

# Upper Hunter

## RIVER REHABILITATION INITIATIVE

### UHRRI Update

### No. 4, February 2006

#### **From the Project Manager**

Work has continued apace since our last update, in September – despite a hot, dry summer. In this update we report on the work of postgraduate students, who are now entering the final stages of their fieldwork, and are beginning to present and publish their findings. I'm also pleased to report that substantial progress has been made on compiling the project's spatial data for use in a Geographic Information System (GIS), thanks to the expertise of John Spencer at Griffith University. John has been using ArcGIS (a GIS software package) to process the key spatial



**Ortho rectified aerial photograph mosaic 'draped' over a Digital Elevation Model and rotated to present an oblique view.**

data collected for the rehabilitation and research components of the project. The GIS software enables project scientists to produce graphic representations of spatial data (such as the image above), and to analyse spatially explicit data. This tool will be highly useful as we enter a phase of communicating research findings to the community, scientists, and river managers.

Mark Sanders  
*Project Manager, Upper Hunter River Rehabilitation Initiative*

#### **Revegetation**

Field inspections over the summer have revealed continued survival of most of the estimated 9000 trees that we have established since UHRRI began planting in November 2002. Many of the trees growing in exposed sites are struggling with the drought. However, trees growing among tall exotics such as fennel and willows are generally looking healthy and vigorous, suggesting that, in some circumstances, the benefits of shelter may outweigh the negative effects of competition from exotics.

At Keys Bridge, many trees are now overtopping the weeds, and we look forward to seeing an increasingly forested river margin at this site.

Further revegetation on the UHRRI project site depends on gaining further funding, and to this end UHRRI has a large revegetation bid in with the Hunter-Central Rivers Catchment Management Authority (HCRCA). We also have two 'small project grant' bids in with the HCRCA for autumn tree planting at two 10 ha sites, in collaboration with local landholders. If successful, these bids will allow us to apply what we have learned from previous plantings.

UHRRI staff have identified a remnant stand of mature yellow box (*Eucalyptus melliodora*) on the north side of the Hunter River. Some of the trees appear very old and may have been growing prior to European settlement. Of the 30 remaining trees, about a third are dead and several appear to be in poor condition. Aerial photographs reveal significant dieback at this site since the late 1950s. UHRRI staff are currently working with Bengalla Mine to explore ways to protect and hopefully save the remaining trees, and to jointly undertake further revegetation at this site.



**Remnant floodplain yellow box (*Eucalyptus melliodora*) showing dieback.**

#### **ARC-Linkage Research**

Following a successful pilot study, Ben Wolfenden has begun a large experiment investigating the rate of leaf litter breakdown in the Hunter and Williams Rivers. Ben has been placing hundreds of netted leaf-packs containing leaves from three tree species in both pools and riffles. Ben is comparing river red gum, river oak and willow litter as nutrient and energy sources in an effort to better understand the consequences of rehabilitating stream banks with native trees.

