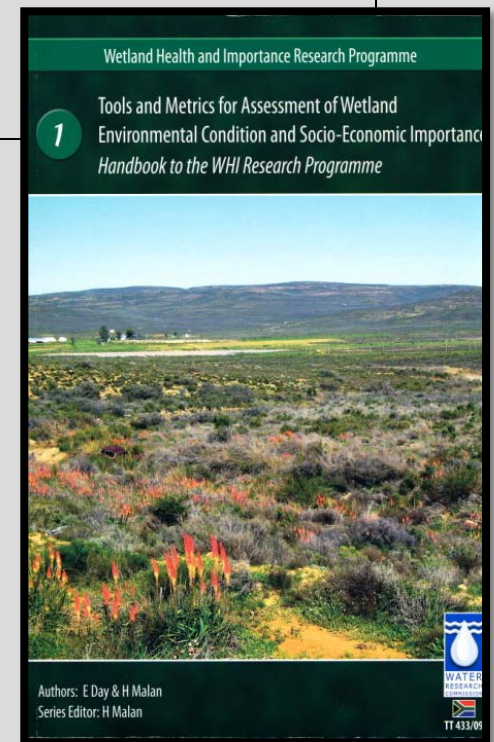
NATIONAL WETLANDS RESEARCH PROGRAMME CONT:

Phase II: Wetland Health and Importance (WHI): (Day, Day, Malan et al)

WRC K5/1584 (11 reports)

“Handbook to the WHI research programme”

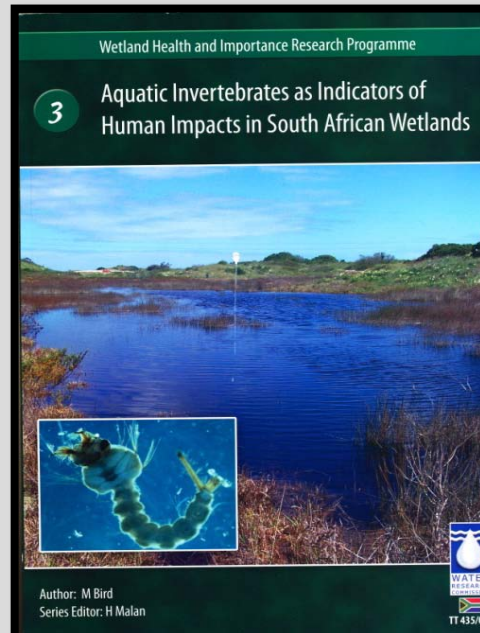
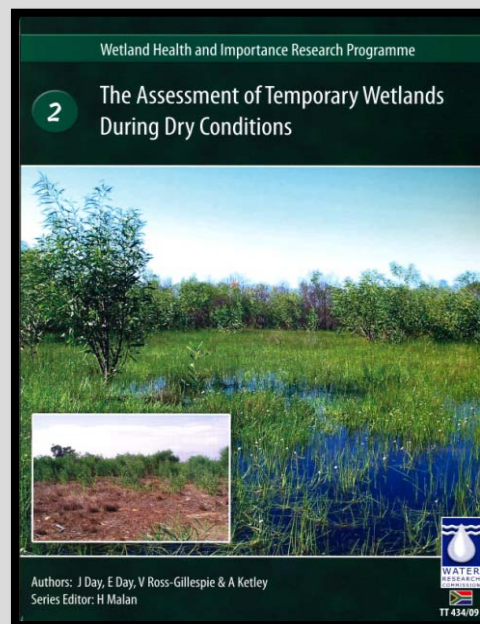
Day and Malan (2010)



NATIONAL WETLANDS RESEARCH PROGRAMME CONT:

