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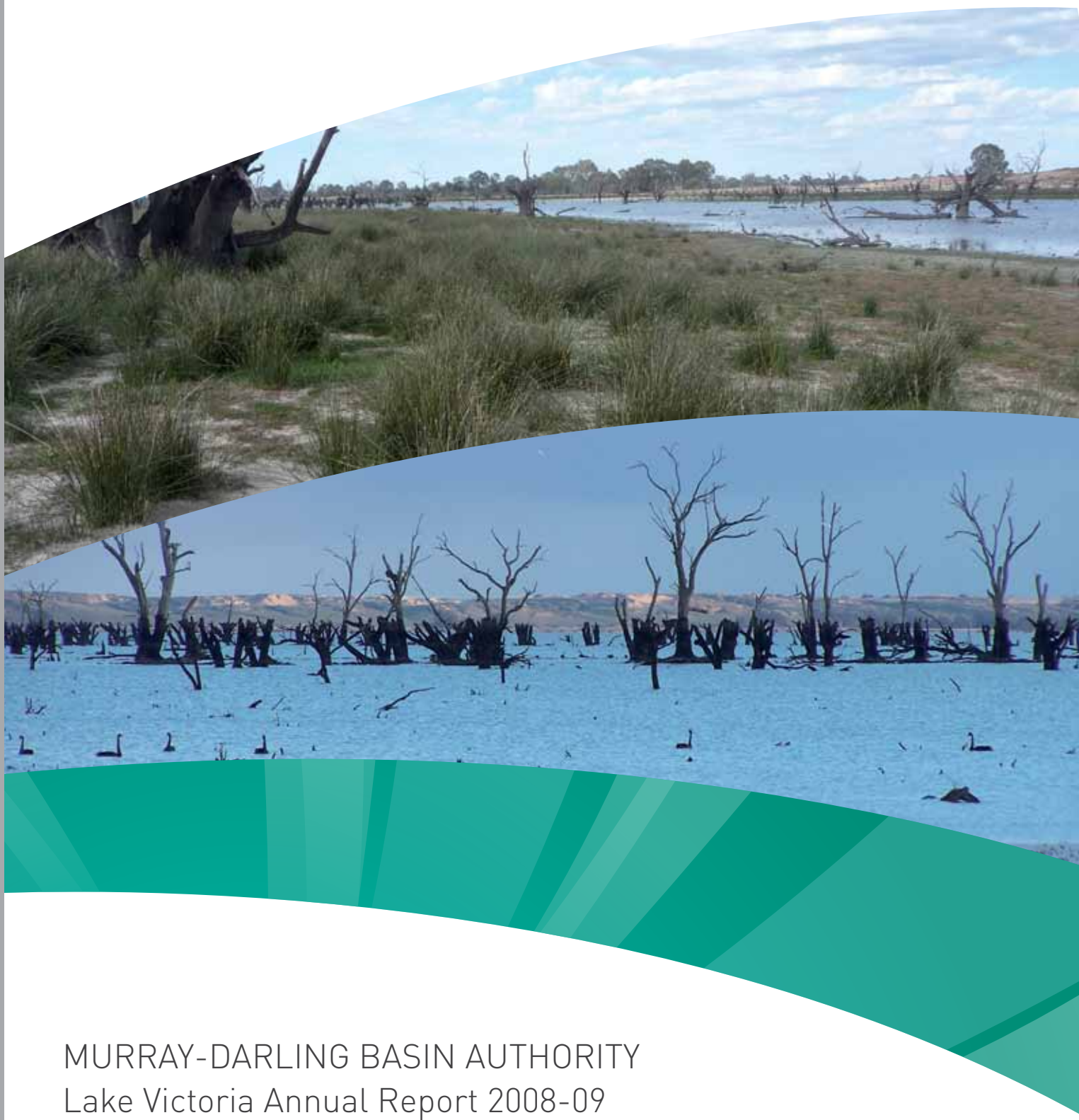
MURRAY–DARLING BASIN AUTHORITY



MURRAY-DARLING BASIN AUTHORITY
Lake Victoria Annual Report 2008-09

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Please be aware that this document contains the names and images of deceased Indigenous people. The Murray-Darling Basin Authority strives to treat Indigenous culture and beliefs with respect. We acknowledge that to some communities, it is distressing and offensive to show images of people who have died.

Front cover photos courtesy of Digby Jacobs and Wayne Stephenson.

TABLE OF CONTENTS

ABOUT THIS REPORT

Lake Victoria is a naturally occurring shallow freshwater lake approximately 60 kilometres downstream of the Murray-Darling Junction in south-western New South Wales, close to the South Australian and Victorian borders. Since 1928, Lake Victoria has been operated by the Murray–Darling Basin Authority (MDBA) as a regulated, off-river storage as part of the River Murray System. Lake Victoria is owned and operated by the South Australia Water Corporation (SA Water), on behalf of a joint venture comprising the Australian, New South Wales, Victorian and South Australian Governments. SA Water's program of works is funded and directed by the MDBA on behalf of the four asset controlling governments.

Regulation of the Lake over the last 70 years has contributed to the erosion and exposure of Aboriginal cultural material on the lakeshore and surrounding cliffs, in particular Aboriginal burial grounds. Since 1994 substantial works have been built to protect all known burials from wave and wind erosion, and an Environmental Impact Statement (EIS) was prepared to support an application under Section 90 of the *National Parks and Wildlife Act 1974* (NSW) to allow continued disturbance of non-burial Aboriginal objects by regulation of the Lake.

The following annual report focuses on those activities that have been carried out against each of the Conditions contained in the Section 90 consent. Satisfactory completion, partial completion and non-compliance with the Conditions of Consent have been reported via use of ticks and crosses in the compliance tables. A tick and cross together indicates partial compliance.

The annual report contains excerpts of several different reports published on the work undertaken on Lake Victoria during the reporting period. These excerpts contain summary tables only, and relate directly to how these monitoring activities address requirements of the Section 90 Consent.

Further information on any of these reports will be provided upon request.

Tom Smith

FOREWORD

As chairperson of the Lake Victoria Advisory Committee (LVAC) I am pleased to submit the Annual Report covering the year ended 30 June 2009.

Cultural heritage management at Lake Victoria is an example of productive working partnerships between the Murray–Darling Basin Authority (MDBA), the NSW Department of Environment, Climate Change and Water (DECCW), South Australia Water Corporation (SA Water), NSW Office of Water (NOW) and local Indigenous groups and landholders. The traditional owners for the area, the Barkindji and Maraura people, have always considered cultural heritage management to be part of their ongoing cultural obligations to caring for their country.

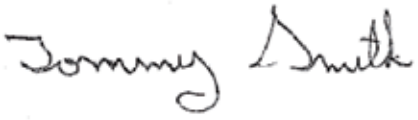
The Barkindji Elders Council (BEC) discusses cultural heritage management issues within and outside of the consent area of Lake Victoria. As a result of these deliberations the Council provides advice to MDBA and DECCW through the LVAC on cultural heritage management matters within the consent area and on MDBA properties surrounding Lake Victoria. Advice has been provided on issues such as: access protocols to the Lake, employment and training opportunities, cultural heritage protection works, associated land management practices, the BEC 'camping area', the Lake Victoria Information Bay, and the Aboriginal Keeping Place for salvaged artefacts from the area.

The recently formed Scientific Review Panel has a major role in the review of monitoring and reporting of the cultural and environmental landscape. The information gathered to date has formed base line data on cultural heritage, sediment movement and vegetation. This data provides an invaluable guide for cultural heritage management strategies and also informs future directions in monitoring cultural heritage at Lake Victoria.

Two traineeship positions have been created under the umbrella of the Aboriginal Employment Strategy. The trainees receive training and certification in cultural heritage and land and water management. These positions are supported and guided by the BEC, the Lake Victoria Cultural Heritage Manager and the Cultural Heritage Field Officer.

The Cultural Landscape Plan of Management requires that the LVAC meet three times per year. At an LVAC meeting in December 2008, the BEC presented a number of issues which needed to be addressed for amicable participation in the LVAC. The LVAC acknowledge the important BEC issues, and recognise the need for effective communication amongst all stakeholders involved in cultural heritage management at the Lake. A renewed commitment to cooperation and ongoing BEC participation in the LVAC was reached at an October 2009 workshop.

The MDBA continues to aspire to setting a best practice model for cultural heritage management at Lake Victoria. The continued individual and group input in conjunction with the productive partnerships which have been built up, can only facilitate ongoing positive outcomes for all stakeholders.



Tommy Smith
Chairperson
Lake Victoria Advisory Committee

STATEMENT OF THE STATUS OF CULTURAL HERITAGE AT LAKE VICTORIA

Reporting period 2008-09

Given the current low lake levels experienced around Lake Victoria during this reporting period, burial protection targets are largely met via implementation of on-ground protection works and monitoring programs. In keeping with the spirit of the Plan of Management, employment opportunities have been created through the Lake Victoria traineeship and casual works programs to support on-going burial protection work activities. Cultural heritage, including burials, which are located between 24–25.5 AHD, and within cliffed shorelines are at most risk from wind impact, especially in the middle and northern sections of the Talgarry Barrier, Snake Island, and on the Eastern and Northern shorelines. From a management perspective these geographical areas should now be of greater focus for the protection of cultural heritage, and should be routinely monitored via a structured cultural heritage monitoring program in partnership with the Barkindji Elders Council. This in turn will enable development of future burial protection works programs.

