# HEALTH OF THE RIVER HEALTH PROGRAMME

# TOWARDS STANDARDISATION -WORKSHOP PAVES THE WAY

Nurturing interest today can fuel the human capacity and input needed for tomorrow.



With two years to full implementation, the National Aquatic Ecosystem Biomonitoring Programme (or River Health Programme as it is being referred to nowadays), is making great

strides to ensure that all components of the programme will be on track by 2000. Considerable progress has already been made at national and provincial level since the launch of the Programme at a Consultation Planning Meeting in September 1996, at which

were present. Unanimous support for the programme was given at this meeting.

mandated representatives of all provinces

### Workshop towards standardisation

The Programme aims to put in place, all over the country, the standardised and continuous monitoring of biological indicators. Fish, aquatic invertebrates and riverine vegetation are excellent indicators of the health of a water body.

A technical workshop held at the Albert



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#### HOW YOU CAN CONTRIBUTE

The success of the River Health Programme depends upon the involvement of as many stakeholders in water resource management as possible. If you or your organisation would like to know more about the programme and how you can become involved, please contact:

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At its recent meeting, the National Co-ordinating Committee agreed that a name that is easier to pronounce be found for the tongue-twister "National Aquatic Ecosystem Biomonitoring Programme".

The new name, River Health Programme, will not replace the full programme name (especially since rivers are only one component of aquatic ecosystems), but rather will be used as a more comfortable and informal way of referring to the programme.



1997. Demonstrations were carried out and ample discussion took place, an exercise vital for sparking interest, creating awareness and promoting the **River Health Programme.** 

Falls Resources reserve in KwaZulu/Natal in August 1997 paved the way for standardisation of the many techniques and procedures that water resource managers would have at their disposal once the programme is fully implemented.

Water resource managers have found the lack of information, and especially the lack of standardised information, to be a major stumbling block in their decision-making process.

"You cannot make meaningful decisions based on sets of information which you cannot compare with each other," says Chairman of the National Coordinating Committee Henk van Vliet of the Institute for Water Quality Studies. "Comparable data is extremely important."

The workshop was attended by researchers, scientists and water resource managers from all nine provinces.

### Implementation by 2000

The RHP is to be implemented on a pilot-scale in all of the provinces during the next two years. During this time, an implementation plan for full-scale, national implementation will be developed.

When fully implemented two years from now, the Programme will at national, provincial and local level be able to provide the much-needed management information on which to base informed decisions about maintaining healthy water bodies.

The information supplied by biological monitoring will act as an early warning system for a deterioration in water quality, will be able to identify problem areas, will assist in policy-making and strategy formulation, and generally will lighten the task of water resource managers by supplying them with scientifically-based and standardised data.

Serious efforts are now being made at all levels to put in place the many technical, institutional, training, capacity-building, research, communication, fundraising and other aspects that would make the full implementation of the programme in 2000 a success.

# ANNOUNCEMENTS

Ms Liesl Hill has been appointed National Coordinator of the RHP.

Her duties are:

- to act as the formal link between the various provinces
- to coordinate the national component of the RHP with the provincial initiatives
- to act as a central liaison
- to receive and direct research proposals to the research sub-committee (see back page).

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- Report number 6, "Overview of the design process and guidelines for implementation" is available and can be obtained from Ms Hill.
- Mr Jannie van Staden (Department of Water Affairs and Forestry) has been appointed as the Provincial Champion for the Western Cape.
- An e-mail network has been set up for quick and easy communication. The central address is: rene@liaison.co.za



# PROVINCIAL PROGRESS



This issue of River Health focuses on the work of the Provincial Implementation Teams of KwaZulu/Natal and the Northern Province.

Skilled technicians performing the electroshocking method for fish monitoring purposes.

# Northern Province biomonitoring programme promotes international participation



Left: Mick Angliss (Department of Agriculture, Land and Environment, Northern Province)

Mick Angliss, Provincial Champion of the Northern Province, reports that the Province has made great progress in promoting river monitoring within the international boundaries of the Limpopo catchment.

The first initiative began at a workshop hosted at Letaba Ranch by the Northern Province Department of Agriculture, Land and Environment. The aim of this workshop was to implement the biomonitoring programme within the province, while attempting to involve neighbouring states in the monitoring of shared resources. Delegates at the workshop included representatives from neighbouring provinces and Zimbabwe.

Mick says that at the workshop it was recognised that the RHP offers an opportune vehicle with which provincial and national commitments to international conventions such as Ramsar, Bonn and the Biodiversity Convention, could be promoted.

The workshop resolved that there is sufficient expertise and enthusiasm to implement the programme in three prioritised Northern Province river catchments: the Limpopo, Levuvhu and Olifants Rivers. These rivers are currently subject to desktop evaluations, and where necessary habitat integrity assessments prior to site selection and monitoring work.

