

- Purpose
- How to apply the tool
- Context of the tool



Introduction to miniSASS



WATER
RESEARCH
COMMISSION



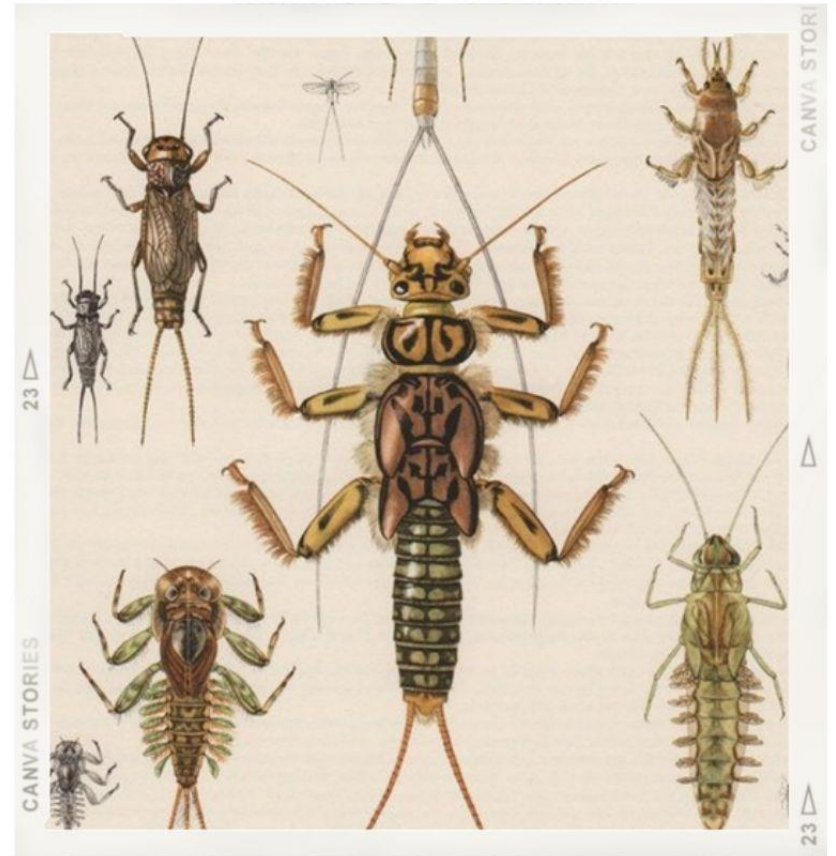
GroundTruth

BACKGROUND CONTEXT OF TOOL

- Freshwater is important for life on earth and human survival. Citizens should be knowledgeable of river health and the factors that affect river health. South Africa is a water-scarce country so it is important to ensure that water quality and quantity are monitored and managed.
- South Africa is a world leader in bio-monitoring techniques using water "nunus", an example of one is the South African Scoring System version 5 (SASS 5). MiniSASS is a simpler version of SASS 5 and uses the presence of water "nunus" to indicate "river health".
- Different water "nunus" have different sensitivities to water quality conditions. More sensitive "nunus" will disappear from a river system where water quality has declined.

PURPOSE OF TOOL

- **miniSASS** is used to monitor the health of the river and measure the general quality of the water in that river.
- **miniSASS** uses 13 taxa, allowing for simpler identification and understanding of the tools in a detailed manner.
- **miniSASS** does not measure water contamination, therefore does not tell us if the water is safe to drink.



WHAT YOU NEED:

The tools you need to sample:

- Score sheet
- Pen / Pencil
- Sieve/net (You can make your own net)
- White Tray / Ice cream container or yoghurt containers
- Wear Gumboots/Waders/Wellingtons (protecting your feet from the sharp rocks or insects/animals)



HOW TO USE IT

SITE SELECTION

- MiniSASS should be conducted in streams or rivers that have flowing water. It should not be done in stagnant water like lakes, ponds, dams or wetlands.
- **Visually observe your surroundings to help you collect clues on how deep the water is:** if the bank is not too steep, position your net in the river, and ensure that it is on the river bed to measure the depth.

First look for the portion of the river, that has 3 habitat types for you to sample.

- Rocky habitat
- Vegetative habitat
- GSM habitat

HOW TO USE IT: SAMPLING PROCEDURE

ROCKY HABITAT

Shuffle your feet and kick the bigger rocks inside the water to disturb the silt and water nunus. As you do this, your net should be positioned at a downstream position so that all the water nunus released will go into the net. As you sample in this habitat, ensure that you are not "obstructing" the flow of the water, (standing in the direction the water is flowing).



HOW TO USE IT: SAMPLING PROCEDURE

VEGETATIVE HABITAT

sample different vegetation types. Push your net under your vegetation and scoop it up in a circular motion.



HOW TO USE IT: SAMPLING PROCEDURE

GSM HABITAT

you sludge your feet into the mud and dislodge all the sand and mud into the water (use your feet) and sweep the net in the dirty and muddy water; careful not to get too much mud and sand in the net.



