

## Avon Catchment Council Investment Plan Projects 2005/06 Summary

| Project Manager Liz Kington                                   |   |  |   |            |                |
|---|---|--|---|------------|----------------|
| Project Name  | Delivery organisation   | Project Deliverables   | Salinity and Water Quality Outcomes   | Commencing | Funding 05/06  |
| <b>Ecoscapes - ND004</b>                                      | Avon Natural Diversity Alliance (Department of Water, Greening Australia WA, Department of Environment and Conservation, WWF-Australia) Greening Australia WA as lead partner | <ol style="list-style-type: none"> <li>1. Identification of ecoscapes.</li> <li>2. Threat assessment for ecoscapes.</li> <li>3. Identify management options.</li> <li>4. Assist in redevelopment of MATs</li> <li>5. Conservation plans for selected ecoscapes.</li> <li>6. Biodiversity management team to assist community understanding of management options.</li> <li>7. On ground management of ecoscapes.</li> <li>8. Establishment of ecological monitoring sites.</li> </ol>                                | <ul style="list-style-type: none"> <li>• Addressing the threats to significant landscape assets in the region in a ridge top to ridge top approach. This project is addressing 4 ecoscapes that incorporate valley floor and mid-slope locations that are threatened by salinity. Without management of salinity on a catchment scale all ecoscapes being addressed will not be viable in the near future.</li> </ul> | Nov-05     | \$2,421,823.00 |
| <b>Groundwater source ID, assessment, monitoring - IWM002</b> | Department of Agriculture and Food WA and GHD Pty Ltd.  | <ol style="list-style-type: none"> <li>1. Study of potential and existing low salinity ground water sites in the region.</li> <li>2. On ground investigations of resource sites.</li> <li>3. Development of best management practice guidelines for groundwater resources.</li> <li>4. Collation of extension materials.</li> <li>5. Carry out regional extension, including engaging CLCs in monitoring actions.</li> <li>6. Database of groundwater resources.</li> <li>7. Ground truthing bore network</li> </ol> | <ul style="list-style-type: none"> <li>• Development and implementation of a regional groundwater monitoring strategy.</li> <li>• Identify groundwater benchmark levels and quality.</li> <li>• Develop guidelines for sustainable use of groundwater. This will also include identification of potential environmental impacts due to increase use of the resource.</li> </ul>                                       | Nov-05     | \$431,700.00   |

|  |   |   |  |        |              |
|--|---|---|--|--------|--------------|
|  |   | 8. Benchmarking groundwater levels.<br>9. Infill drilling.<br>10. Extension program.  |  |        |              |
| <b>Protection of Community Assets - IWM003</b> | Department of Agriculture and Food WA and GHD Pty Ltd | 1. Assist in engineering design specs for two rural towns based on DAWA work.<br>2. Engineering /implementation design plan for one town based on outcomes of Rural Towns Program.<br>3. Surveys and design plans for five rural towns.       | <ul style="list-style-type: none"> <li>• Development of a rural town water management model, water management plans and practices and the implementation of an integrated water management pilot schemes.</li> <li>• Research and collate information regarding management of threats (saline groundwater rise) to town infrastructure and cultural/historical sites within the region.</li> <li>• Distribute and utilise information of threat management to assist communities to protect assets.</li> </ul> | Nov-05 | \$333,228.00 |
| <b>Protection of Transport Assets - IWM004</b> | GHD Pty Ltd   | 1. Inventory of regional transport assets at risk - develop risk assessment tool for LGAs etc.<br>2. Review current management practice for assets and develop best management practice guidelines (manual).<br>3. Demonstrate best practice. | <ul style="list-style-type: none"> <li>• Research and collate information regarding salinity threat analysis methods and management of those threats to infrastructure within the region.</li> <li>• Development of an education and extension program for transport asset managers including the utilisation of existing salinity threat management information.</li> <li>• Demonstration of management options.</li> </ul>   | Nov-05 | \$292,351.00 |