### **The Limpopo River**

The Limpopo River will be studied to the Mozambique border and possibly to the coast if communications in this area develop. The desktop study, coordinated by Mick Angliss, will hopefully assimilate all information available on the Limpopo River, on the lower reaches of tributaries to the Limpopo, as well as on flood plains and pans.

The Northern Province Department of Agriculture, Land and Environment has undertaken to fund an initial helicopter survey of the river.

### **The Levuvhu River**

Prof Ian Gaigher of the University of Venda has undertaken to coordinate the Levuvhu River study. All of the tributaries of the Levuvhu are foreseen to be included in this study. Instream Flow Requirements (IFR) assessments have been carried out in the Levuvhu River with associated habitat integrity assessments, while hydrological studies of the Mutale River are pending.

# **The Olifants River**

An Olifants River study is presently being led by Bert Polling of the University of the North and is foreseen to become a cooperative exercise between Gauteng, Mpumalanga and Northern Province. Aerial surveys of the Olifants river are scheduled for 1998.

Dr Andrew Deacon is heading the Kruger Park study, which is in coordination with the above three river studies.

# **Aquaculture for local communities**

The second initiative is being driven by the Aquaculture for Local Communities nitiative of the Food and Agriculture Organisation of the United Nations, and attempts to monitor, regulate and control the movement of exotic and alien aquatic species, primarily fish, across watershed boundaries.

A workshop was hosted at the Ranch Hotel near Pietersburg in this regard, and was attended by delegates from South Africa, Botswana, Mozambique, Zimbabwe and Zambia.

The Limpopo catchment was again the focus of attention. Delegates at the workshop agreed that cooperation in the management of this resource should be used as a model for other international watersheds. Strong arguments were presented that the RHP and this exotic species programme run side by side.

Mick Angliss is coordinating the South African contribution of the study. Mick says that a useful contribution from this initiative will be the fish distribution maps for the whole of Africa which are currently being developed with the cooperation of the J L B Smith Institute. These maps will certainly provide an opporcunity for institutions to standardise their fish data bases.

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#### GETTING TO KNOW THE PROVINCIAL CHAMPIONS



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# PROVINCIAL PROGRESS

# The KwaZulu/Natal (KZN) River Health Biomonitoring Programme

Dr Chris Dickens, Umgeni Water, Pietermaritzburg,





"In 1909 the Seals Swimming Club held its gala in the Msunduzi River, a feat that would be impossible today because of the deteriorated state of the river," said Prof Charles Breen from the Institute of Natural Resources at a workshop held by the KwaZulu/Natal River Health Biomonitoring Programme in May 1997. He suggested that a large prob-

lem is not the failure to manage the river but a failure to define what constitutes a good river quality.

# **Objectives**

Dr Chris Dickens, RHP Provincial Champion for KwaZulu/Natal, says that the objectives of the KZN Programme were formulated at this workshop in order to address some of the limitations surrounding the protection of rivers and to provide tools with which to measure the progress of the programme. These objectives are to:

- measure, assess and contribute to the national report on the ecological state of aquatic ecosystems through State-of-the-Environment Reporting
- identify and quantify where impacts are taking place
- assist in setting objectives for rivers, based on a river classification scheme
- measure and evaluate the impact of developments on ecosystems
- be able to predict changes in the ecosystem due to planned development.

Chris says that the immediate plan for the KZN Programme includes drafting a project proposal based on GIS coverage of the province showing sub-regions, probable and current biomonitoring sites, probable reference sites, and urban, industrial and agricultural areas.

According to Chris, the KZN Programme is also striving to establish costs per site per annum, hold road-shows to discuss the project with stakeholders such as irrigation boards, TLCs, etc. and to encourage an "adopt a river" approach. The GIS project is foreseen to be valuable for the selection of reference sites.

A workshop of river authorities is hoping to provide an opportunity to amend the GIS coverage. It is expected that authorities will select, using their own expert opinion, the most likely reference sites which can then be used as such until a detailed survey and assessment of their validity can be carried out. A trial selection of reference sites, using recommended methods, would then be conducted.

### Data storage

The Department of Water Affairs and Forestry is presently acting as custodians of the national data but a local repository for more immediate access to data is vital. Umgeni Water is a suitable local custodian for such data. The format of data storage needs to be consistent. Assessing data through the Internet provides an option in this regard.

There is much potential for biomonitoring within KwaZulu/Natal especially for linkages with other initiatives such as:

- the River Management Forum of Pietermaritzburg
- the biodiversity survey of the Natal Parks Board
- Mhlatuze Water, RBM and CRUZ biomonitoring around the Richards Bay area
- biomonitoring of central KZN by Umgeni Water
- the Town and Regional Planning Commission which sees the RHP as satisfying some of its own research needs.

