

SECTION 3: RESEARCH AND COMMUNITY ACTIVITIES

Groundwater Resources in the ACT

Environment Protection and Heritage continues a program of research into the groundwater resources of the ACT to ensure that groundwater is able to be used appropriately as an alternative to mains water without being over-extracted.

On behalf of the ACT Government the Bureau of Rural Sciences has installed 12 groundwater monitoring bores in high demand subcatchments within the ACT. The purpose of these monitoring bores is to gather information about the transmissivity (capacity for water to move through the aquifer), hydraulic conductivity, storage capacity potential, and recharge rates of the various aquifer types within these subcatchments. Pumping tests of these bores have been performed whilst monitoring of the aquifer recharge response to rainfall continues.

Environment Protection and Heritage has entered into an agreement with the National Water Commission to be part of the 'The Australian Government Water Fund for the following RAISING NATIONAL WATER standards project'. The ACT component of the project will involve the Strategic Assessment and Management of Priority/Stressed Groundwater Catchments. The objective of the program is to better manage water resources through:

- improving capacity to monitor, evaluate and report on water resources at the national, regional and catchment level;
- improving knowledge, information and skills needed to better manage our water resources; and
- enhancing innovation for rural and urban water use efficiency.

Salinity

The ACT is participating in Commonwealth programs to quantify the movement of salt through the Murray Darling Basin. The Murray Darling Basin Commission provides support for modelling and monitoring through the 'Basin Salinity Management Strategy' whilst the Department of Agriculture Fisheries and Forestry has augmented ACT salinity monitoring through the 'Community Stream Sampling Program'.

Continual measurement of stream salinity is now performed at key locations throughout the ACT to enable determination of potential problems zones and to provide a robust dataset to validate salinity modelling.

ACT salinity models are being developed to quantify a salinity baseline and establish a salt export target. These models combined with the new intensive datasets will allow the ACT to determine compliance with a salt target, identify which areas need attention and assess how effective Water Sensitive Urban Design is on controlling salinity changes brought on by land development.

Threatened Fish in the ACT

To mitigate the impacts of regulation in the Cotter River, environmental flows were released and included a series of flushes designed to remove sediment from riffles and maintain spawning habitats for threatened fish (Macquarie Perch and Two-spined Blackfish). Monitoring together with ACTEW in April 2007 investigated the effects of the environmental flows on fish populations. The monitoring looked at variations in the populations of two threatened fish species, being Two-spined Blackfish and Macquarie Perch.

Following low flows in 2006 **Two-Spined Blackfish** numbers were low at regulated sites in the Cotter River and in unregulated sites outside the Cotter Catchment. At unregulated sites in the Cotter Catchment Blackfish numbers were above average, due mainly to good numbers of recruits at Black Sally Flats, above Corin Dam.

The management of environmental flows in the Cotter River has resulted in good recruitment of **Macquarie Perch** in 2004, 2005, 2006 and 2007. Macquarie Perch in the Cotter catchment are predominantly found in the Cotter Reservoir and approximately 1km upstream of the reservoir. Further upstream, a rock-ramp fish-way was constructed in 2001 to enable fish passage past the Vanity's Crossing causeway and provide access to habitat along a greater length of river. Juvenile Macquarie Perch were identified above the crossing for the first time in April 2007. Monitoring of the Cotter Reservoir in July 2007 again found that successful recruitment had occurred, with 233 Macquarie Perch captured across several age/size classes, predominantly juveniles. Further monitoring of both Macquarie Perch and Two-spined Blackfish will be conducted in 2008.

The impacts of the 2003 bushfires highlighted the precarious state of Macquarie Perch stocks, with Cotter Reservoir containing the only long-term viable population of this species in the ACT. As part of a new program, which aims to establish a number of self-sustaining populations of this species outside of the Cotter Reservoir, 126 juvenile Macquarie Perch were translocated to the Molonglo River in the Molonglo Gorge area. Monitoring of these translocated fish will not occur for several years as breeding is unlikely to occur until the fish are at least three years of age. Translocation of Macquarie Perch has previously proved to be successful with the establishment of a new population in the Queanbeyan River above Googong Reservoir.

An experimental project looking at the response of large aquatic and riparian fauna to environmental flows is currently being designed. This project is of particular significance with the proposed expansion of Cotter Dam and the need to refine environmental flows in light of increasing demands on water resources.

Restoration of the Lower Cotter Catchment

The Lower Cotter Catchment (LCC) draft Strategic Management Plan (SMP) was released for public consultation in mid-2006. The plan emphasises water as the primary value of the LCC and articulates a goal of achieving clean water and healthy landscapes. Public submissions to the draft plan resulted in some changes to the final SMP but the overall intent and strategies have not altered. The final SMP has not been formally adopted by the Government. Implementation of key objectives and actions is well underway.

In 2006/07 detailed Implementation Plans were developed for fire management, vegetation management, roadwork and sediment control and research and monitoring. Strong progress has been made by PCL and ACTEW Corporation in implementing these plans. Key achievements include closure of 37 kilometres of redundant roads, upgrading of 50km of required roads, commencement of a research study into sediment movement from roads, removal of pine wildlings from over 1500 hectares of ex-pine plantation, chemical removal of blackberry from over 150ha, removal of poplars and willows from Blundell's Flat wetland, planting over 140,000 native tube stock, and extensive community involvement and engagement in hands-on and other activities. In addition, a large Natural Heritage Trust/National Action Plan project commenced in mid 2006 and will implement a range of soil and vegetation initiatives.