|                                     |  |  |  |        |                |
|-------------------------------------|--|--|--|--------|----------------|
| <b>Salinity Management - IWM005</b> | Avon Catchment Council – sub contracting to the Saltland Pastures Association, Upper Great Southern Oil Mallee Growers Association, Department of Water. | <ul style="list-style-type: none"> <li>• Commencement of saltland pastures support program – establishment of 455ha of saltland pastures in salt affected areas in the eastern part of the catchment (94 farmers directly involved in program).</li> <li>• Commencement of the establishment of 300ha of oil mallees in an 80km radius of the Wickepin area, associated with oil mallee industry development and linked to SWCC investments in this area (30 farmers directly involved).</li> <li>• Support for pre-feasibility assessment for engineering options (drainage) at Warralakin.</li> <li>• Commencement of demonstration of methods of treating acid groundwater at Pithara and Beacon.</li> <li>• Extension support for the establishment of Sandalwood in low to medium rainfall areas – approx.</li> </ul> | <ul style="list-style-type: none"> <li>• Commencement of a salinity auction process for eastern wheatbelt valley floor locations. \$600000 to be invested in on ground actions carried out by farm and catchment groups (commencing July 2006).</li> <li>• Engineering plan implementation for drainage and disposal of groundwater in the Narembeen catchment.</li> <li>• Continuation of the saltland pastures program – estimated coverage 1000ha.</li> <li>• Continuation of the tree crop establishment program in the Merredin and Kulin oil mallee cells covering 600ha.</li> </ul> | Dec 05 | \$1,630,111.00 |
|-------------------------------------|--|--|--|--------|----------------|

| <b>Project Manager Chantelle Noack</b>  |                              |  |   |                   |                      |
|---|------------------------------|--|---|-------------------|----------------------|
| <b>Project Name</b>                     | <b>Delivery Organisation</b> | <b>Project Deliverables</b>  | <b>Salinity and Water Quality Outcomes</b>  | <b>Commencing</b> | <b>Funding 05/06</b> |
| <b>Avon River Waterway Mgmt- IWM001</b> | Department of Water          | <ol style="list-style-type: none"> <li>1. Nutrient management in the Avon - identify sampling points and commence sampling.</li> <li>2. Flood mapping and modelling of the Avon River</li> </ol> | <ul style="list-style-type: none"> <li>• Identify and manage high-risk nutrient loss locations in the Upper Swan, Avon and Mortlock River Systems, including the Northam Waste Water Treatment</li> </ul> | Nov-05            | \$734,555.00         |

|   |  |   |  |        |              |
|---|--|---|--|--------|--------------|
|   |  | <p>3. Complete fencing of the Avon.</p> <p>4. Community workshops for flood and nutrient management also work with Water Corp and LGAs.</p>   | <p>Plant.</p> <ul style="list-style-type: none"> <li>• Predict, model and map short and long term flood events of the Avon River to allow floods access to the floodplain for improved nutrient stripping.</li> <li>• Fencing of both the Avon River and major tributaries, to reduce threatening processes such as nutrients and erosion.</li> </ul>  |        |              |
| <b>Water Mgmt and Self Sufficiency-IWM006</b> | GHD Pty Ltd                                | <p>1. Analyse regional water demand and usage.</p> <p>2. Assessment of alternative water supply sources.</p> <p>3. Setting benchmarks for future regional water consumption.</p> <p>4. Skills audit for farm water planning skills</p> <p>5. Review of current water harvesting best management practice.</p> <p>6. Review training courses for water management</p> <p>7. Demonstrate techniques in 5 priority catchments</p> <p>8. Extension workshops</p> <p>9. Technical support for farm water planning professionals.</p> | <ul style="list-style-type: none"> <li>• Demonstrate, by the development of integrated catchment plans, the potential for the more efficient and appropriate use of identified water supplies on farms.</li> <li>• Encourage a catchment approach to water supply management and demonstrate how water supply planning may assist in addressing problems associated with groundwater salinity, flooding and erosion.</li> <li>• Demonstrate how farm water planning may contribute to achieving improved land and water management practices.</li> </ul> | Nov-05 | \$658,055.00 |
| <b>Fire Mgmt - ND006</b>                      | Department of Environment and Conservation | <p>1. Development of fire management plans for bio-regions</p> <p>2. Develop biodiversity conservation principles to be considered in fire management planning.</p> <p>3. Liaise with Aboriginal groups, FESA and LGAs to develop</p>   | N/A  | Nov-05 | \$80,000.00  |

