

## SECTION 3: RESEARCH AND COMMUNITY ACTIVITIES

### Monitoring of Threatened Fish in the ACT and Re-introduction of Trout Cod to the Murrumbidgee and Cotter Rivers

Monitoring of the effects of the January 2003 bushfires on threatened fish species continued in 2005. Populations of the threatened Two-spined Blackfish in the Cotter catchment were sampled between February and April 2005. As reported in last year's water report, after an initial reduction in 2003 immediately after the fires, blackfish numbers recovered strongly in 2004 to be at approximately pre-fire levels, with small young-of-year fish dominating the catch. Monitoring in 2005 revealed that numbers had declined, with few young-of-year fish present, and it is unknown whether this is a temporary setback or reflects continued decline of river condition with the prolonged drought. The environmental flow regime in the Cotter River was modified in 2003/2004 to accommodate lower than normal inflows to dams, with a 'drought flow' regime implemented in July 2003. The details of the drought flow regime are contained in last year's report. The drought flow included a series of flushes designed to remove sediment from riffles and maintain spawning habitats for threatened fish (Macquarie Perch and Two-spined Blackfish).



Scientists of Environment ACT using sophisticated radio-tracking equipment to follow movements and dispersal of fish. What does your office look like?

Macquarie Perch in the Cotter catchment are largely restricted to the Cotter Reservoir and approximately 1 km of river upstream of the reservoir. Critical spawning habitat within this section of river was severely impacted by post-fire sediment accumulation which was smothering spawning sites. Monitoring of Macquarie Perch in the Cotter Reservoir in 2004 and 2005 revealed that young-of-year fish comprised approximately 25 % and 69 % of the catch respectively. Whilst this proportion in 2004 was lower than would normally be expected, it demonstrated that at least some individuals successfully spawned, with the proportion of new recruits at healthy levels in 2005. Further monitoring of both Macquarie Perch and Two-spined Blackfish will be conducted in 2006.

A trial re-introduction of the endangered Trout Cod was conducted in the Murrumbidgee and Cotter Rivers in the ACT in late 2004. Previous re-introduction efforts for this species in southeastern Australia have involved the release of small fingerling fish (approximately 3-5 cm long). However, in this trial sub-adult fish (approximately 33-42 cm long) from a commercial hatchery were used, with fish fitted with radio tags to monitor their movements after release. In an unexpected result, the sub-adult fish suffered considerable mortality over a period of 6 months after release, with predation by birds and/or water rats suspected as significant causes of mortality. Predation of captive-reared animals after release is a relatively common issue worldwide for reintroduction programs for threatened terrestrial species, but has not previously been documented for aquatic species in Australia. 'Native' animals from captive rearing programs are thought to lack the learned predator recognition or avoidance skills that 'wild' animals have. Presumably high levels of sedimentation in pools of the Cotter River post-bushfire also reduced the availability of predator refuges for Trout Cod. Further investigation into measures to minimize predation or educate fish is planned.

## **Effects of Commercial Forest and Native Forest Restoration in the Lower Cotter River Catchment on Fauna**

The devastation of Black Saturday 2003 wiped out the commercial forestry areas in the Lower Cotter River Catchment and the fire's after effects threaten vulnerable fish and frog populations as well as jeopardising the successful re-institution of the Cotter Reservoir as a source of potable water. In response a joint research effort by the Australian National University and the University of Canberra is investigating how the restoration of commercial and native forests will affect native fauna, particularly riparian and aquatic ecosystems.

### **ACT Natural Resource Management Plan**

The ACT signed a bilateral agreement with the Australian Government on 27 March 2003 for the delivery of the Natural Heritage Trust in the ACT over the next five years. The agreement acknowledges that natural resource outcomes, including those relating to water, are best achieved at the regional scale and that investment needs to be targeted. The agreement further requires that the ACT's regional body, the ACT Natural Resource Management Board (which was formed by expanding the membership of the ACT NRM Advisory Committee), prepare an integrated NRM plan as a basis for guiding future investment, including funding from Australian Government programs. The Plan was accredited by Territory and Australian Government Ministers as the basis for future NRM investment in the Territory.

Territory and Australian Government Ministers endorsed eight activity areas for investment of funding from the Natural Heritage Trust to address issues identified in the ACT Natural Resource Management Plan. Approved activity areas relevant to water were:

- protection and enhancement of native vegetation and riparian zones on rural leasehold land; and
- protecting threatened aquatic fauna by managing environmental flows (to continue the project on recovery of threatened native fish described above).

Detailed projects against each of these activity areas are being developed for approval by the Minister.

The Government is continuing to pursue a Bilateral Agreement with the Australian Government for delivery of funding to the ACT under the National Action Plan for Salinity and Water Quality.

### **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 Future Water options for the ACT and region and draft Environmental Flow Guidelines.

The UMCCC received funding under *Envirofund* to develop fact sheets about wetlands for rural landholders in the upper catchment. Wetlands of the high country and tablelands landscape are not as widely recognised despite high habitat diversity, from upland bogs and fens to lowland backwaters or soaks (often ephemeral), chain of ponds systems and farm dams.

The fact sheets are designed to improve understanding of wetland values and benefits and provide practical advice about on-ground conservation and management of wetlands. Workshops were held with local wetland experts to develop regionally specific content and a community workshop examined practical issues for landholders and landcare groups.

Further funding is being sought to prepare Fact sheets about drought management and recovery that will include advice about water storage and maintenance of ground cover.

## **Waterwatch**

Waterwatch is a community water quality-monitoring 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.

*Waterwatch involves local community groups such as Landcare, Parkcare and Catchment Groups, as well as residents, schools and landowners who regularly monitor the water quality of local creeks, wetlands, lakes, rivers and stormwater drains.*

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*

In January 2003, bushfires 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 site across the ACT. Data collected as part of the CAMPFIRE project and the programs first year report can be found on the Environment ACT web site at:

[www.environment.act.gov.au/yourenvironmenthwp/waterwatchact.html](http://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 and Waterwatch volunteers undertake a yearly Upper Murrumbidgee Frogwatch Census as part of National Water Week activities. 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](http://www.environment.act.gov.au/yourenvironmenthwp/waterwatchact.html)

### *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](http://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.