Planning is underway for a range of further actions in 2007/08 including planting a further 300,000 native tube stock, removing pine wildlings from the remaining ex-plantation areas, closure of another 60km of redundant roads; construction of sediment control dams, beginning the staged removal of pine plantations and expansion of monitoring programs.

The pace and quality of progress underlines the excellent relationships and partnerships between the ACT Government land, fire and environment protection agencies, ACTEW Corporation and a wide range of community groups and individuals.

Upper Murrumbidgee Catchment Coordinating Committee

The *Upper Murrumbidgee Catchment Coordinating Committee (UMCCC)* is a community based organisation made up of agencies and groups that are responsible for, or contribute to, natural resource management in the upper Murrumbidgee catchment.

The UMCCC operates as a regional cross border network to promote communication, build awareness and disseminate knowledge between its members. These include agencies and groups in NSW and the Australian Capital Territory. The UMCCC actively participates in community forums and has received presentations and made submissions on numerous water resource policy initiatives including the ACT Water2water proposal.

The UMCCC received funding under *Envirofund* to develop fact sheets about drought preparation for rural landholders in the upper catchment and groundwater issues for small landholders. Groundwater is a major issue for rural landholders and is a system few people fully understand. Fact sheets such as this are important to educate people on the importance of sustainable groundwater use.

Refining and implementing the willow management strategy for the Upper Murrumbidgee Catchment is now in its second year of operation. The UMCCC has received funding through the Defeating the Weed Menace R&D grants to undertake the project "Exploring the agents of change to peri-urban weed management". This research will be undertaken in Partnership with Griffith University.

Waterwatch

Waterwatch is a nation-wide water quality monitoring program where the sampling and testing is done by community volunteers. **ACT Waterwatch** is part of that national community that encourages all Australians to become involved and active in the protection and management of their waterways and catchments.

It is a 'monitoring to action' program that aims to equip local communities with the skills and knowledge to become actively involved in the protection and management of their local waterways and catchments. The program in the ACT is funded by both the Commonwealth and the Territory, with three part-time coordinators attached to the Ginninderra, Molonglo and Southern ACT Catchment Groups, and supported by the ACT Waterwatch Coordinator in TAMS. Waterwatch volunteers come from local community groups such as Landcare, Parkcare and Catchment Groups, as well as residents, schools and landowners. They regularly monitor the water quality of local creeks, wetlands, lakes, rivers and stormwater drains. The volunteers, all carefully trained and kept up to date, with support from the ACT Waterwatch Coordinator and *Ecowise*, collect information at sites throughout urban and non-urban ACT, to complement and extend the coverage provided to Environment and Recreation.

Healthy catchments produce healthy ecosystems with fish, frogs, birds, plants, macro-invertebrates and people. Waterwatch groups have initiated many positive, community based conservation activities such as creek restoration, willow removal, removing litter from waterways, eradicating weeds, drain stencilling, development of habitats, reducing the use of pesticides, fertilizers and other pollutants.

Waterwatch CAMPFIRE Program

It is now four years since the January 2003 bushfires that scorched over 160,000 hectares or 70% of the ACT and impacted huge areas across the entire Upper Murrumbidgee region. A project that has had real success since these fires is affectionately known as CAMPFIRE (Community Assessment Monitoring Program for Fire Impacted River Ecology). CAMPFIRE volunteers collect water quality information from over 20 bushfire affected sites across the ACT. The program's three *CAMPFIRE Reports* can be found on the Environment ACT web site at:

www.environment.act.gov.au/yourenvironmenthwp/waterwatchact.html

Campfire was awarded the Murray Darling Basin Commission Rivercare Award in the 2005 ACT Landcare Awards.

Frogwatch

Frogwatch is a community frog monitoring program that aims to involve large numbers of volunteers of all ages to undertake frog monitoring and protect frog habitats.

In National Water Week, the 3rd week of October each year, over 200 Frogwatch participants monitor frog populations at approximately 140 sites around the ACT and Region. Frogwatch participants attend a training seminar where they learn all about the fascinating world of frogs, how to monitor them, and ways to help protect them and their habitats. The Frogwatch Census involved an assessment of the types and abundance of frogs living in our environment. Frog species are widely recognised as indicators of environmental health and their presence can indicate the long term health of a catchment. Results of the Community Frogwatch Census are available on the Environment ACT website at:

www.environment.act.gov.au/yourenvironmenthwp/waterwatchact.html

Frogwatch October 2006 offers detailed information about ten of the local frog species, their populations and distribution as mapped during this reporting period.



Ginninderra Volunteer Water-watchers taking turbidity and sweeping for macroinvertebrates.

Getting Involved in Waterwatch

If you are interested in improving the health of your local waterway and meeting or forming a group of likeminded individuals please contact the Waterwatch Facilitator on 6207 2246.

Online information about Waterwatch is available on the website at: www.act.waterwatch.org.au and features Waterwatch resources, contact details and a library of relevant publications and fact sheets.

The Waterwatch Information Network (WIN) is a regular information e-mail, which promotes Waterwatch, and water quality issues in the Upper Murrumbidgee Catchment. Membership is free and open to all people with an interest in catchment health. Contact Waterwatch ACT on 6207 2246 for more information on WIN.