Expression of Interest for River Frontage Works

The following information is an extract from the *Lower Murray Darling Catchment Management Authority (LMD CMA) 2008, Lower Murray Darling River Frontage Action Strategy, LMD CMA, Buronga,* and is intended to provide further information for land managers who manage a frontage and wish to undertaken protection works.

The Lower Murray Darling Catchment Management Authority (LMD CMA) through Sunraysia Environmental Pty Ltd is seeking Expressions of Interest (EoI) from land managers who mange river frontage in the LMD CMA region and wish to undertake works to further protect and enhance their river frontage.

For more information or queries call Steve Erlandsen, Sunraysia Environmental Pty Ltd 5023 3643.

1. What are eligible works?

A variety of works may be eligible. We are seeking EoI from land managers who wish to address a range of values and threats covering different management units.

2. What is a frontage?

In the context of this River Frontage Action Strategy (RFAS) frontage has been defined as:

"land adjacent to the river that is subject to inundation up to once every two to five years, or a distance of 60m from the top of the bank, whatever is the greatest".

This has been based on natural (pre-water regulation) hydrological patterns and applied not only to the three river systems (Murray and Darling Rivers and Great Darling Anabranch) but also to the major water storages in the system; the Menindee Lakes and Lake Victoria. These frontages typically contain River Red Gum (*Eucalyptus camaldulensis*) woodland or forest. However, in some areas, such as along the Great Darling Anabranch and on higher ground along outside bends of the river, there are areas that contain Black Box (*Eucalyptus largiflorens*) woodlands.

3. Eligible areas

The RFAS covers the river frontages of the main stems of the Murray and Darling Rivers and the Great Darling Anabranch within the Lower Murray Darling (LMD) Catchment.

4. Values of frontages

River frontages have a number of ecological, cultural and economic values. The key values identified for frontages along the Murray and Darling Rivers and the Great Darling Anabranch are:

Biodiversity:

- Frontages generally support a higher diversity of flora and fauna than terrestrial systems due to their proximity to water. In the LMD Catchment river frontages support over 450 species of plant and 350 species of animal including a large number of threatened flora and fauna.

River health and water quality:

- Frontages affect river health by shading the river channel, providing food and habitat for aquatic fauna, decreasing erosion and filtering sediments, nutrients and contaminants from overland flow.

Cultural significance and economic value:

- Frontages hold customary and cultural rights and values for indigenous communities such as access for fishing and hunting, management of significant sites and spiritual connections.
- Frontages also have important economic and social values for non-indigenous ccommunities such as agricultural productivity, feed and shelter for livestock, recreational and tourism values and heritage.

5. Threats to frontages

Frontages are threatened by activities undertaken in the catchment (and beyond) and by processes brought on by these activities. Arguably the greatest threat and impact to frontages has been and continues to be from water regulation. Water regulation and altered flow patterns within river channels (both those used as delivery systems and those from which water is diverted) is a significant threat to river frontages.

The Murray and Darling Rivers and the Great Darling Anabranch are regulated systems and the two major lakes covered by the RFAS (Menindee and Victoria) are utilised as water storages. This has lead to a dramatic decrease in mid-range floods in the river systems and a corresponding decrease in inundation of frontages. At the major water storages (and weir pools) the situation is reversed with increased permanence of inundation causing erosion and vegetation decline within frontages, and salt storage in the floodplain.

Threatening processes that have been identified for frontages in the LMD Catchment include:

- Water regulation and over allocation of water entitlements
- Grazing
- Native vegetation clearing
- Development
- Recreation
- Cultivation
- Firewood collection

Threatening processes within frontages that result from the above activities include:
- Weed invasion
- Pest animals
- Erosion
- Salinity
- Drought

Impacts to frontages resulting from all of the above include:
- Habitat loss
- Reduced biodiversity
- Loss of connectivity
- Reduced vegetation condition
- Loss of amenity
- Damage to cultural sites
- Economic loss

6. Management Units

Management Unit 1: Grazing

The greatest proportion of riparian land across the catchment occurs on grazing land, both freehold and Western Lands Lease. Managing riparian condition on grazing land is, therefore, a high priority if the LMD CMA Catchment Action Plan (CAP) objectives are to be met.