Michael Gilby
Manager
Cultural Heritage

Barkindji Elders Council (BEC) members gather at the Gerard Community Council in SA for a BEC meeting
Photo curtesy of Greg Warren
Permission to use photo was granted by Noel Johnson on 12 November 2009

SNAPSHOT VIEW OF THE 2008-09 REPORTING YEAR

Burial Protection works

- The total number of new burial sites protected and recorded in 2008-09 was 16, bringing the total number protected under the program to 163.
- Six existing burial sites were replenished on Talgarry Barrier and near the Control Regulator at old Frenchmans Creek in the Southern Lake bed.
- Extensive salvage works were undertaken along the confluence of old Frenchmans Creek.
- The replenishment of five existing burials occurred on Talgarry Barrier, and another burial was repaired near the Control Regulator at old Frenchmans Creek.

Cultural objects

- The Scientific Review Panel began developing a `structured monitoring program' for the recording of cultural objects over time in association with the erosion and vegetation monitoring programs.
- The monitoring of scarred trees on the Southern Lakebed was undertaken by Barkindji Elder Council (BEC) and Lake Victoria cadets in February 2009.

Lake Victoria Advisory Committee (LVAC) and Community Relations

- There was one LVAC meeting, two informal LVAC meetings, and two Lake Victoria Working Group meetings held within the reporting period.
- Consent Condition 2 requires three LVAC meetings to be held each year. The former Department of Environment and Climate Change (DECC) now Department of Environment, Climate Change and Water (DECCW) approved continued operation of Lake Victoria while the MDBA and the BEC continued to negotiate, with the aim of resolving issues and re-establishing a positive working relationship to allow LVAC meetings to continue with a quorum of BEC members.
- The BEC held four meetings over a five day period, with another meeting held between the BEC, MDBA and Lake Victoria Chairperson.

Aboriginal involvement at Lake Victoria

- Two Aboriginal Lake Victoria cadets were appointed in November 2008. The MDBA is committed to continued support for this training and employment program.
- There are now four Aboriginal workers employed at Lake Victoria. The BEC Facilitator is also employed by the Department of Water and Energy (now the NSW Office of Water) in Buronga.
- The cultural heritage protection works program in May-June 2009 involved casual employment of three Aboriginal community members from the Riverland community.
- BEC Elders were provided on site guidance throughout the cultural heritage works program throughout May and June 2009. They also provided mentor advice to the cadets and Aboriginal workers throughout the year.
- BEC members were involved in numerous cultural heritage assessments and cultural heritage awareness training programs throughout the year.
- Six Aboriginal youths were employed by a contractor to build the Noola riparian fence along the Western boundary of the Lake. Members of the BEC were also involved in cultural heritage monitoring for this project.

Reporting

- A new Annual Report contribution template was developed to clarify the process required to develop each Annual Report with the relevant contributors.
- The 2007-08 Annual Report was provided to DECC by April 2009 after the new MDBA style format was incorporated.

Scientific Monitoring

- Dr Ian Sluiter reported that vegetation at higher elevations, especially on Talgarry Barrier, has declined due to lack of floodwaters over the past four years.
- River red gums on the Western margins of Lake Victoria at approximately 27m AHD are also showing signs of poor health, with a native parasite called `mallee strangle vine' evident as a symptom of poor tree health.
- Dr Wayne Stephenson conducted two shoreline assessment surveys and reported that there is significant erosion occurring along the Eastern foreshore from 25–28 PS, and on the Talgarry Barrier transects numbered 3 and 4 (refer to Maps 5 and 6 on pages 31 and 32).
- Results of shoreline monitoring indicate that both wind and waves act as important drivers for erosion.
- A soil salinity investigation was undertaken of the Eastern lake bed with soil samples taken to a depth of about 1.3 m for analysis of soil salinity, pH and soil moisture. Results showed an increase in soil salinity of the soil profile at lower elevations, however g.w. levels have fallen as a result of lower Lake operating levels since 2006.
- The Lake Victoria Scientific Review Panel met twice, reviewed the 2007-08 scientific monitoring reports, and progressed the review of the scientific monitoring program.

Communication and Access

- Representatives of the BEC travelled to Canberra to meet linguist Luise Hercus to learn about the Barkindji/Maraura traditional language and to undertake research about Lake Victoria at the Australian Institute of Aboriginal and Torres Strait Islander Studies (AITSIS) as part of the Information Bay project.

Revegetation

- Nulla Station was purchased in December 2008 by the NSW Government on behalf of the MDBA. This has allowed permanent destocking of the Nulla foreshore which, together with a feral animal control program, should allow revegetation to occur in this area.
- The Lake Victoria greenhouse is being used for propagation and re-vegetation projects. Staff have undertaken training in propagation, soil preparation, seed collection and chemical application at TAFE.

Land Management

- With the Lake operating at lower levels, the management of weeds has altered. Noogoora burr is requiring fewer resources to manage, while golden dodder and other weeds such as Scotch thistle and deadly nightshade are becoming more prevalent. Golden dodder has been recorded at more than 400 individual locations on the South Western foreshore.
- The Lake Victoria Management team has established two new rabbit transects in the Noola riparian management zone, with monitoring and baiting undertaken along these transects, together with the established `Snake Island' transect.
- The NSW Department of Water and Energy has continued to implement rabbit control programs on Nulla Station, along the Eastern foreshore of Lake Victoria, in liaison with the landholder and to the west of the riparian buffer zone on Noola.

Lake Operations

- In May 2009, lake levels were the lowest level at 21.81 m AHD (140 GL, 21% capacity) since the lake was drawn down to 21.51 m AHD (129 GL, 19 % capacity) in July 1999. The highest level was reached in early January 2009 at approximately 24.15 m AHD (360 GL, 53% capacity).
- Lake operations were in accordance with the Lake Victoria Operating Strategy, which has over time provided opportunity for vegetation establishment due to the enhanced drying cycle.
- Continued dry conditions continue to demonstrate the importance of Lake Victoria for Murray River operations, and for the supply of water to South Australia.

Impacts outside of the lake

- Nulla Station was purchased on behalf of the MDBA in December 2008.
- The MDBA continues to negotiate with surrounding landholders in relation to salinity impact and cultural heritage protection.
- The BEC Facilitator worked hard to ensure that linkages between Lake Victoria management and other regional planning processes, such as The Living Murray Program (TLM) and Murray Lower Darling Rivers Indigenous Nations (MILDRIN) are maintained and continually improved.

LAKE VICTORIA ADVISORY COMMITTEE AND COMMUNITY RELATIONS

(Consent Conditions 1–11)

	Compliance Response ✓
Lake Victoria Advisory Committee  **Concept Design for Interpretation Bush Food track as part of the Lake Victoria Landscape Blueprint Design** By Design 5	• In the 2008-09 reporting period, there was one official LVAC meeting held in December 2008 (LVAC 55). • Informal meetings were also held in July 2008 (LVAC 54) and in April 2009 (LVAC 56) due to a lack of quorum on the day, as per Consent Condition 6. • Lake Victoria Working Group meetings were held in July 2008 and April 2009. • Three LVAC meetings should be held every year to satisfy requirements of Consent Condition 2 and actions prescribed within the Plan of Management. • The MDBA sought and received approval from the DECCW to continue to operate the Lake for water storage purposes in the interim period while the MDBA continued to negotiate with the Barkindji Elders Council (BEC), with the aim of reaching agreement and continuing LVAC meetings. • A works program at the Lake was completed to ensure that meeting facilities are functional and pleasant. Works consisted of an upgrade to the office, an extension of the meeting room, new furnishings, a new water filtration plant and first aid room, additional verandas and car ports, and landscaping to the grounds. • A Landscape Blueprint and Concept Design was developed for the proposed Lake Victoria Meeting Place / Keeping Place, by architect Alan Croker of Design 5. • A draft Lake Victoria Advisory Committee Code of Conduct was prepared by the Lake Victoria Deputy Chairperson Dr Jane Lennon, for consideration by the BEC and LVAC.
BEC meetings and BEC involvement at Lake Victoria  **BEC members inspect cultural heritage on Talgarry Beach** Courtesy of Mike Gilby	• There were four BEC meetings supported by the MDBA within the 2008-09 reporting period (July, November 2008, March and June 2009). The meeting in July extended over a two day period. The MDBA provides for five BEC meetings on an annual basis. • In August 2008, BEC members met with MDBA representatives and the LVAC Chairperson to discuss issues related to `Technical Experts' fee payments, meeting procedures and Lake Victoria roles and responsibilities. • Two BEC Elders per day guided the cultural heritage works protection program throughout May and June 2009. The BEC Elders participated as monitors and mentors to advise the Aboriginal youths and cadets. • May Johnson, Lottie Williams and Brian Carter visited Lake Victoria for a `monthly inspection' with the BEC Facilitator in February 2009.

