

COMMUNITY STREAM SAMPLING AND SALINITY MAPPING

in the Murray-Darling Basin

FACT SHEET ONE

While salt can be widespread in the Australian landscape, not all of this salt represents a threat to farmers and the environment.

Community stream sampling and salinity mapping in the Murray-Darling Basin is a \$20 million programme spanning three years (2005-06 to 2007-08), which is funded under the National Action Plan for Salinity and Water Quality (NAP).

The aim of the programme is to provide communities within the Murray-Darling Basin (MDB) with the means to identify areas within their catchments that are at risk from salinity. The programme will help prioritise investments for salinity management in the MDB by providing comprehensive, comparable data on sources of salt over the whole basin.

Regional catchment management authorities in the MDB have been invited to participate, and will work closely with relevant state and regional programmes, such as Landcare, Rivercare and Waterwatch. The programme is managed by the Bureau of Rural Sciences (BRS).

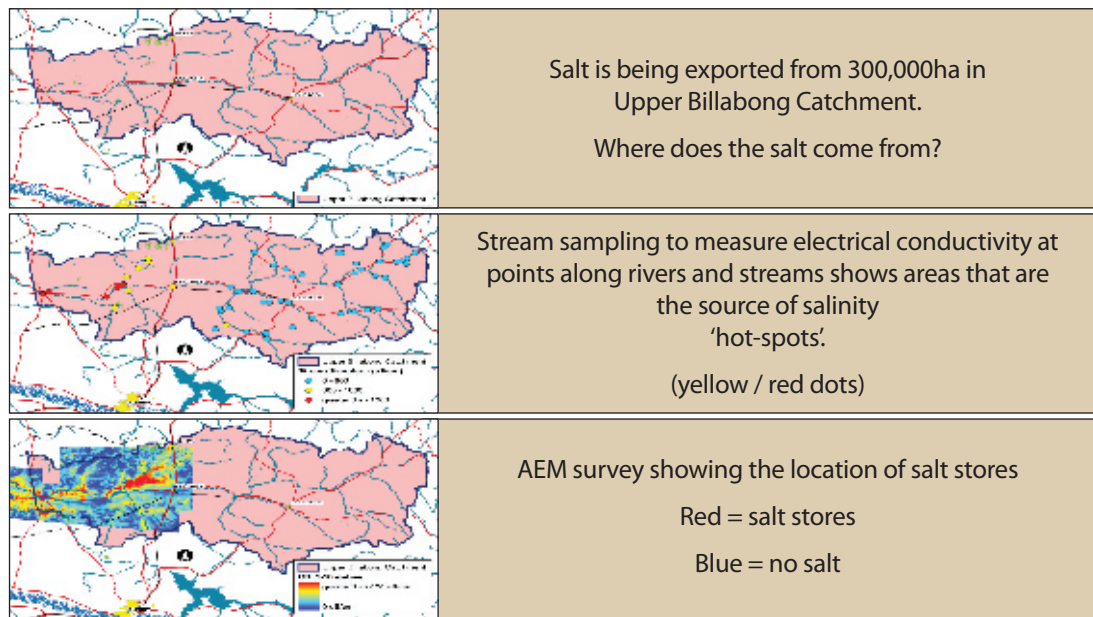
Mapping salt in catchments

The Australian Government has adopted a two-pronged approach for salt mapping:

- stream sampling to identify subcatchments that are contributing salt to streams
- detailed salt mapping of high-priority areas, using techniques such as airborne electromagnetics (AEM).

This approach has already been used successfully in some areas of the MDB. For example, in the Upper Billabong Catchment in New South Wales (NSW) (see Figure 1), the stream sampling data collected identified subcatchments with salty run-off (areas with red and yellow dots). This showed that most of the upper part of the catchment did not have significant salinity problems. Efforts were then targeted in the lower end of the catchment, and AEM surveys produced detailed maps of areas where salt is stored. Working with the community, this information can be used to develop salinity management options tailored for the areas most at risk.

FIGURE 1 Subcatchments with salty run-off in the Upper Billabong Catchment, New South Wales



Community stream sampling programme

Community based stream sampling programmes will be established to monitor salinity in key streams over three years. Some catchments already have active stream sampling programmes, and BRS will work with catchment management organisations, Landcare and Waterwatch programmes to expand and support these programmes.

A web-based database and mapping tool will be developed to provide community groups with easy access to the data, and to allow them to make their own maps and analyses. The data will be collated at catchment and basin level to provide maps identifying subcatchments discharging fresh and saline water.

Contact

Peter Baker
Programme Leader
Phone +61 2 6272 5609

Scott Macaulay
Airborne geophysics component
Phone +61 2 6272 4883

Margaret Allen
Community stream sampling component
Phone +61 2 6272 4093

The information will be used by catchment management authorities and community groups to plan and target salinity and water management programmes within their catchments. It will also provide a consistent database on salinity across the MDB, to help set priorities for future investment in salinity management.

Detailed salt mapping

Detailed salt mapping will be carried out in some areas already identified as high priority by the catchment authorities. These surveys are an important input for catchment and farm-level planning and management in saline areas.

A detailed AEM survey will be made of the areas contributing water to the Macquarie Marshes in NSW, to monitor the impact of upstream irrigation development on this internationally important Ramsar wetland.¹ A detailed AEM survey will also be done in Victoria. Further areas for detailed mapping in other regions may be identified through the stream sampling and other investigations.

Existing AEM data from previous studies at Angus Bremer Plains (South Australia), Honeysuckle Creek (Victoria), Billabong Creek (New South Wales) and Lower Balonne (Queensland) will be interpreted using the latest techniques to provide high-quality salinity maps for these areas. Other areas of investigation will involve the applicability of AEM datasets in understanding the interconnection of surface and groundwater, and aquifer storage and recovery (water banking).