Key considerations:
- Largest management unit comprising nearly 80% of the river frontage in the study area.
- While mature overstorey (tree) cover has changed little from pre-European times, the regeneration of new stands (since those times) has been affected by post-European practices, thus affecting the density and extent of overstorey. Shrub and ground cover have changed significantly since pre-European times.
- Riparian land is valuable economically as an access point for stock watering as well as the provision of shade and grazing to animals.
- Riparian land on grazing properties has a value in erosion control and maintenance of biodiversity.
- The greatest threat to river frontages on grazing properties is increased weeds and pest animals.

Management Unit 2: Forestry

This management unit encompasses not only designated State Forests but also all of the Western Lands Lease areas that are considered Crown-timber lands. Information relating to timber harvesting on private land has not been sourced at this point in time.

Key considerations*:*
- State Forests (which are managed for both conservation and economic values) comprise 12% of the study area. However, Crown-timber lands occur on all Western Lands Lease and this is a large proportion of the frontages (an additional 40 – 50 %).

- Forests NSW controls harvesting on Crown lands and operations must comply with the Forest Practices Code for Timber Harvesting in Native Forests.
- The community considers that logging is not currently a major threat but should be monitored in the future.
- Native vegetation clearing can result in a loss of traditional medicines and food plants.
- Firewood collection results in lost habitat for wildlife.

Management Unit 3: Major Water Storages

Lake Victoria and the Menindee Lakes have been operated as water storages for over fifty years, which has resulted in the death of River Red Gum and Black Box trees in the lakebeds and impacts to shorelines and the cultural assets located within them. Management of the storages is primarily under the MDBC and is focussed on water supply. As such there is little latitude for management of these systems through the LMD CMA.

Key considerations:

- The major impacts of water regulation on lake frontages are:
    - regulation of water levels which results in increased erosion;
    - decreased inundation of littoral vegetation; and
    - salinity impacts.
- The lake frontages of both of these water storages contain significant indigenous cultural assets, including burial sites.
- Management of water levels such as rapid rates of rise and fall have resulted in erosion and threats to cultural and ecological values.

Management Unit 4: Conservation

This management unit includes not only national parks and designated nature reserves but also smaller reserves (public and private) that contain native vegetation and are managed for either conservation or recreation purposes. In addition, areas such as the reserve adjacent to Lake Victoria that are managed for cultural conservation purposes, have also been included.

Key considerations:

- Approximately 5% of the river frontage in the study area is managed for conservation and/or cultural purposes in the form of National Parks and conservation reserves.
- Almost a quarter of the frontage around the Menindee Lakes and 8% of the Darling Anabranch frontage are contained in conservation zones.
- The river and lake frontages within Kinchega National Park, Lake Victoria and other conservation reserves contain significant indigenous and non-indigenous sites of cultural significance.
- Impacts (other than for water regulation) are predominantly related to recreation activities and can include vehicle damage, firewood collection and litter.

Management Unit 5: Cropping and Horticulture (dryland and irrigated)

This management unit comprises both cropping and horticultural activities and includes dryland as well as irrigated properties. Although the LMD CMA currently has an incentives program in place for irrigation properties, which encourages the adoption of Best Management Practices (BMPs), this program does not specifically address management or maintenance of frontages.

Key considerations:

- Relatively small management unit that comprises less than 2% of the river frontage in the study area.
- The majority of cropping and horticulture in the river frontages occurs along the Murray River upstream of Wentworth, and along the lower Darling River at (Pomona).
- Riparian land is valuable economically as an area of high fertility.
- Access to cultural assets on private land makes traditional responsibility for land difficult.
- New developments pose threats to cultural assets without site surveys and site management plans.

Management Unit 6: Urban

Historically, the Darling and Murray Rivers were important transport routes and water sources and so it is hardly surprising that the major townships in the catchment occur along the rivers.

Key considerations:

- Relatively small component of the river frontage, comprising less than 1% of total; located in "centres" of Menindee, Wentworth, Dareton, Buronga, Gol Gol and Euston.
- Riparian land is valuable for recreation and tourism in urban locations as it provides access to water supply.
- The greatest threats to river frontages from urban development are:
    - increased weeds and pest animals; and
    - native vegetation clearing.
- Power boats in the river and moorings for house boats also threaten riparian condition as they cause bank erosion.