	Compliance Response ✓
BEC meetings and BEC involvement at Lake Victoria *(continued)*  BEC Members Lottie Williams and May Johnson participate in monitoring at the Lake **Photo courtesy of Greg Warren**  **Luise Hercus assists BEC members translate into Barkindji/Maraura language** Photo courtesy of Greg Warren	• Members of the BEC were also involved in the assessment of river red gum tree health and various works programs such as the dam safety upgrade, core sampling on the Eastern foreshore, the Scaddings Bridge pillion upgrade and an assessment of a new house at the Lake Victoria Storage (LVS) site. • Eight BEC representatives and four BEC proxy representatives undertook cultural heritage monitoring of the Noola riparian fence line project between September and October 2008, with an approved Section 87 and 90 under the *National Parks and Wildlife Act 1974* (NSW) being adhered to. • In October 2008, SA Water facilitated a cultural heritage induction for members of LVAC. BEC Elder Ray Lawson advised the participants of the cultural significance of the region. • In addition, BEC Elders assisted with cultural heritage inductions of visitor groups throughout the year, and as part of the annual burial works protection program, the LVS cadets were inducted in May 2009. • In April/May 2009 three BEC members, the BEC Chairperson and the Facilitator undertook a MDBA supported trip to Canberra to visit linguist Dr Luise Hurcus. Luise advised BEC members on the translation of words into Barkindji/Maraura traditional language for the Information Bay `Statement of Significance' sign. • While in Canberra, BEC members also visited the Australian Institute of Aboriginal and Torres Strait Islander Studies to view archive materials on Lake Victoria history, and to investigate family names of ancestors. • The BEC Facilitator met with BEC Information Bay subcommittee representatives twice to discuss information gained from the Adelaide Museum and Library. • The total funding paid to the Lower Murray-Darling Catchment Management Authority (LMD CMA) to support the BEC via the BEC Facilitator program was $152,400. • The amount of $79,386.48 was paid via the MDBA to support the BEC in payment of Technical Experts' fees and travel costs. • In addition, the MDBA paid $5,753.88 via the NSW DWE to facilitate consultation within the Lake Victoria region.
Lake Victoria Working Group Meetings	• There were three Lake Victoria Working group meetings held within this reporting period. These meetings were held in July 2008 and April 2009, with another working group meeting occurring in April 2009 instead of the scheduled LVAC meeting.

	Compliance Response ✓
Landholder communication	• An extension of the pump system on Frenchmans Creek, which feeds the Dunedin Park and Talgarry Station watering systems to ease grazing pressure on the Lake Victoria foreshore, was undertaken in liaison with the landholder. • The Lake Victoria `Access Protocol' was followed when SA Water required access to areas on the North Eastern Beach and foreshore during May to undertake burial protection works. • The MDBA welcomed comment by Mr Warren Duncan on the 2007-08 monitoring reports, and subsequently responded to issues raised by Mr Duncan via letter in February 2009.
Employment of Aboriginal workers at the Lake  **LVS cadets, Jordan and Wade** Photo courtesy of Mike Gilby	• In September 2008, an interview panel consisting of two BEC members, the Lake Victoria Cultural Heritage Assistant (SA Water) and the Youth Recruitment Coordinator (SA Water) selected two Lake Victoria cadets. The successful candidates were Jordan Kelly and Wade Stidiford, who began work in November 2008. • Jordan and Wade will undertake 18 months of `Conservation, Land Management' training at certificate two level through the Sunraysia Institute of TAFE. After this period they will be offered certificate two level training with the Regency TAFE Campus in Adelaide in `Water Industries' for a further twelve month period. • The MDBA has committed to continuing the Lake Victoria cadetship/ traineeship program beyond this three year pilot. This will result in further recruitment of cadets to fill vacancies as they arise. • The total number of Aboriginal workers employed at Lake Victoria, with the addition of the cadets is now four. In addition the MDBA supports the position of BEC Facilitator within the NSW Office of Water. • Three Aboriginal community members from the Riverland community in South Australia were employed on a casual basis to assist the cultural heritage management team implement the cultural heritage protection works program in May-June 2009. • Six Aboriginal youth, three from the Gerard community and three from Wentworth/Dareton, were employed by a fencing contractor to build the Noola riparian fence. The youth received training certification for their participation through TAFE.

	Compliance Response ✓
Sharing of Information with the broader community	Cultural heritage induction pro forma sheets are being used to induct all visitors to Lake Victoria. The groups who visited within this reporting period were: • A pre-medical student group from Monash University in October 2008. • The NSW Heritage Council in November 2008. • DECC (Paul Spiers) visited to undertake an assessment of gully erosion on the Northern foreshore in November 2008. • A presentation overview was given to the SA Water dam safety project team on cultural heritage values of Lake Victoria Storage in November 2008. • The Colleambley irrigation group visited in October 2008.

CULTURAL LANDSCAPE PLAN OF MANAGEMENT

(Consent Conditions 12-37)

	Compliance Response ✓ and ✗
Plan of Management (cc 12–17)	• The Plan of Management was not formally reviewed and adapted as Consent Condition 14 requires. However the Plan of Management was last reviewed in March 2008 as part of the formal review process, and amendments to the new `glossy version' will be undertaken within the next reporting period. • Approval was given at LVAC 55 to amend the Plan of Management Reporting according to recommendations within the 2007–08 Annual Report.
Reporting Processes (cc 18)	• A new Annual Report Template was completed to help to guide and simplify the process each year. • The draft 2007–08 Annual Report was submitted to LVAC members at least two weeks prior to the final LVAC meeting of 2008 (LVAC 55). • LVAC 55 approved suggested alterations to the reporting timetable to allow for a one month extension of time for submission of the Annual Report to DECCW. This was then approved by DECCW. • Feedback from LVAC members on the draft report were obtained by the 10 December 2008. • The finalised Annual Report was provided to the Director General of DECC by April 2009 after an extension of time was granted to allow for the new MDBA style formatting to be incorporated.
Communication and Access Strategy (cc 20)  **Aboriginal trainees learning to wire the Noola riparian fence** Photo Courtesy of Lyn Barnes	• The BEC approved the words for the `Statement of Significance' sign to be constructed at the entrance of the Information Bay site. These words will be written in both English and Maraura / Paakantyi languages. • Visitor numbers appear to be on the increase at Lake Victoria with the information bay being the hub that provides visitors a scenic view of the Lake, and of the Southern Lake Bed. • Access controls to the Western side of Lake Victoria were assisted with the construction of the Noola riparian conservation reserve fence line.

	Compliance Response ✓ and ✗
Strategies for Revegetation (cc 21)  **Seed collection activities with Sunraysia TAFE** Photo courtesy of Mike Gilby	• In December 2008 the NSW Department of Water and Energy (now NOW) purchased Nulla Station on behalf of the Murray Darling Basin Commission (now MDBA). With removal of stock from the Nulla foreshore, total grazing pressure of the foreshore will be reduced in line with Consent Condition 21. Natural regeneration should occur over time, as was witnessed when stock were removed from the Noola foreshore. • Plant tubestock was directly planted at strategic sites where gaps in the vegetation were identified on Snake Island. • A revegetation and erosion control project was undertaken on the Noola access track. Tubestock was planted on scalded areas, gullies were rock sheeted and jute matt logs were strategically placed. • On the Noola foreshore, direct planting of tubestock was undertaken on an existing re-vegetation trial plot. • Vehicle access to the above areas was established to enable watering of the plants during the initial summer period. • On the 8 December 2008, Dr Ian Sluiter and the Lake Victoria Program Manager visited the Nulla foreshore and discussed revegetation strategies. Dr Sluiter recommended harvesting and distribution of vegetation heads of spiny sedge and manual planting of sections of spiny mud grass to assist regeneration of the two most important species for binding sand around Lake Victoria. Dr Sluiter provided advice about how this can be easily undertaken. • A riparian conservation reserve fence line was constructed in October 2008 to ensure that stock are permanently removed from the Western foreshore of Lake Victoria.
Research Activities (cc 22)  **Participants of the Biodiversity mapping project** Photo courtesy of Greg Warren	• The BEC Elders participated in a Biodiversity Cultural Vegetation Mapping project with the LMD CMA in May and October 2008 on MDBA purchased lands in the Lake Victoria region.

	Compliance Response ✓ and ✗
Review Panel (cc 23–26)  **David Tongway inspects the `services' provided by a spiny sedge plant as it acts as a wind drag element in the landscape** Photo courtesy of Lyn Barnes	The MDBA provided resources for the Lake Victoria Scientific Review Panel (SRP) to undertake the following activities: • On the 7 July 2008, members of the SRP visited Lake Victoria. • On the 10 December 2008 the panel met to peer review the 2007–08 Annual Monitoring reports and to progress the review of the Lake Victoria Scientific Monitoring Program. • As part of peer review process of the reports, the SRP members provided written feedback to the MDBA. This feedback was then provided to the authors. • The following management actions were undertaken under the guidance of the expert SRP: 1. Resurvey of the existing height of the Snake Island Wave Barrier to determine if it requires maintenance. 2. Development of design specifications for an anometer with an automatic logger to be installed at the southern end of the Lake to capture quality wind and weather data to assist interpretation of erosion monitoring results. 3. Development of a `Storm Event' monitoring program with triggers and required responses identified by Dr Wayne Stephenson to further inform erosion monitoring analysis. 4. Development and use of `Archaeological Monitoring Data Record Sheets' for use by the Cultural Heritage Management team and the BEC when recording Aboriginal objects in the field. These sheets will be utilised as part of an improved `Structured Monitoring Program' being developed under the guidance of the SRP, BEC and the Cultural Heritage Management team. 5. Arrangements for a Lake Victoria Scientific Review Workshop, to be held within the next reporting period. 6. The identification of requirements for analysis of existing data sets.