|  |                                       |  |   |        |              |
|--|---------------------------------------|--|---|--------|--------------|
|  |                                       | management guidelines<br>4. Fire management education program - LGAs   |   |        |              |
| <b>Identification of land management practices that contribute to soil acidity and development of sustainable land management options - SI002.</b> | Department of Agriculture and Food WA | <ol style="list-style-type: none"> <li>1. Review regional data to determine available information.</li> <li>2. Identify sustainable management practices not contributing to acidification and plan demonstration process.</li> <li>3. Establish appropriate and farm based monitoring techniques</li> <li>4. Spatial distribution, risk and benchmarks for soil acidity identified.</li> <li>5. Review current best practice for acidity management and recommend on future direction.</li> <li>6. Demonstration site establishment (use existing sites and quantify and extend outcomes).</li> </ol> | <p>Demonstrating effective monitoring and alternative management of soil acidity that will assist in alleviating the following issues:</p> <ul style="list-style-type: none"> <li>• Reduced plant cover due to intolerance to low pH and aluminium toxicity, leading to increased dry land salinity, waterlogging and flooding.</li> <li>• Increased nitrate pollution of groundwater and reduced water quality due to excessive use of fertilisers and reduced plant growth due to intolerance to low pH and aluminium toxicity.</li> <li>• Reduced vegetation cover and accelerated runoff and erosion due to plant intolerance to low pH and aluminium toxicity.</li> <li>• Declining pH of waterways and aquatic environments.</li> <li>• Increased infrastructure costs, as a result of increased salinity, waterlogging, flooding and sediment, resulting from increased run off and erosion attributed to reduced plant cover, due to intolerance to low pH and aluminium toxicity.</li> </ul> | Nov-05 | \$831,000.00 |
| <b>Increased awareness of soil health limiting factors and demonstration of</b>  | Agricultural Research of WA (ARWA)    | <ol style="list-style-type: none"> <li>1. Review soil testing methodology</li> <li>2. Extension and demonstration of testing techniques.</li> <li>3. Benchmarking soil health</li> </ol>   | <ul style="list-style-type: none"> <li>• Reduced and better targeted fertiliser use resulting in fewer nutrients leaching to groundwater and run off to river systems, leading to improvements in water</li> </ul>  | Nov-05 | \$689,000.00 |

|   |  |                                  |   |  |  |
|---|--|----------------------------------|---|--|--|
| land management practices that contribute to long term soil health - SI003. |  | status.<br>4. Extension program. | quality.<br><ul style="list-style-type: none"> <li>Sustainable agricultural production systems resulting in increased water use and reduced run off. Increased and sustained plant growth may lead to a reduction in issues such as secondary salinity, waterlogging and erosion, with resultant gains in water quality.</li> </ul> |  |  |
|---|--|----------------------------------|---|--|--|

| Project Manager: Rebecca Palumbo   |   |   |  |            |               |
|--|---|---|--|------------|---------------|
| Project Name   | Delivery Organisation   | Project Deliverables  | Salinity and Water Quality Outcomes  | Commencing | Funding 05/06 |
| Identification of the spatial distribution of priority environmental pests and development of regional management responses - SI001. | GHD Pty Ltd   | <ol style="list-style-type: none"> <li>Spatially identify the highest impact environmental pest threats within the region that are not adequately addressed by community or government. Link to regional priority asset management.</li> <li>Develop strategies and action plans for priority pests for incorporation in local area plans and identify key regional recommendations for action – lobbying relevant agencies etc.</li> <li>Work towards implementation of strategies with stakeholder groups and benchmark actions against management outcomes.</li> </ol> | N/A  | Nov-05     | \$235,000.00  |
| Baselining - ND001   | ANDA (Department of Water, Greening Australia WA, Department of | <ol style="list-style-type: none"> <li>Gap identification and establishment of information management system.</li> <li>Review classifications for NECs and assess status - biodiversity survey methodology.</li> </ol>  | <ul style="list-style-type: none"> <li>Identification and mapping of regional assets and the threats to such assets, including salinity and water quality issues and contributing process, such as soil</li> </ul> | Nov-05     | \$767,270.00  |

