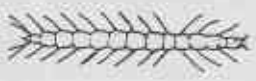
RESEARCH

AQUATIC INVERTEBRATES AND RIVER HEALTH

by Mick Smith







IF you live in the Wheatbelt, and are concerned about the health of your local rivers or wetlands, here's how you can help find out what state they are in.

During the last three years a team of researchers from CALM and three universities have been collaborating to build models which will be used to assess river health throughout WA. The work has been developed under the Commonwealth's Monitoring River Health Initiative (MRHI), and aims to assess river health using biological indicators - in this case, aquatic invertebrates.

Firstly, we built a computer model that could predict the invertebrates that live along a stretch of river that was unaffected by human activity. We did this by taking a set of environmental measurements (latitude, depth etc.) that are used to characterise a site on the river. The aquatic invertebrate community predicted to occur at the site is then compared with the community actually observed when a sample is taken with a pond net. Following this, the ratio of observed to expected animals is used as a direct measure of river health.

This stage involved sampling nearly 200 minimally disturbed sites to provide baseline information. Some heavily disturbed sites were also sampled, and these were used to test if the model was capable of detecting environmental disturbance. It seems the model works reasonably well, but needs some refinement to be capable of detecting more subtle impacts.

We now want to assess the health of rivers in the Wheatbelt, and we would really like some assistance. We need 135 sites in the area between Geraldton and Esperance, in the 250 - 600 mm rainfall belt. To ensure that the most appropriate places are sampled, could you please suggest some sites?

The kind of river sites we are interested in include:

- sites that are minimally disturbed and represent the most pristine sites in your region
- sites that are heavily disturbed and are typical of, and indicative of, the main impacts in your region
- sites that are of historical or recreational importance in your region
- any other sites that you consider worthy of sampling,

We are attempting to combine the MRHI assessment of Wheatbelt rivers with a wetlands project under the WA Government's Salinity Action Plan. This project will be sampling aquatic invertebrates from different wetlands, including lakes, swamps, mound springs and rock pools. These wetlands could be saline, brackish or fresh but, for this project, they should all be least-disturbed sites. Again, have you any suggestions for locations, please? Ring me on 08 9405 5158 - asap!

Mick Smith is a consultant biologist at CALM's Wildlife Research Centre, Woodvale.