	Compliance Response ✓ and ✗
Monitoring Cultural Heritage and Monitoring Burial Protection Works **(cc 27-29)**  **BEC members and cadets monitor scar trees and use the new cultural heritage template** Photo courtesy of Mike Gilby   **Before and after protection works at Dunedin Park** Photos courtesy of Mike Gilby	• The works crew commenced stage one of the cultural heritage protection works program on Duncan's corner on the 18 May 2009. Stage two followed in May and June, with works undertaken on the Snake Island cliffed areas and Talgarry Barrier. • The total number of new burial sites protected and recorded in 2008-09 was 16, bringing the total number protected under the program to 163, with: – Eight recorded on `Duncan's corner' – Six at Snake Island – One at Talgarry Wells on the lunette – One on the Nulla lunette • Six existing burial sites were replenished on Talgarry Barrier and near the Control Regulator at old Frenchmans Creek in the Southern Lake bed. • Extensive salvage works were undertaken along the confluence of old Frenchmans Creek. • The burials located outside of the existing consent area on Duncan's Corner and on the Nulla lunette were protected in liaison with the DECC, and written approvals were given to undertake works on these sites using existing methods. • The cultural heritage management team surveyed the shoreline on a monthly basis, checking for newly exposed burials. • Gary Schultz from SA Water completed the `Lake Victoria Aboriginal Cultural Heritage Report 2008, V2A – Talgarry Barrier'. This report follows V1 both of which summarise the results of survey to identify and confirm the status of sites identified in initial 1990 surveys, as conducted by Dr. J. Hope. These reports also contain information about all sites recorded since that time. • A contract brief has been developed to progress development of the Aboriginal Cultural Information Database. • It is envisaged monitoring the condition of known burials will be simplified using a simple data sheet developed by MDBA to support BEC monitoring activities.


Left after protection works on Snake Island and right, on Talgarry Wells
Photos courtesy of Mike Gilby

UNDERSTANDING, ASSESSING AND MONITORING THE ENVIRONMENT, IMPACTS AND MITIGATION ACTIONS (CONSENT CONDITIONS 27–37)

Section 90 Consent and Compliance Response for Erosion Monitoring at Lake Victoria (NPWS 2006)

By Dr Wayne Stephenson (University of Melbourne)

Erosion Monitoring Consent Conditions	Compliance Response
Condition 27: The CLPoM will contain strategies for monitoring cultural heritage, the impacts of erosion, deposition, saline groundwater and salinity on the Lakeshore, particularly targeting recording the condition, protection and monitoring of known and newly discovered burials, and of any sites identified as being of special significance, according to measures described in detail in the section 87 permit.  **Monitoring Shoreline Change January 2009** Photo courtesy of Dr Wayne Stephenson	Thirty seven transects, some established as early as 1998, are surveyed annually for the purpose of monitoring erosion and protection work performance. The majority of transects are located in areas of high cultural value. In 2009 these transects were surveyed twice to capture change associated with both wind erosion when the lake is low and wave erosion when the lake is closer to full storage. The more notable results of survey show that: 1. Significant erosion has occurred in historically undisturbed sediments during the 2008-09 monitoring period on 28PS. 2. Erosion on 25PS continues to present concerns. 3. Two profiles on Talgarry Barrier, TGB 2 and TGB 3 also present some concerns as these continue to experience erosion, some of which is historically undisturbed sediments. 4. Therefore surveys of cultural material on these profiles should be undertaken to determine if any material is being threatened or damaged. 5. Initial (2007–08) results suggested that both wind and wave are important drivers of shoreline change at Lake Victoria, causing erosion and accretion at the same order of magnitude. 6. It has been possible to quantify the impact of wind on the shoreline and it has been shown that wind causes erosion and deposition of sediment at the same order of magnitude as waves had in previous years when the Lake levels were high enough to inundate the shoreline.
Condition 28: Where works have been constructed for the purpose of protecting burials and other significant objects and sites from physical impact, a monitoring and maintenance program will be established, and this will be included in the CLPoM.	A number of erosion monitoring transects cross the major burial protection works (major burial works are defined here as those works intended to retain large quantities of sand in place to provide a cover and hence protection of burials, rather than individual burial mounds) and document the performance and condition of those works. Each year recommendations are made with regard to the maintenance of those works. In 2009 it was noted that the Snake Island wave barrier no longer functions as designed. Planning should begin for its replacement or the installation of an alternative protection measure. Burial protection works on East Nanya require repair or replacement.

Erosion Monitoring Consent Conditions	Compliance Response
Condition 30: The CLPoM shall contain a strategy for the identification, assessment, monitoring, and where possible, management of all physical and biological processes affecting the stability of the Lakeshore. The strategy will include the identification of priority areas for minimising erosion around the Lakeshore, focusing on historically undisturbed sediments, especially those containing cultural material, or that with intrinsic geomorphological significance. The strategy shall also contain actions for the minimisation of erosion, taking into account the broader cultural landscape values. Where significant erosion is monitored, the MDBA shall review the causes of the erosion, and provide a copy of that review to the Director-General. The review will include any measures proposed to reduce the rate of erosion, and the timetable for their implementation. Any changes to the strategies in the CLPoM resulting from information collected in the monitoring program must be referred to the LVAC for comment and approval by the Director–General.	Shoreline geomorphology and erosion is monitored through the survey of 37 transects and visual inspection during surveying. These transects are surveyed annually and the majority are located in areas of high cultural value and zones where erosion is known to be a problem. In 2009 these transects were surveyed twice to capture change associated with both wind erosion when the Lake is low and wave erosion when the Lake is closer to full storage. In as far is possible, profile change is explained with respect to the process environment. Reporting of change on each profile always identifies when significant erosion of historically undisturbed sediments has occurred. Recommendations are made to SA Water when it is necessary to report significant erosion to the Director-General DECCW.
Condition 31: All investigation, assessment and monitoring activities will utilise current best practice. The results of all the investigations, monitoring and assessment activities will be noted in the Annual Report.	Erosion monitoring utilises current best practice.

FURTHER COMPLIANCE ACTIONS UNDERTAKEN

By the Lake Victoria Program Manager (Lyn Barnes)

- Once the MDBA were notified of the results of shoreline survey by Dr Wayne Stephenson, the Lake Victoria Program Manager notified the Director–General on behalf of the MDBA via written correspondence in May 2008. The Director-General was advised that the issues of erosion as advised by Dr Stephenson was to be listed as a high priority matter for consideration by the Scientific Review Panel, and that additional cultural heritage montitoring of the Eastern shoreline would be undertaken.

Monitoring Shoreline change January 2009

Photo courtesy of Dr Wayne Stephenson

MONITORING VEGETATION (CONSENT CONDITIONS 30–37) (PERMIT 57)

Section 90 Consent and Compliance Response for Vegetation Monitoring at Lake Victoria (NPWS 2006)

By Dr Ian Sluiter (Ogyris Pty Ltd)

Flora Monitoring Consent Conditions (NPWS 2006)	Compliance Report
Condition 32: The CLPoM will contain a strategy for the ongoing identification, assessment and monitoring of vegetation on the Lakeshore. The strategy will include actions for the retention and enhancement of native vegetation on the Lakeshore, taking into account the broader cultural landscape, cultural heritage values and natural attributes. Where natural significance values in identified priority areas are demonstrably negatively affected by the operation of the Lake, and/or there is a measured decrease in the extent of vegetation cover by the plant species identified in the CLPoM, the MDBA will review the causes of vegetation decline and where possible, take appropriate corrective management action and report these to the Director-General.	Annual botanical field assessment and reporting from culturally sensitive areas which includes comparisons with previous year's data allows for feedback to the MDBA (via SA Water) of the status of the vegetation surrounding the Lake. In response to Consent Condition 32, culturally sensitive areas should not be exposed to a significant "measured decrease in the extent of vegetation cover by plant species identified in the CLPoM". It is the opinion of the author that the Talgarry Barrier, where a very large number of Aboriginal burial mounds exist is currently experiencing a significant decline in vegetation health. This is directly related to a lack of floodwaters inundating the Talgarry Barrier over the past 4 years. Those parts of the barrier above 26 m AHD have not been flooded for 43 months; those parts of the barrier between 24.2 and 26 m AHD have not been flooded for 19 months; whilst the duration of flooding above 23.7 m AHD was restricted to one month in late December 2007-early January 2008. It is not surprising that vegetation condition on the Talgarry Barrier has declined in 2009. Elsewhere on sandy barrier islands within the Frenchman's Islands, vegetation cover has reduced, but does not appear to be under the same degree of threat as the Talgarry Barrier. Vegetation adjacent to the Frenchmans Creek is also in poor condition due to a lack of flooding combined with kangaroo over-grazing.

Lakeshore vegetation on the western shoreline reduced in plant cover and biomass due to dry conditions
Photo courtesy of Lyn Barnes

Flora Monitoring Consent Conditions (NPWS 2006)	Compliance Report
Condition 33: The MDBA must monitor the nature and distribution of Lakeshore vegetation, including both native and introduced species, and identify and assess the range of processes affecting these and their interactions.	Monitoring lines exist around the perimeter of the Lake and all plant species are measured, recorded and reported upon. The reasons for plant species expansions and declines are explained within the 2008-09 annual vegetation monitoring report.
Condition 34: Vegetation monitoring will also include assessment of the impact of vegetation on the sedimentation and erosion of sediments with in situ cultural heritage that have been identified as priority areas.	Monitoring is concentrated in culturally sensitive areas and occurs along the same transects as used in the Shoreline Change Study. Where significant sedimentation or erosion occurs, the vegetation response is in the report.
Condition 57 (Consent and Permit): In carrying out the activity, the MDBA must not damage any critical habitat, harm or pick any threatened species, population, ecological community or protected fauna, or damage their habitats. The MDBA shall therefore carry out all necessary monitoring to detect any risk of this occurring.	No threatened flora species or *Threatened Species Conservation Act 1995* (NSW) listed plant communities have been recorded from the Consent area at Lake Victoria. Threatened plant communities listed by Benson (2006) do occur in areas surrounding the Consent area which are managed by either SA Water or the New South Wales Office of Water.