|                                   |  |  |  |        |                |
|-----------------------------------|--|--|--|--------|----------------|
|                                   | Environment and Conservation, WWF-Australia) DEC is lead partner   | <ol style="list-style-type: none"> <li>3. Develop a mapping and classification system for ecosystems.</li> <li>4. Develop conservation guidelines for representative land units.</li> <li>5. Map the extent and severity of threats.</li> <li>6. Identify and develop monitoring guidelines for salt lakes and other wetlands.</li> </ol>  | acidification.   |        |                |
| <b>Back from the edge - ND002</b> | ANDA (Department of Water, Greening Australia WA, Department of Environment and Conservation, WWF-Australia) DEC is lead partner | <ol style="list-style-type: none"> <li>1. Develop a strategic plan for conservation of threatened species and natural ecological communities.</li> <li>2. Review and recommend on species management options.</li> <li>3. Develop an understanding of the threats to species and management options.</li> <li>4. Develop conservation plans for species.</li> <li>5. Public awareness campaigns developed and delivered.</li> </ol>                                      | <ul style="list-style-type: none"> <li>• Management of assets (native species and communities) for a range of threatening processes including salinity and water quality. The largest grouping of such assets are located in the most threatened part of the landscape (valley floors or mid slope) and as such salinity is having the greatest impact on their long term viability. Managing salinity, including its causes, in agricultural context, is an essential component of this project.</li> </ul> | Nov-05 | \$1,278,220.00 |
| <b>Healthy ecosystems - ND003</b> | ANDA (Department of Water, Greening Australia WA, Department of Environment and Conservation, WWF-Australia) DOW is lead partner | <ol style="list-style-type: none"> <li>1. Develop a strategic plan for conservation of ecosystems (identify threats and assets and management responses).</li> <li>2. Identify threats to low lying ecosystems e.g. salinity, groundwater, drainage.</li> <li>3. Identify specific management options for specific ecosystem assets (including incentive schemes).</li> <li>4. Review and develop targets for ecosystems following identification of threats.</li> </ol> | <ul style="list-style-type: none"> <li>• Addresses water quality (including salinity) issues in order to manage aquatic ecosystem assets. Salinity and water quality are the greatest threat to such assets and the project aims to address the catchment scale causes of such problems.</li> <li>• As with ND002 many ecosystems are located in low lying positions in the landscape and if the causes of salinity and waterlogging are not managed in</li> </ul>   | Nov-05 | \$1,584,790.00 |

|                          |  |   |   |        |              |
|--------------------------|--|---|---|--------|--------------|
|                          |  | <p>5. Conservation plans for priority ecosystems.</p> <p>6. Skills development for local communities etc. to manage ecosystems.</p> <p>7. Implementation of management actions, including incentive schemes.</p> <p>8. Establishment of monitoring sites</p> <p>9. Ongoing status reporting for ecosystems.</p> | <p>a catchment context asset management will not be successful.</p>   |        |              |
| <b>Our Patch – ND005</b> | <p>North East Wheatbelt Regional Organisation of councils (NEWROC) and Greening Australia WA</p> | <p>1. Development of bush land conservation guidelines for LGAs.</p> <p>2. Assist community in identifying important remnants and demonstrate how they can be managed</p> <p>3. Delivery of on ground bush land management projects.</p>  | <ul style="list-style-type: none"> <li>This project is aimed at local scale asset management, with similar issues as those described for ND002-004. Salinity is the primary threat to such assets, therefore increasing community knowledge and actions to manage the processes causing salinity problems will result in the long term viability of such assets.</li> </ul> | Nov-05 | \$907,897.00 |