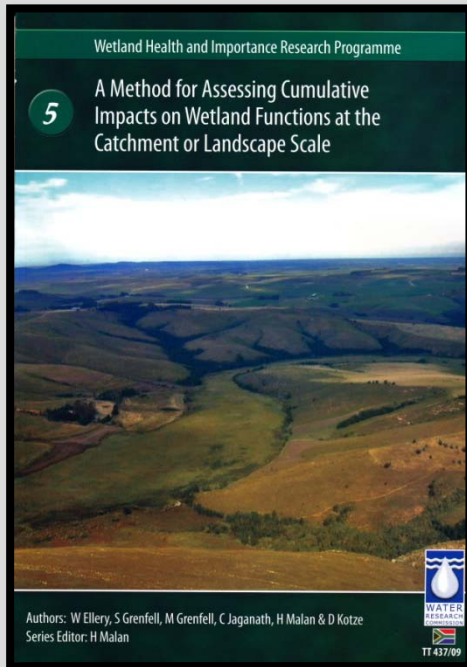
Phase II: WHI

- Assessment of environmental condition using biota
 - Temporary wetlands – dry (Day *et al*)
 - Invertebrates (Bird)
 - Plants (Corry) *in prep*



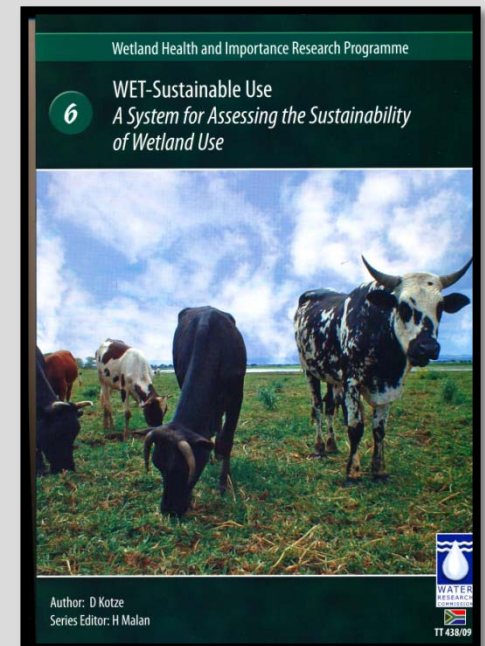
NATIONAL WETLANDS RESEARCH PROGRAMME:

Phase II: WHI



- Cumulative impacts at landscape scale (Ellery *et al*)

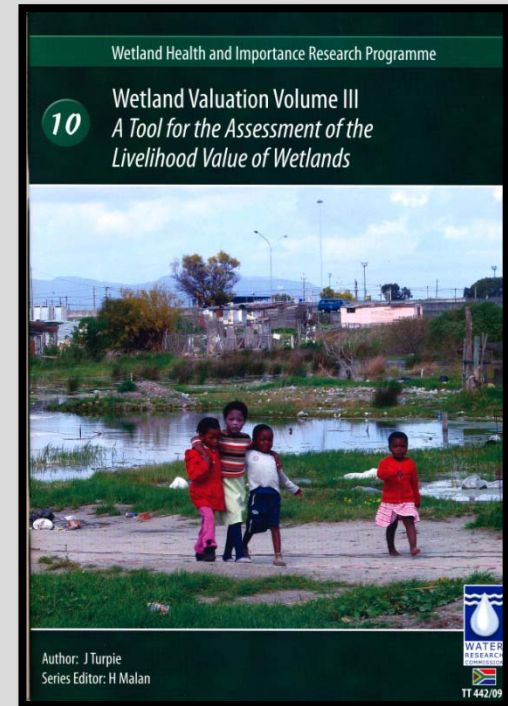
- Assessment of sustainability of use (Kotze)



•Socio-economic studies/ wetland valuation

(Turpie *et al*)

- Livelihood value of wetlands
- Protocol for valuation of ecoservice
- Valuation case studies



•Wetlands and human health (disease vectors)

(Malan, Appleton, Day and Dini 2009)

Available: WRC “Knowledge Hub” www.wrc.org.za

ONGOING WETLAND ACTIVITIES:

- Rennies/Mondi Wetlands Programme (David Lindley) – Wise Use
- SANBI Freshwater Programme (John Dini)
 - Wetland classification (Ewart-Smith *et al* 2006)
(Ollis *et al* 2009)
 - National Wetlands Inventory and mapping
 - Priority freshwater
conservation areas (NFEPA)



ONGOING WETLAND ACTIVITIES:

- “Working for Wetlands”
 - Public Works Programme (DEA/DWA)
- Annual: **Wetlands Indaba** (SAWAG)
- Provincial wetland fora

Wetlands portal: www.wetlands.za.net

- Implementation of SA National Water Act




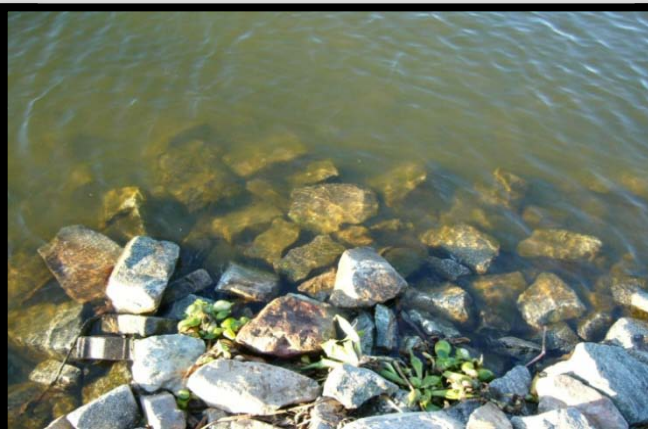
ONGOING WETLAND ACTIVITIES:

Wetlands and water quality

Malan, Day, Koekemoer and Pillay: WRC k5/1921

What do measurements of WQ mean?
What is the ecological significance?

 Ranges of WQ parameters for different wetland types, regions, environ condition



CHALLENGES TO WETLAND RESEARCH:

- Diverse systems (climate, geology, biota, land tenure, use)
- Ephemeral wetlands
- Country is large, lack of base-line information
- Lack of sustained funding (long-term projects)



CHALLENGES TO WETLAND RESEARCH:

- Lack of funding for blue-sky projects
- Difficulty in finding suitable/interested students
- Implementation/up-take of research problematic
- Govt departments over-worked, under-resourced, and (some) lack political will



ADVANTAGES TO WETLAND RESEARCH:

- WRC

- funding, coordinating, disseminating knowledge
- rational strategy for assessing research needs
- quality control of research

- Enthusiastic wetlands community

- managers, scientists, students, consultants, NGOs



Beautiful, interesting wetlands!




Verlorenvlei, Western Cape. Ramsar site

GAPS IN KNOWLEDGE & TOOLS:

- Collection of fundamental data (SAEON)
 - National wetlands inventory - attributes database
 - Ecological processes in natural systems (links wetland/groundwater)
 - Rapid, user-friendly, cheap bioassessment tools
 - Quantification of wetland benefits (measurements, economic costing)
 - Optimisation of constructed (treatment) wetlands
- 

GAPS IN KNOWLEDGE & TOOLS:

- Predicting (quantitatively) impacts & ecosystem response
 - Environmental water allocations
 - water quality
 - Impacts of climate change (environmental, social, economic)
 - BMPs to control diffuse pollutants (+ funding mechanisms)
 - Disease vectors (malaria, bilharzia etc)
- 

CONCLUSION:

- **Wetland research** – historically neglected in SA
- **Being addressed**
- **Challenges and advantages**

BUT:



Urgent conflicting demands

- burgeoning population (urbanisation)
- mining, pollution, agriculture, over-abstraction
- subsistence use

CONCLUSION:

Research tools that are developed.....

- Impacts to wetlands and biodiversity
- maximise benefits to society
- scientifically robust
- legally defensible

BUT ALSO:

- usable in context of limited capacity,
and resources



Getting the balance right:



**Greatest challenge to
wetland research in SA!**



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