### Provincial implementation team

The KwaZulu/Natal Provincial Implementation Team is foreseen to represent authorities and stakeholders within the province and would be best suited to implement and own the RHP in the region according to available capacity, expertise and needs within the province. The team would be responsible for:

- institutionalising the RHP in terms of budgets, resource development priorities and policy planning
- implementing and maintaining the KZN Programme
- managing operational resources and infrastructures
- developing and implementing funding models, specifically regarding provincial and local resources of funding.

Enquiries: Dr Chris Dickens Umgeni Water PO Box 9 Pietermarizburg, 3200 Tel: (0331) 341 1151 Fax: (0331) 341 1084 e-mail: chrisd@umgeni.co.za Since the initial Consultation Planning meeting in September 1996, the following has been put in place:

- An updated conceptual design for the programme, documented in Report No 6 of the River Health Programme Report Series
- A working budget for the next two years while working towards implementing the conceptual design
- A National Coordinating Committee (NCC) with representation by all nine provinces and the three custodians of the Programme
- A Provincial Champion appointed by each province
- Stakeholder workshops and action plans in most provinces
- Some provinces have already made equipment and staff available, or purchased equipment from their own budgets
- Scientific advisors have been appointed
- Portfolio managers have been appointed
- Research projects are being funded by the Water Research Commission to fill gaps in current information
- A technical workshop towards standardisation of techniques held in August 1997
- Several publications and newsletters distributed country-wide
- Fund-raising efforts have started at national and provincial levels in a joint effort by implementing agencies to contribute to the implementation design phase of the programme.

### NCC focuses on capacity building

The existing RHP team consists of a group of respected people who are currently developing monitoring methods that will be scientifically defensible, thorough, peer reviewed, and will set the basis for long-term monitoring towards the health of South Africa's rivers. However, understudies are urgently needed to learn from these experienced researchers so that young and enthusiastic people can be trained in all aspects of biomonitoring. This will ensure that the RHP remains dynamic and sustainable well into the future.

At the second NCC meeting held in August 1997, capacity building was highlighted. The NCC has a responsibility to ensure that the composition of the River Health Programme reflects the composition of society. Creative mechanisms need to be employed to rapidly bring previously disadvantaged groups into the process. One such mechanism is that each provincial champion and portfolio manager employ and train students from previously disadvantaged universities.

Funding is urgently needed for the capacity building portfolio of the RHP. Dr Henk van Vliet (Institute for Water Quality Studies) suggested that this funding be sought from international sources. Providing bursaries for post-graduate courses related to aquatic monitoring is critical.

### THE RHP TEAM

### **Scientific advisors:**

Dr Neels Kleynhans (Institute for Water Quality Studies) Dr Jackie King (University of Cape Town) Prof Jay O'Keeffe (Institute for Water Research)

### **EXCO members:**

Mr Geoff Cowan (DEAT), Dr Johan Engelbrecht (Mpumalanga Parks Board), Dr Chris Dickens (Umgeni Water), Ms Tisha Greyling (Greyling Liaison cc), Ms Liesl Hill (Institute for Water Quality Studies), Dr Steve Mitchell (Water Research Commission), Prof Jay O'Keeffe (Institute for Water Research), Mr Dirk Roux (Environmentek, CSIR), Dr Henk van Vliet (Institute for Water Quality Studies).

### **Portfolio Managers:**

**Communication and Promotion:** 

Solly Manyaka and Tisha Greyling (ManyakaGreyling JV) Research and Development: Prof Jay O'Keeffe Education and Training: Dr Johan Engelbrecht Fund Raising: Ms Delana Louw (IWR Environmental) Capacity Building: Post to be filled.

### **Research and Development**

Prof Jay O'Keeffe, Portfolio Manager for Research and Development, emphasises that research for the RHP is crucial to ensure that new tools and protocols are constantly provided, updated and improved. The information requirements for a multi-faceted programme such as the RHP are certain to change. Monitoring results also need to reflect the latest understanding and availability of technology and thus doing, will allow a better basis for decision-making.

Several proposals for research in biomonitoring and related fields have been submitted in the past year. In order to evaluate these proposals, prioritise them and direct the proponents to potential funders, a sub-committee consisting of all EXCO members and Dr Chris Dickens has been established.

Jay O'Keeffe says that the RHP welcomes any new research proposals. By ensuring that the sub-committee reviews all proposals regarding biomonitoring, overlapping in research can be avoided and gaps in research can be identified.

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Solly Manyaka, who is playing an active role in the communication portfolio of the RHP.