Capacity in government to manage inland waters from an ecological perspective

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Three govt agencies with focus on inland waters from an ecological perspective

- DEA - provincial conservation / environment agencies, SANBI
- DWS – Resource Quality Information Services directorate
- DAFF – fisheries (harvesting and management)
DEA – why the need for aquatic capacity for inland waters?

- Manage aquatic biodiversity for conservation purposes – threatened and protected species, focus on FEPA’s
  
  How: need scientists and technical support that are trained in appropriate fields (fish, aquatic inverts, riparian vegetation, wetlands etc), regular surveys of species and associated threats, scientists use databases and scientific literature to advise senior management via reports and in meetings, scientists assist with development of Education and Awareness tools, scientist collaborate with scientists at partner agencies (including SAIAB, Universities)

- Manage aquatic ecosystems processes for conservation processes
  
  How: need scientists and technical support that understand how ecosystems (rivers, lakes, wetlands) function and what threatens them (e.g. dams, excessive abstraction, catchment degradation, alien species). Need regular surveys using appropriate monitoring tools; scientists use survey, database and literature info to advise senior management

- Scientists have a responsibility to advise on legislative issues – provincial Ordinances (e.g. fish stocking permits, aquaculture), NEMBA, Listed Activities etc
DWS – why the need for aquatic capacity for inland waters?

- Water Act – sections specifically dealing with Resource Protection and Health
- Focus of DWS on aquatic system slightly different to DEA – latter has more a conservation focus unlike DWS which looks at availability and quality of water
  - How: need scientists and technical support that are trained in appropriate fields, regular surveys of river health and water quality; scientists use databases and scientific literature to advise senior management via reports and in meetings, scientists assist with development of Education and Awareness tools, scientist collaborate with scientists at partner agencies (including DEA, SAIAB, Universities)
- Scientists have a responsibility to advise on legislative issues – water use licenses, general authorisations, Listed Activities etc, Resource Management Plans for dams
DAFF – why the need for aquatic capacity for inland waters?

• Lack Acts and Regulations for freshwater fisheries, but substantial capacity for managing marine fisheries using Marine Living Resources Act

• Have recognised the need and value to include inland fisheries as part of their mandate. Fisheries includes recreational, subsistence and commercial fisheries, of which recreational is a very substantial fishery. Also acknowledge that they have no capacity at present in this field as staff fully committed to managing marine fisheries, including mariculture

• Are preparing an inland fisheries policy

➤ How: in future if DAFF are going to effectively manage inland fisheries they will need scientists and technical support that are trained in this field, the staff will need to undertake regular surveys of high value fisheries, scientists use databases and scientific literature to advise senior management via reports and in meetings, scientists assist with development of Education and Awareness tools for fishery users, scientist collaborate with scientists at partner agencies (including DEA, DWS, SAIAB, Universities)
A recommended minimum capacity per provincial environmental agency

- Aquatic manager
- Aquatic scientist – limnological training, aquatic inverts, responsible for rivers
- Fish scientist – training in ichthyology
- Wetland scientist
- Two technicians to provide field support

For coastal provinces – estuarine scientist and technical support

- i.e. 8 staff for coastal provinces and 6 staff for inland provinces
Current capacity of coastal provinces in environmental agency

**W Cape**
- Fish scientist (Impson) MSc 25 yrs
- River / Wetland scientist (Gouws) MSc 10 yrs
- Aquatic technician (Jordaan) PhD 8 yrs
- De Villiers (programme manager estuarine) MSc 25 yrs

**KZN**
- Aquatic scientist (Kubheka) MSc 1 year
- Two estuarine scientists (Kyle & Bachoo) PhD, MSc; 25, 10 yrs
- Estuarine and wetland technician (Caroline Fox) >15 yrs

**N Cape**
- Aquatic scientist (Ramollo) MSc 7 yr

**E Cape**
- No inland waters staff
Current capacity of inland provinces in environmental agency

**Mpumalanga**
- Aquatic scientist (Roux) PhD 20yr
- Wetland scientist (Marias) MTech 20y
- Aquatic scientist (Hoffman) MSc 25yr
- Lakes and pans scientist (Niemand) BSc Hons 20yr
- Technician (Simelani) Btech 8yr
- Field assistant (Mapopa) Grade 12 20y