FURTHER COMPLIANCE ACTIONS UNDERTAKEN

By the Lake Victoria Program Manager (Lyn Barnes)

- Notification of the results of the 2008–09 vegetation survey by Dr Ian Sluiter will be forwarded to the Director–General on behalf of the MDBA within the forthcoming reporting period and the Scientific Review Panel will consider this matter further.

STUDY TO ASSESS CONDITION OF RIVER RED GUM

By the Lake Victoria Program Manager (Lyn Barnes)

- In November 2008 the DWE engaged Dr Sluiter to undertake an assessment of the health of the river red gum trees at a number of sites along the Western shoreline, and to provide an assessment of the threat posed by mallee strangle vine outbreak in this area
- Dr Sluiter provided the report titled, Report on the health of River Red Gum around the Western Margin of Lake Victoria, South West NSW, November 2008. The results were that trees were water stressed at 27 m AHD because they had not been flooded for a period of 46 months. Infestations of mallee strangle vine were a secondary indicator of poor tree health.

Water stressed river red gums covered with mallee strangle vine
Photo courtesy of Dr Ian Sluiter

BEC members surveying the river red gums with Dr Ian Sluiter
Photo courtesy of Mike Gilby

COMPLIANCE RESPONSE

Management of Weeds (cc 32-33)	• Weed treatments have been undertaken by the cultural heritage management team in areas of cultural sensitivity at LVS depot, Nanya Island, Yellowbelly, Moon, East Moon, Snake Islands, Talgarry beach and Talgarry Barrier. • The main weed types targeted within the area defined by the CLPoM have been horehound, Noogoora burr, Bathurst burr, Scotch thistle, deadly nightshade, tobacco bush and golden dodder. • Golden dodder is becoming more prevalent through the Southern lakebed with more than 400 individual locations recorded with random sightings occurring on the South Western foreshore. • Contractor Bernhardt Pest and Weed Management was engaged during this reporting period to assist with all weed and feral animal control programs. • Approximately 100 x 20L drums of glyphosate (round-up) were used during this reporting period in the consent area.
Management of feral animals (cc 35)  **Rodexing rabbit warrens March 2009** Photo courtesy of Mike Gilby  **Pig control December 2009** Photo courtesy of Frank Bernhardt	• The autumn rabbit baiting program on Snake Island, the Southern foreshore and riparian reserve transects was completed by April 2009 with a total of 400 kg of bait and free feed used. • The rabbit management program in the consent zone is implemented by the Cultural Heritage Management team and contractor Mr Frank Bernhardt. Methods of treatment include monitoring, baiting, rodexing and shooting. • New transects were established in the Noola conservation reserve area and are monitored on a quarterly basis by the Cultural Heritage Management team. Two of the three new transects are attached at the back of this report. • An extensive pig control program was implemented by Mr Berhnardt to control increasing numbers within the consent area. Ten pigs were destroyed in the second half of the reporting period by Mr Berhhardt. • An extensive feral animal control program has also been undertaken by the NSW Department of Water and Energy (now the Office of Water) on lands surrounding Lake Victoria, with the main strategic aim of creating a `buffer' zone to support the feral animal control program within the area defined by the CLPoM and Noola riparian reserve. • The amount of $43,662 was spent by DWE on the feral animal control program on areas linked to Lake Victoria management. Evidence of success was reflected by monitoring results such as the reduction from 27 rabbits per km in May 2009 to 3.29 per km after treatment on the Eastern side of Lake Victoria.

SALINITY AT LAKE VICTORIA SHORELINE (CONSENT CONDITIONS 37–38, 42–44)

The section 90 consent conditions under the National Parks and Wildlife Act 1974, for the operation of Lake Victoria, requires the monitoring and evaluation of groundwater levels and salinity for conditions 37, 42, 44 and 46. Table 1 is a summary of compliance with these conditions.v

Table 1: Compliance with consent conditions

Groundwater Monitoring Consent Conditions	Compliance Response ✓
Condition 37: The MDBA will ensure that the implementation of the CLPoM continues to address the health of the aquatic environment of the Lake. The MDBA will ensure that water salinity monitoring continues. The MDBA will include water quality monitoring information related to Lake Victoria in the Annual Report.	**Compliance:** Groundwater monitored consists of electromagnetic geophysics surveys along established transects and down bore hole electromagnetic surveys, groundwater level monitoring and groundwater salinity monitoring on the Lake bed. Groundwater levels and groundwater salinity monitoring also occurs on the River Murray floodplain and the area adjacent to the Lake. Groundwater level monitoring on the Lake bed shows a decline in groundwater levels associated with the lower Lake operating levels since 2006. The decline in groundwater levels are between 2 to 3.5m at the sites on the Lake bed. The geophysics electromagnetic surveys of the salinity in the soil profile and groundwater salinity monitoring show minimal change under the lower Lake operating level since 2006 on the Gecko Island transect line. However, on the Talgarry Barrier and Talgarry Windmill transect lines on the eastern lake bed, there is an indication that soil salinity is increasing in the soil profile from the lower levels since the higher lake operating levels pre 2006. Although the soil salinity has increased since 2006, they are lower than those recorded in 1999. An investigation was completed in July 2009 on the soil salinity of the eastern Lake bed to determine the variation in soil salinity and the potential impact of the soil salinity on cultural heritage sites and revegetation. The results of the survey indicate that the soil salinity on the eastern Lake bed is highest at the northern end and generally declines to the south. The soil salinity is generally between 2 to 4 dS/m on the southern area of the eastern Lake bed and between about 30 to 50 dS/m in the northern area of the eastern Lake bed. The return to pre 2006 Lake operating levels is likely to cause dilution of the near surface soil salinities. The current measured soil salinities are likely to represent a soil salinity concentration for a period of low lake level operation rather than normal operating conditions.

Groundwater Monitoring Consent Conditions	Compliance Response ✓
Condition 42: The MDBA will conduct a process to quantify the impacts of the operation of Lake Victoria and Frenchmans Creek on neighbouring properties in the interests of achieving an enduring agreement with affected landowners.	**Compliance:** Groundwater level monitoring occurs at 60 bores on the River Murray floodplain and on adjacent higher areas surrounding the lake. Groundwater levels have declined on the floodplain by about 0.5 to 1 m during the lower Lake operating levels since 2006. Groundwater levels at monitoring sites to the east of the Lake that are not significantly influenced by the Lake's operation have declined because of the current drought conditions. The saline soils on the floodplain have been mapped in 1993-94 and in 2002-03. It is anticipated that between 2002-03 and 2005-06 the area impacted by salinity may have increased because of the Lake operating levels. However, with the lower Lake operating levels since 2006, the area impacted by saline soils on the floodplain may not have significantly altered.
Condition 44: The MDBA will ensure that groundwater levels around the Lake and its adjacent supply channels will continue to be monitored and that there is ongoing revision of mapping of areas affected by salinity as information from monitoring and modelling indicates changes to the groundwater levels in the area. The MDBA must implement appropriate management strategies to prevent impacts on the environment resulting from any rise in groundwater, likely to be contributed to by the operation of the Lake and report these in the Annual Report. Such strategies must include a timeframe for implementation. If approved by the Director General, these strategies will be implemented by the MDBA.	**Compliance:** Groundwater level monitoring occurs at 60 bores on the River Murray floodplain and on adjacent higher areas surrounding the lake. Groundwater levels have declined on the floodplain by about 0.5 to 1 m during the lower Lake operating levels since 2006. The groundwater levels are now at similar levels to those in 1999 when the investigations were being undertaken as part of the EIS investigation. However, the regional groundwater levels have continually declined since 1999 because of drought conditions. Groundwater levels at monitoring sites to the east of the Lake show minimal influence from the Lake's operation as a water storage and have declined since 1999 because of the drought. The saline soils on the floodplain have been mapped in 1993-94 and in 2002-03. It is anticipated that between 2002-03 and 2005-06 the area impacted by salinity may the increased because of the Lake operating levels. However, with the lower Lake operating levels since 2006, the area impacted by saline soils on the floodplain may not have significantly altered. It is unlikely the there has been a reduction in soil salinity because of there being no significant flood or rainfall events to flush the salts from the soil profile.

Groundwater Monitoring Consent Conditions	Compliance Response ✓
Condition 46: If any Aboriginal object found is likely to be damaged, destroyed or defaced by salinisation due to changes to groundwater resulting from the Activity, and that object is not included in the approval granted under this consent, then the MDBA must immediately notify the Director General.	**Compliance:** An investigation was completed in July 2009 on the soil salinity of the eastern Lake bed, to determine the potential impact on cultural heritage sites and revegetation. The results of the survey indicate that the soil salinity on the eastern Lake bed is highest in the north and generally declines to the south. The soil salinity is estimated to be generally between 2 to 4 dS/m on the southern area of the eastern Lake bed and between about 30 to 50 dS/m in the northern area of the eastern Lake bed. The soil salinity on the eastern Lake bed is likely to be associated with the lower Lake operating levels and the evapoconcentration of salts in the soil profile. The salts would normally be flushed during the higher Lake operating levels. This is likely not to have occurred since 2006. Additional studies are required to determine to what extent the high soil salinities would be impacting on the cultural heritage and vegetation on the eastern Lake bed.

FURTHER COMPLIANCE ACTIONS UNDERTAKEN

By the Lake Victoria Program Manager (Lyn Barnes)

- Results of the 2008–09 shoreline salinity investigation by Mark Mitchell will be considered by the Scientific Review Panel in the forthcoming reporting period, and especially in relation to potential impacts to cultural heritage and re-vegetation.

