ECO WATCH
by Eugene Kruger

REMEDIATION PROGRAMME ANNOUNCED FOR HARTBEESPOORT DAM
The Department of Water Affairs and Forestry (DWAF) in conjunction with the North West Department of Agriculture, Conservation and Environment (NWDACE) is instituting a remediation programme to improve the quality of water in the Hartbeespoort Dam.

Work has already commenced to clear the dam of toxins and although the sewage spill late last year into the dam hampered progress, the Remediation team and Madibeng Local Municipality, responsible for water supply in the Hartbeespoort area, worked closely together to manage the effects of the spillage.

The Remediation programme calls for the investigation of different aspects to improve water quality at the dam. Various activities have been identified, which include developing a Resource Management Plan (RMP), controlling and removing algae on the dam, pre-impoundment and treatment options upstream of the dam basin, long term monitoring of the water quality, sediment removal and the reduction of the inflow of phosphates and nitrogen. The fish population is also being considered, restoring the shoreline vegetation as well as rehabilitating the wetlands.

DWAF’s Project Leader Petrus Venter says that it is important that the remediation programme serves as a model for sustainable water resource management. “Through this project initiatives will be integrated that include physical, chemical and biological action plans to ensure the dam is free from toxins”, he states.

It is estimated that the cost for the remediation programme will be in the vicinity of R35 million. According to Venter the programme will break new ground as nowhere has such an integrated approach been followed. The activities to be implemented will not only restore the balance in the dam, but will also be a major source of employment creation around the Hartbeespoort area.

While one of the practical steps being taken is the restoration of shoreline vegetation and the introduction of floating wetlands, at the core of the programme is utilising the existing fish stocks. A fish survey shows that the dam is dominated by three fish species, namely carp, catfish and canary kurper, and a profitable fishery is to be established to manage these stocks.

The problem is that the carp eat the whole food chain, namely the zooplankton and also the Daphnia (also called the freshwater flea), which are known to feed on algae. Carp also eliminate the riparian vegetation, which is important for the small fish species to survive. Both the carp and the catfish stir up the sediment that in turn enhances algae growth. These fish species will therefore have to be eliminated in order to give others such as the Tilapia a chance to breed.

There are examples of impoundments that have higher phosphate levels than Hartbeespoort Dam that do not have algae problems because those dams have healthy populations of Daphnia, grass and shoreline vegetation.

Additional practical actions include erecting booms that will assist with the physical removal of the algae and the water hyacinths, while the compost that will be produced by harvesting the algae, hyacinth and sediment, will allow the breeding of earth worms to be used as high protein feed for aqua and agriculture. Fly-fishing as a major income source derived from tourism is also under investigation.

The implementation of the Hartbeespoort Dam Remediation Programme will require approximately three years to reach its targets.

The general public will have an opportunity to review the second draft RMP and provide comments in February 2008.