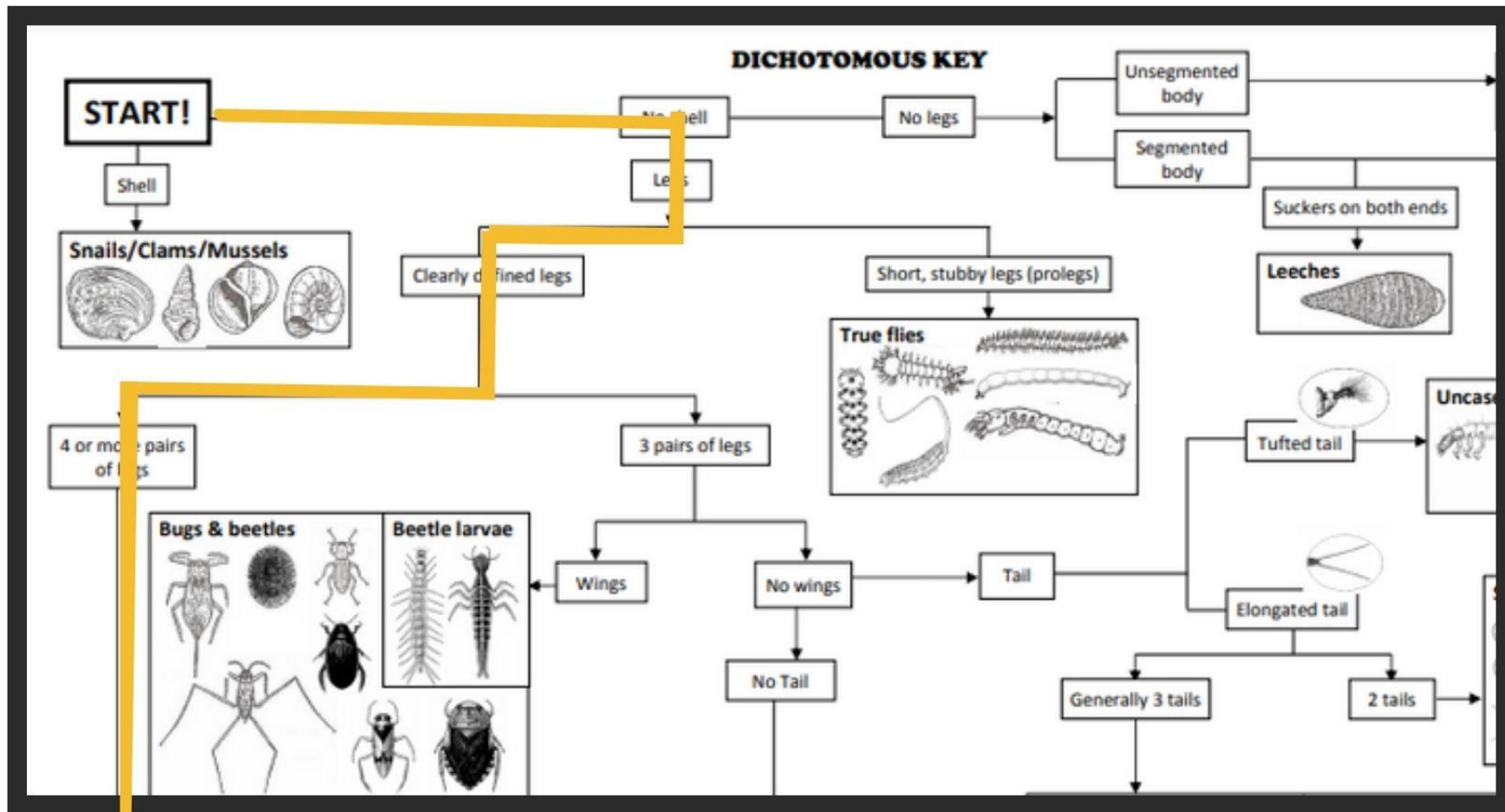
HOW TO USE IT

POST SAMPLING PROCEDURE:

- Now you must deposit all the sampled biota into the white tray. Halfway fill the tray with water and rinse the net. Carefully use your hands to get the biota that might be clinging to the net and on the leaves or plant debris and place it in the tray.
- Identify each group of organisms using the **dichotomous key**.



USING THE DICHOTOMOUS KEY TO IDENTIFY WATER "NUNUS"



SCORING:

To calculate a River Health Index:

The sensitivity scores for the water "nusus" identified from the water sample are summed up to get a total score. The total score is divided by the number of groups identified to get the **miniSASS score**.

$$\text{miniSASS score} = (\text{Total score} / \text{Number of groups}).$$

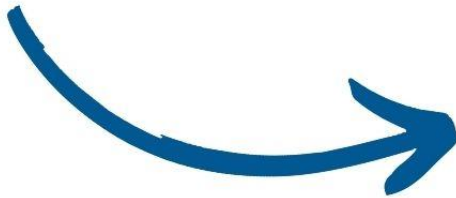


miniSASS ILLUSTRATIONS & SCORE SHEET		SENSITIVITY SCORE
Flat worms		3
Worms		2
Leeches		2
Crabs or shrimps		6
Stoneflies		17
Minnow		5
Mayflies		5
Other Mayflies		11
Damselflies		4
Dragonflies		6
Bugs or beetle		5
Caddistlies (cased & uncased)		9
True flies		2
Snails		4
TOTAL SCORE		30
NUMBER OF GROUPS		7
miniSASS SCORE (miniSASS Score = Total Score ÷ Number of groups)		4.2

Ecological Category (Condition)	River Category	
	Sandy River	Rocky River
NATURAL CONDITION (Unchanged/Unmodified - Blue)	>6.0	>7
GOOD CONDITION (Few modifications - Green)	5.6 to 6.0	6.2 to 7
Fair CONDITION (Some modifications - Orange)	5.4 to 5.6	5.7 to 6.2
POOR CONDITION (Lots of modifications - Red)	<5.4 to 5.6	5.3 to 5.6
VERY POOR CONDITION (Critically modified - Purple)	<5.4	<5.3

UPLOADING YOUR RESULTS:

You can upload your data on the www.minisass.org to contribute to the miniSASS database and the picture of river quality in South Africa.



miniSASS

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Please upload your miniSASS data, our database is growing and all the in

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Welcome to miniSASS

What is miniSASS?