**Free State**
- Aquatic scientist (Barkhuizen) MSc >20y
- Wetland scientist (Collins) MSc >20 y

**Gauteng**
- Aquatic scientist (Gohall) MSc 3 yrs
- Wetland technician (Nkadimeng) BSc Hons 4 yrs

**Limpopo**
- Aquatic scientist (Masindi) MSc 10 yr
- Aquatic technician (Rodgers) Higher Diploma NC 18yr

**North-West**
- Aquatic scientist (Roux) MSc 17 yr
- Fish scientist (Nemutandani) MSc 1yr
- 2 field assistants with 5-10 yr experience
Which province is likely to monitor and report on its NFEPA’s, undertake regulatory work, work well with partner agencies and consultants, mentor junior staff?

Mpumalanga

- Aquatic scientist (Roux) PhD 20yr
- Wetland scientist (Marais) MTech 20yr
- Aquatic scientist (Hoffman) MSc 25yr
- Lakes and pans scientist (Niemand) BSc Hons 20yr
- Technician (Simelani) Btech 8yr
- Field assistant (Mapopa) Grade 12 20yr

E Cape

- ???
DWS – current capacity in RQIS (thanks Gerhard Cilliers)

- 124 posts, 80 appointed with 3 sub-directorates – resource quality monitoring, analytical services (water quality), and resource quality information

- 24 posts in RQM – focus on monitoring of rivers as part of the REMP (various indices used to monitor fish, aquatic inverts, riparian veg, habitat quality etc)

- Annual REMP (Ecostatus) training held to increase proficiency

- Provincial focus and capacity:
  - E Cape – 5 staff
  - W Cape – 7 staff
  - KZN – 4 staff
  - Limpopo – 1 staff
  - Gauteng – 2 staff
  - Free State – 2 staff
  - Mpumalanga – 2 staff
  - NWest – 2 staff
DWS – issues regarding capacity (thanks Gerhard Cilliers)

- REMP staff do a variety of functions apart from monitoring work – e.g. water use licences, general authorisations, commenting on Listed Activity applications.

- REMP lacks a national champion to ensure effective co-ordination since the departure of Ramogale Sekwele.

- REMP staff usually inexperienced and some provinces lack drive. Often high staff turnover. Mentorship at provincial level is lacking hampering development of inexperienced staff.

- REMP staff in some provinces working under Engineering section – budget problems.

- Only 3 provinces where REMP is working well – N West Province, Mpumalanga and W Cape – these provinces are working closely with consultant teams, provincial DEA, Catchment Management Agencies and have driven provincial champions.
DWS – issues regarding capacity (thanks Gerhard Cilliers)

- There has been a loss of senior scientific staff at the national office (RQIS) in the last 15 years – this has created substantial problems in terms of co-ordination. Of the 5 current positions, 3 are vacant. Only Christa and Neels there and latter about to retire.

- DWS has established a national estuaries programme co-ordinated by Gerhard. One staff member looks after KZN and Wild coast estuaries, another looks after remaining E Coast estuaries to the Breede, and Gerhard looks after estuaries from the Breede to Orange.

- DWS also supports regional programmes with equipment e.g. CapeNature’s estuary programme which utilises volunteer groups to assist with estuary management.

- DWS also has a wetland focus, but there is only one unfilled post at present. This post is to assist with national co-ordination of the programme.
SUMMARY

• Healthy Inland waters provide vital ecosystem services (clean water supply, flood alleviation, fisheries, ecotourism) as well as the valuable and unique biodiversity they possess.

• There are disturbing signs that our inland waters are in a state of decline (many urban rivers are in a shocking state) which is very worrying for a dry country like ours that is very dependent on rivers and associated wetlands to sustain communities, agriculture and industry.

• To report on the state of our rivers, lakes, dams, wetlands and estuaries, as well as guide development on them, we need to have adequate capacity at provincial govt level in the aquatic science field.

• From this assessment, this appears to be lacking in most provinces

• How do we address this critical limitation in the short term and long term???

• Comments on and corrections made to the information provided in this presentation are welcomed (dimpson@capenature.co.za)