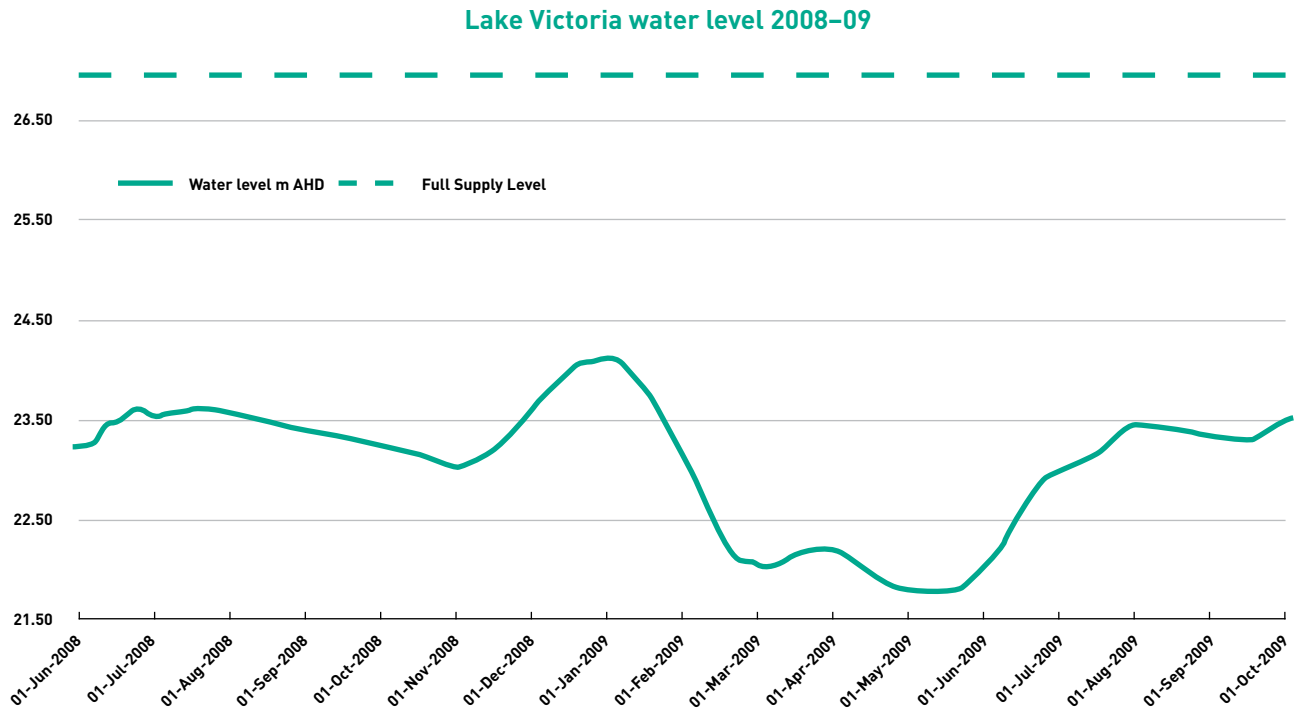
MONITORING WATER QUALITY (CONSENT CONDITION 37)

By SA Water

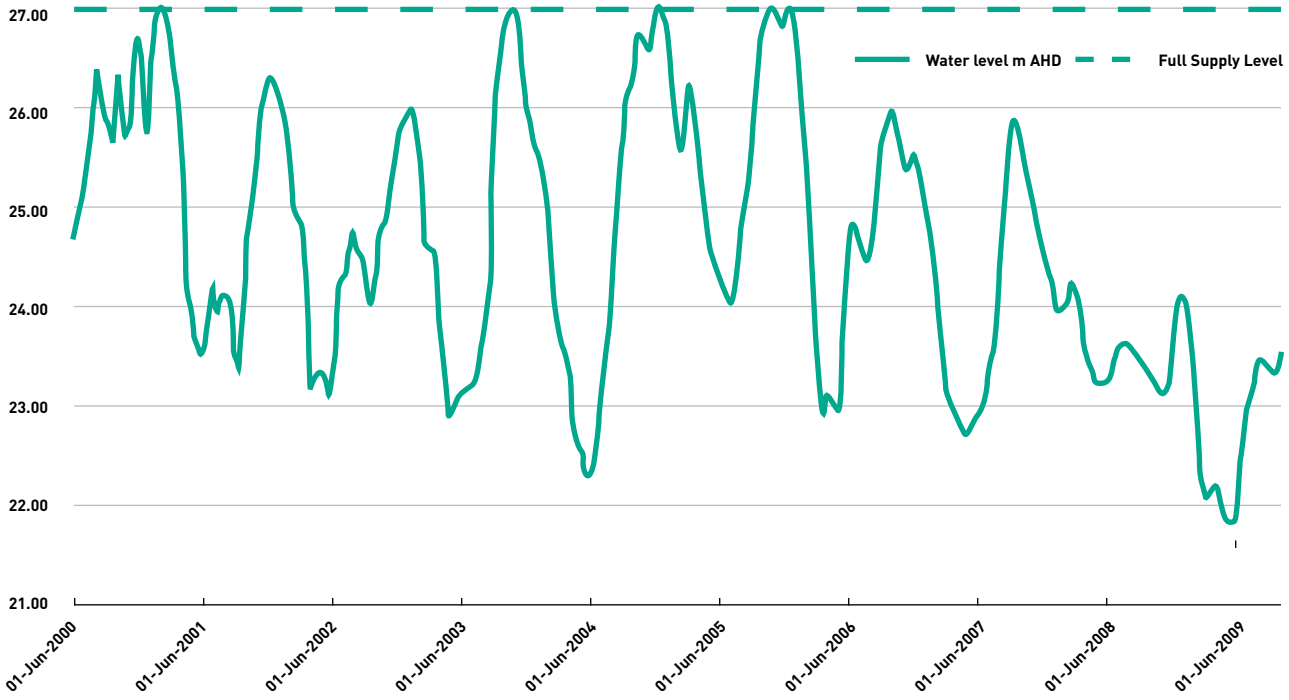
Date range	1st July 2008 to 30th June 2009			
Component	Samples	Min	Max	Ave
Blue Green Algae-Total	43	0	942	66
Colour-True (456nm)	41	4	18	6
Conductivity	41	160	332	257
pH	41	6.6	8.2	7.8
Temperature	32	7.8	25.7	15.7
Total Dissolved Solids (by EC)	41	88	180	142
Turbidity	39	26	290	121

LAKE OPERATIONS (CONSENT CONDITIONS 38–41)

By the Murray Darling Basin Authority



Lake Victoria water level 2008–09



During 2008-09 the operation of Lake Victoria satisfied all rules specified in the Lake Victoria Operating Strategy, which was developed to help achieve the objectives specified in the Lake Victoria Cultural Landscape Plan of Management (CLPoM). The water level in Lake Victoria varies over the year. In spring the water level is increased, the lake is then partially drawn down over summer and autumn to assist in meeting the high water demands in the River Murray system during these months. In recent years due in part to low inflows from the Murray and low demand, the lake has not been completely filled.

IMPACTS ON AREAS OUTSIDE OF THE LAKE

(Consent Conditions 42–47)

	Compliance Response
Consent Conditions 42–47  **The Nulla Station / Lake Victoria lunette/lakeshore boundary where endangered vegetation, sandhill canegrass dominates the landscape** Photo courtesy of Dr Ian Sluiter	• The purchase of Nulla Station by the MDBA with consequent removal of stock from the Nulla foreshore after December 2008. • Ongoing negotiations with landholders in relation to the protection of the Eastern Lake Victoria foreshore. • The Director Indigenous Engagement for the Living Murray Program (MDBA) Mr Neil Ward, informed the BEC in June 2009 about `Use and Occupancy Mapping and the `The Living Murray' (TLM) programs. The BEC Facilitator then informed the BEC about the opportunity this program offered as a way of recording their connection to country. • The BEC Facilitator attended a TLM/MDBA Facilitators meeting in Melbourne on the 28 and 29 April 2009 to discuss Basin Planning, Cultural Mapping, Murray Lower Darling River Indigenous Nations (MLDRIN), Land Use and Occupancy training, so this larger regional planning information could be conveyed to BEC members and the Aboriginal community.

