WATER Kidz

New Version of
Mini Water Quality Bug Test

For years the South African Scoring System (SASS) has formed a key tool in the assessment of the health of the country's rivers. A simplified version of this tool, developed for use by schools and non-specialists, has now undergone a welcome upgrade. Report by Dr Mark Graham.

South Africa has been a world leader in biomonitoring techniques using macroinvertebrates (animals that have no backbone and can be seen without using a magnifying glass). The most successful of these have been the SASS, particularly version 5.

The miniSASS tool was originally developed during the late 1990s as an easy-to-use, scientifically reliable and robust technique to monitor water quality in rivers and streams. The mini version reduced the taxonomic complexity of SASS to a few aquatic invertebrate groupings (13 instead of the original 90) which would act as surrogates for the complete suite of SASS taxa.

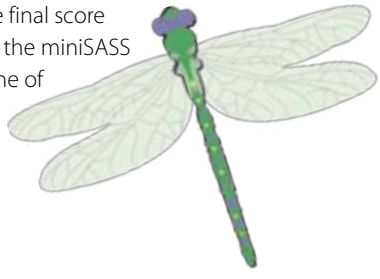
A recent Water Research Commission sponsored review of miniSASS identified a need for the programme to be upgraded as a community and environmental education resource tool which would be linked to the River Health Programme and would assist in the new national Adopt-a-River drive. A survey was conducted to identify the limitations which were an issue with the current miniSASS (version 1) and to align the programme more closely with the national curriculum.

Zandvlei Nature Reserve education officer Mark Arendse helps Logan Theron from Crestway High School and Nathaneal Diedericks from Muizenberg High School to identify invertebrates found in one of the canals flowing into Zandvlei estuary.

The key output from this work has been the refinement of the tool (version 2) in the form of a pamphlet and a field guide, as well as the development of source materials to support educators in addressing water-related themes in the formal and informal education arena.

The new miniSASS version 2 pack contains an information pamphlet covering the history of miniSASS, step-by-step methodology, information regarding the importance of water-quality monitoring and management in South Africa, a glossary, keywords and sites for further reading, step-by-step instructions for the scoring and up-to-date contact details. In addition, the field guide contains a dichotomous key which will aid in the identification of the aquatic macroinvertebrates, new line drawings and some additional general information on macroinvertebrate feedings habits and diet.

A complete reworking and statistical investigation of the quality value scores assigned to each miniSASS macroinvertebrate group was undertaken as part of the study. This was based on over 6 000 SASS records extracted from the national rivers database and used to verify and refine quality values for the new miniSASS version 2. This process was also able to allow a simplifactions of the qualify value scores to be applied throughout the country and made for an easier and less ambiguous interpretation of the final score calculations for the miniSASS (identified as one of



the areas to be addressed during the audit phase of the project).

The educational aspect of the upgrade was dealt with in a series of integrated lesson plans which have river health as a central theme and use miniSASS as a central tool for these lessons. Grades five, seven, nine and eleven have each been provided with five different activities which cover a range of subjects, including geography and life sciences.

Version 2 of the miniSASS tool underwent field testing at the Wildlife and Environment Society of South Africa Environmental Centre in Howick by river health practitioners and environmental educators. It was well received by all the participants.

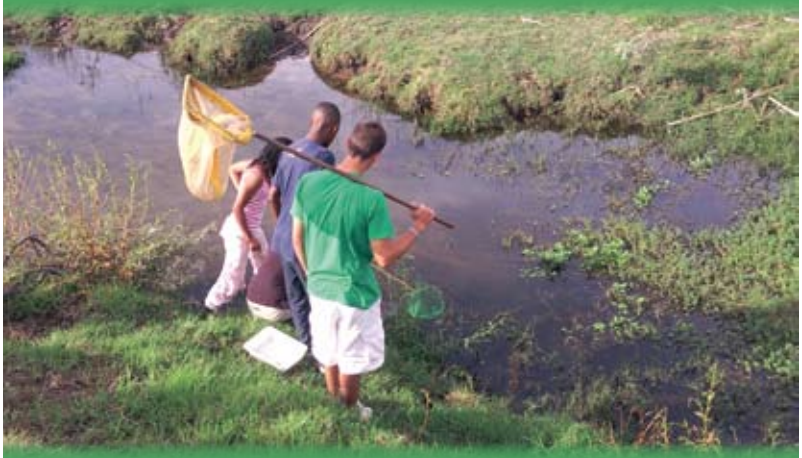
The revised miniSASS tool was also used by a group of schools in Cape Town as they embarked on a series of source-to-sea expeditions on a schools catchment study. Along with a variety of GPS work and identification of the indigenous and alien flora in the area the pupils carried out the revised miniSASS tests on the Prinskasteel stream where it ran through a farm, the Tokai industrial area and the Zandvlei estuary at the end of the catchment.

The expeditions introduced the students to a local river which many had not even realised was there and, using the miniSASS tool made the students realise how badly polluted the river was in certain areas and how it is everybody's responsibility to keep the rivers clean.

Based on the response of the groups who have already used the upgraded miniSASS, it promises to continue to be a valuable tool in educating pupils and interested community members about the quality of water found in South African rivers and streams.

A fully downloadable version of the new miniSASS toll and the integrated lesson plans can be found on the GroundTruth website http://ground-truth.co.za or from miniSASS@ground-truth.co.za or from the Share-Net/WESSA offices in Howick (e-mail: sharenet@wessa.co.za).

Leighan Mossop from Table Mountain National Park collecting bugs for a miniSASS test at the castellated weir on the Keyser River.



Learners from Cape Town carrying out the miniSASS test in the Keyser River on Dreyersdal Farm, (left to right) Samantha September and Julian Gouws from Crestway High School and TC Nortje from Zwaanswyk High School.

Susan Gie, one of the group assistants, helping a group of learners to identify their organisms.