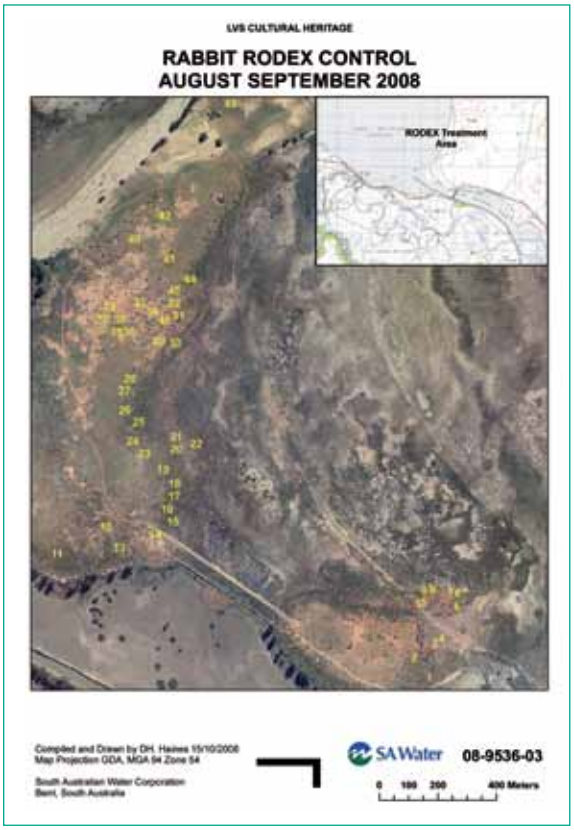
RECOMMENDATIONS FOR ALTERATION TO THE PLAN OF MANAGEMENT

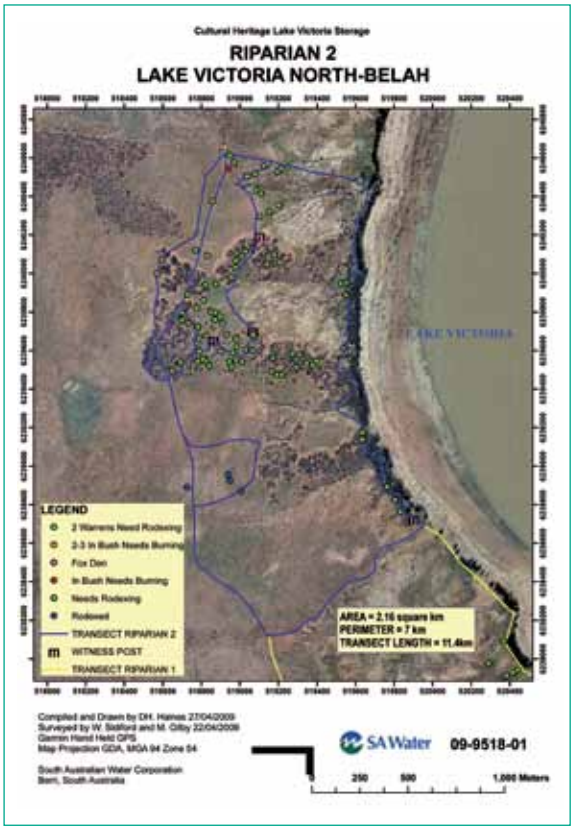
- The addition of recommendations approved by LVAC within the 2007–08 Annual Report.
- The completion of the Feral and Weed Control Strategies within the Procedures section is required.
- An alteration of the `Access Protocol' to accommodate access requirements for government groups and organisations that are not already listed within this Protocol.
- The review of, and alteration to the `Protocol for the Lake Victoria Aboriginal Employment Strategy' to reflect the new MDBA commitment to, and requirements under the cadet training program.
- To ensure that the Lake Victoria Aboriginal Training and Employment Strategy on page 88 aligns with the Protocol on page 20, and if necessary combine into the one strategy/protocol.
- Alter aspects of the `Lake Victoria Code of Conduct' (Protocol 6) to ensure it aligns with requirements for `visitors' to Lake Victoria, which was the intended target audience for Protocol 6.
- Likewise ensure that the new LVAC Code of Conduct (see below) is aimed at the target audience of LVAC members and Lake Victoria personnel.
- The addition of new Protocols including:
    1. The now completed Code of Conduct for LVAC members
    2. A Lake Victoria Sitting Fee Protocol
    3. A Protocol for BEC involvement in Cultural Heritage Monitoring and Management within the area defined by the LVCLPoM and lands managed by SA Water outside the area defined by the LVCLPoM.
- Include the completed Annual Report Template into the `Procedures' section of the Plan.
- Edit the `Plan' to reflect agency name alterations of MDBC to MDBA, DWE to NOW and DECC to DECCW
- Ensure the new MDBA style and referencing requirements are incorporated. Include notification that the Consent Conditions were transferable without change from the MDBC to the MDBA.

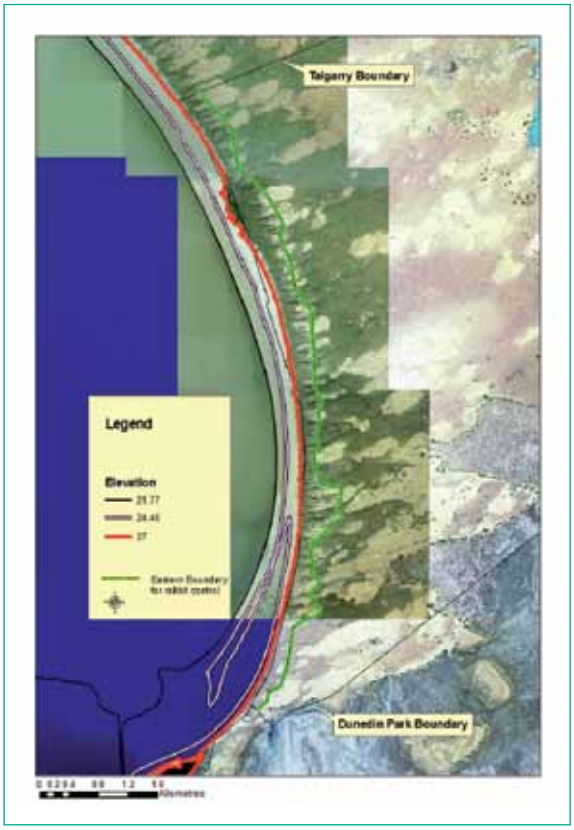
BEC members Kingsley Abdulla and Sam Koolmatrie research Lake Victoria at the AITSIS-Canberra
Photo courtesy of Greg Warren

SOME OF THE RABBIT CONTROL TRANSECTS ESTABLISHED WITHIN THE VICINITY OF LAKE VICTORIA.

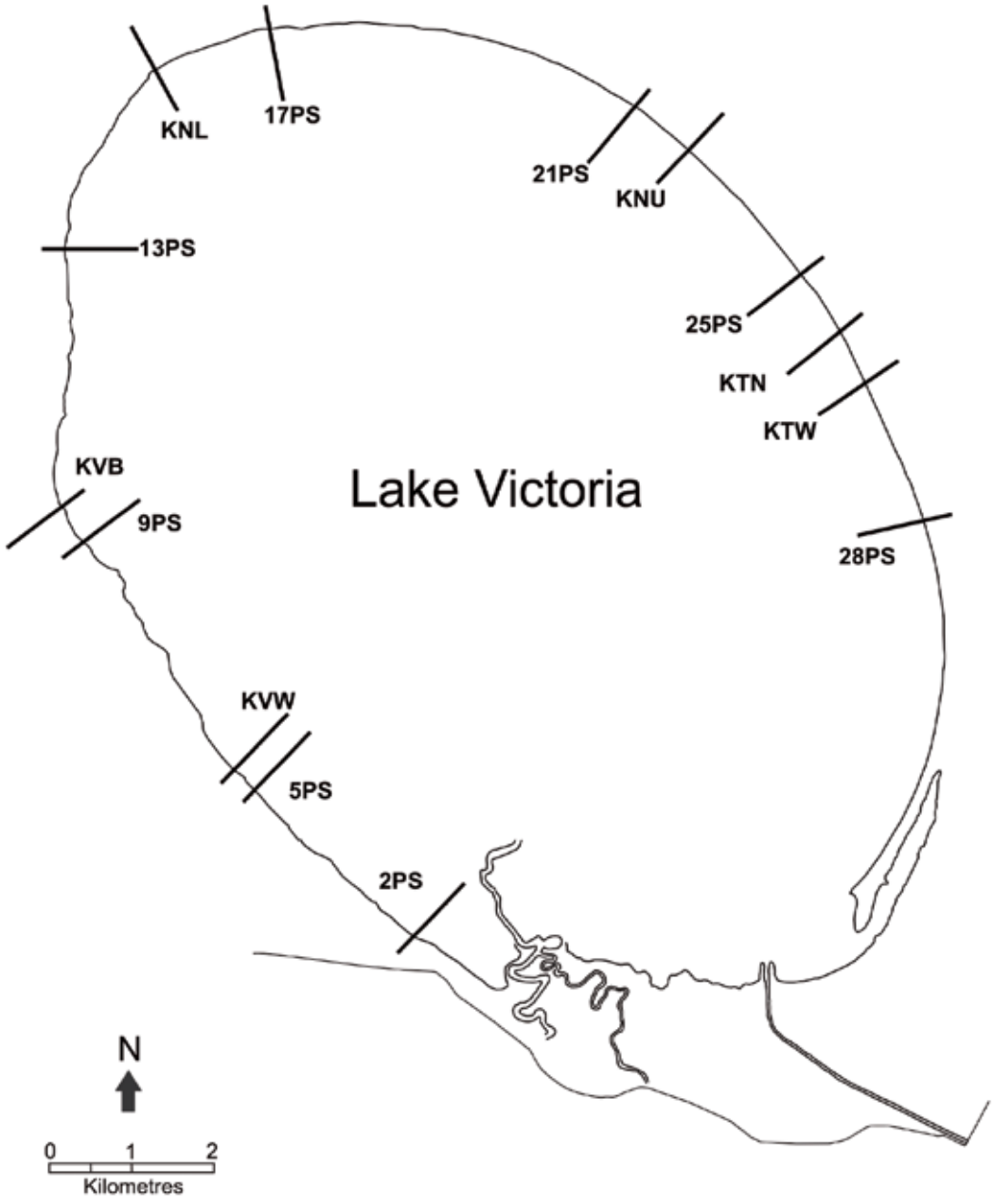
Maps 1-4



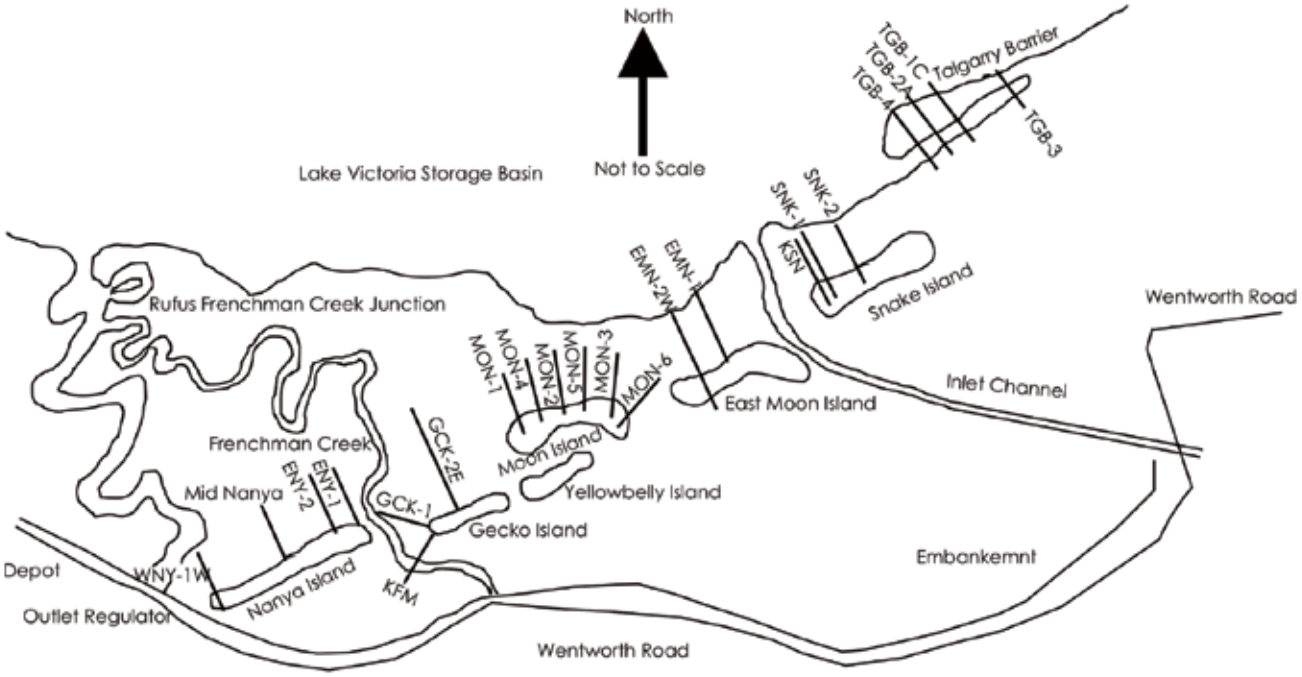




Map 5 Location of erosion perimeter profiles at Lake Victoria.



Map 6 Location of southern shore profiles.



SOUTHERN LAKE SHORE ISLANDS AND PROFILE LOCATIONS

LAKE VICTORIA CONSENT WORKS 2008/09								
SERVICE LAKE VICTORIA	WORK ORDER	WORKORDER DESCRIPTION	ORIGINAL BUDGET	LABOUR	CONTRACTED LABOUR	MATERIALS - STORE SUPPLY	MATERIALS EXTERNAL	
PROTECTION OF BURIAL SITES								
	MD710501	MONITORING CH WORKS (ROUTINE)	10,000				669.60	
	MD710502	ABORIGINAL BURIAL SITE MAINTENANCE	10,000			525.61	15,597.09	
	MD710503	ABORIGINAL ARTEFACT MAINTENANCE	5,000				217.25	
	MD710504	BEC ONSITE MONITORING	5,000				428.18	
	MD710505	WAGES	75,000	78,482.58				
	MD710506	PLANT AND EQUIPMENT	5,000				1,127.27	
	MD710507	VEHICLE COSTS	14,000					
	MD710508	MISCELLANEOUS	2,000				426.99	
			126,000	**78,482.58**	**0.00**	**525.61**	**18,466.38**	
MONITORING OF FLORA AND EROSION:								
	MD710520	EXTERNAL CONSULTANTS	80,000					
	MD710521	MONITORING OF FLORA AND EROSION	15,000				847.73	
	MD710522	REVEGETATION	5,000				245.40	
	MD710523	WAGES	45,000	36,136.85	3,439.71			
	MD710524	PLANT AND EQUIPMENT	4,000				634.77	
	MD710525	VEHICLE COSTS	9,000					
	MD710526	MISCELLANEOUS	2,000					
			160,000	**36,136.85**	**3,439.71**	**0.00**	**1,727.90**	
FORESHORE MANAGEMENT & LAND MANAGEMENT								
	MD710540	CONTRACT LABOUR	40,000		4,818.75			
	MD710541	MATERIALS	10,000			4,090.90	10,762.08	
	MD710542	ACCESS TRACK MTCE	10,000					
	MD710543	PEST CONTROL	10,000				115.02	
	MD710544	WEED CONTROL	30,000			720.54		
	MD710545	NURSERY COSTS	10,000				25,757.50	
	MD710546	BEC ONSITE MONITORING	5,000					
	MD710547	WAGES	71,000	77,032.55				
	MD710548	PLANT AND EQUIPMENT	6,000					
	MD710549	VEHICLE COSTS	14,000					
	MD710550	MISCELLANEOUS	2,000				148.36	
			208,000	**77,032.55**	**4,818.75**	**4,811.44**	**36,782.96**	
LAND AND PROPERTY MGMT NOOLA & LAKE VICTORIA								
	MD710560	FLORA & EROSION MANAGEMENT	5,000					
	MD710561	PEST CONTROL	10,000				371.34	
	MD710562	WEED CONTROL	10,000			790.00	1,922.73	
	MD710563	WAGES	45,000	38,930.83				
	MD710564	PLANT AND EQUIPMENT (INCL NOOLA PUMPS)	5,000					
	MD710565	VEHICLE COSTS	8,000					
	MD710566	MISCELLANEOUS	2,000			293.68	721.65	
			85,000	**38,930.83**	**0.00**	**1,083.68**	**3,015.72**	
COMMUNICATION								
	MD710580	INFORMATION BAY	3,000				326.32	
	MD710581	MISCELLANEOUS	5,000	495.00			1,116.49	
	MD710582	ACID	5,000					
			13,000	**495.00**	**0.00**	**0.00**	**1,442.81**	
NULLA PUMP STATION								
	MD710901	NULLA PUMP STATION	**25000**	**16,061.34**				
PURCHASE MINOR PLANT CH								
	MD710902	PURCHASE MINOR PLANT CH	**5000**				**3,928.28**	
TRAINING								
	MD710903	TRAINING	**0**				**2,220.42**	
TOTAL			**622,000**	**247,139.15**	**8,258.46**	**6,420.73**	**67,584.47**	

	FUELS AND OILS	VEHICLE REGISTRATION	PLANT AND VEHICLE REPAIR	SERVICES PROVIDED BY CONTRACTORS	ELECTRICITY	MOBILE PHONE	TOTAL SPEND	VAR TOTAL/ORIG BUD
							669.60	-9,330.40
			260.14	7,369.92		276.66	24,029.42	14,029.42
							217.25	-4,782.75
							428.18	-4,571.82
							78,482.58	3,482.58
			1,011.92	608.90			2,748.09	-2,251.91
	427.98		474.85				902.83	-13,097.17
					2,231.94		2,658.93	658.93
	427.98	**0.00**	**1,746.91**	**7,978.82**	**2,231.94**	**276.66**	**110,136.88**	**-15,863.12**
				95,447.10			95,447.10	15,447.10
			3,924.50				4,772.23	-10,227.77
							245.40	-4,754.60
							39,576.56	-5,423.44
			2,460.22				3,094.99	-905.01
	1,024.10	236.20					1,260.30	-7,739.70
							0.00	-2,000.00
	1,024.10	**236.20**	**6,384.72**	**95,447.10**	**0.00**	**0.00**	**144,396.58**	**-15,603.42**
							4,818.75	-35,181.25
							14,852.98	4,852.98
							0.00	-10,000.00
	754.23			24,220.48			25,089.73	15,089.73
	224.67			25,167.27			26,112.48	-3,887.52
							25,757.50	15,757.50
							0.00	-5,000.00
							77,032.55	6,032.55
			5,690.74				5,690.74	-309.26
			516.89				516.89	-13,483.11
							148.36	-1,851.64
	978.90	**0.00**	**6,207.63**	**49,387.75**	**0.00**	**0.00**	**180,019.98**	**-27,980.02**
							0.00	-5,000.00
				4,325.46			4,696.80	-5,303.20
							2,712.73	-7,287.27
							38,930.83	-6,069.17
				120.00			120.00	-4,880.00
							0.00	-8,000.00
			84.32	545.45			1,645.10	-354.90
	0.00	**0.00**	**84.32**	**4,990.91**	**0.00**	**0.00**	**48,105.46**	**-36,894.54**
							326.32	-2,673.68
				390.00			2,001.49	-2,998.51
							0.00	-5,000.00
	0.00	**0.00**	**0.00**	**390.00**	**0.00**	**0.00**	**2,327.81**	**-10,672.19**
	8,063.04		**5,665.34**				**29,789.72**	**4,789.72**
							3,928.28	**-1,071.72**
							2,220.42	**2,220.42**
	10,494.02	**236.20**	**20,088.92**	**158,194.58**	**2,231.94**	**276.66**	**520,925.13**	**-101,074.87**

Australian Government

MURRAY–
DARLING
BASIN AUTHORITY