Woonona East Public School
School Environmental Management Plan
2006 – 2011

Introduction

A School Environmental Management Plan (SEMP) is a tool to plan and coordinate environmental education and provide linkages between the curriculum, management of resources and management of the school grounds.

To date, Woonona East PS (WEPS) has carried out a number of environmental education and management initiatives in isolation. The development of this SEMP will link the initiatives into a 5 year SEMP and address the components recommended by the DET for environmental management planning.

In 2006, a number of teachers, students and community representatives formed an environmental management committee with the objective to conduct an environmental audit and develop an action plan for WEPS.

The school environmental management plan (SEMP)

The DET identifies three components to a SEMP: curriculum, management of the school grounds and management of resources. Each of these components are addressed below.

1. Curriculum

The development and implementation of curriculum by teachers identifies the specific environmental education opportunities and link these into the KLAs, and subjects. This section outlines these opportunities.

1.1 Integrating environmental education into the KLAs and subjects

‘Environmental education is best approached as an across-curriculum strategy integrated into teaching and learning programs from Kindergarten to Year 6. This can occur:

- through study of the mandatory syllabuses which contain specific environmental education outcomes. These occur in such syllabuses as Human Society and Its Environment, and Science and Technology.
- by integrating environmental education into other subjects, such as English, Mathematics and the Creative Arts, where syllabus outcomes can be taught through environmental issues and topics’ (DET, 2001).
1.2 Participating in special environmental events, days and programs
There are many opportunities provided by national events and programs that can enhance student-learning outcomes related to environmental education.

Opportunities include:

- Involving students in investigating, maintaining and improving the school and local environment.
- Utilising the facilities of the DET local field study centre (Killalea EEC), National Parks and Wildlife Discovery Program (Audley), Glengarry House (WCC).
- Use special environmental events, days, celebrations and projects to complement learning in the curriculum (Clean Up Australia Day, Earth Watch, Planet Ark National Tree Day etc).
- Link into national strategies such as ‘Streamwatch’ or ‘Dunecare’.

1.3 Using opportunities in the management of resources and school grounds as learning experiences in KLAs and subjects
'What is learnt inside the classroom about environmental education needs to be reinforced and supported by what happens outside the classroom. Sometimes even the classroom itself can be transferred to another location to enhance students' learning about environmental education' (DET, 2001).

For example the collecting and recording of data during a school environmental audit could support outcomes related to mathematical understandings and skills.

‘Learnscapes’ is a term that describes where a learning program has been designed to permit users to interact with an environment. Rehabilitation projects, revegetation programs, tree planting schemes and other forms of landscaping should be developed with a broader purpose – to enhance student learning through their active participation in the project and by creating new learning spaces where students can learn more effectively and enjoyably. Features such as gardens, forests, ponds, shelters and outdoor ‘classrooms’ increase the diversity of the grounds and allow for a wider range of learning experiences and the creation of a learnscape environment. The development of learnscapes can directly relate to specific KLAs and subjects. Possible learnscapes for Woonona East PS include:

- planting of indigenous species/communities that are under-represented in the Illawarra, including ‘Hind dune Littoral Rainforest’ and ‘Coastal Swamp Oak-Forest’ (see appendix 2 for species lists of these communities) along the school boundaries, garden beds and in underused areas of the school grounds (see appendix 3 for diagram of plantings).
- Conversion of the rockery to a ‘Coastal Sand Scrub’ environment using rocks to create a climbing and exploration environment (see appendix 2 for species list).
• Conversion of the casuarina grove into an 'imaginary play' area for K-1 with Australian animal figurines. Supplement the plantings with those from species list for 'Coastal Swamp Oak Forest' (Appendix 2).
• Extension of this learning to other landscapes in the Illawarra such as the dunal system on the beaches, Puckeys Estate and the Rainforest environments on the escarpment.
• Linking the different vegetation communities to Aboriginal cultural heritage awareness including establishing a 'bush tucker' garden.
• Compare and contrast the coastal environment with escarpment vegetation by establishing a ‘rainforest’ garden.
• Establish a vegetable garden.

2. **Management of school grounds**

Woonona East PS will adopt the principles of ecologically sustainable management to the built and natural environments. This means that we will ‘use, conserve and enhance the communities resources so that ecological processes on which life depends are maintained and the total quality of life, now and in the future can be increased’ (DET, 2005). This is closely linked to ‘3. Management of Resources’.

Specifically
2.1  **Maximise thermal comfort and energy:**
• Locate plantings to provide summer shade and winter warmth
• Locate suitable windbreak species along Corinda Road.
• New buildings will be constructed at Woonona East PS in the next 5 years. An opportunity exists to ensure that the buildings are oriented to the north to maximize thermal comfort.

2.2  **Water management**
• Use plants that require minimum water.
• Utilise endemic species that have adapted to the local conditions.
• Cut turf a little longer to reduce evaporation.
• Use mulch.
• Instigate a water saving ethos in the school.
• Install water tanks to use on the gardens
• Install a rain guage.
• Install half flush toilets and ‘time push’ tap handles in toilets.

2.3  **Recycling**
• Use plants that provide a natural mulch or weed suppressant in areas of low use.
• Chip pruned vegetation to use as mulch where possible.
2.4 Waste
- Recycling bins
- Compost/mulch
- Worm farm
- Paper

2.5 Air
- Walk to school.
- Encourage public transport.
- Bike riding on the cycleway.

There is a safety concern about the cycleway as there is currently no link between the bikepath and the school. Lobbying by P&C is required of the WCC to install foot paths between the bike path and the school. In addition, Lighthorse Drive needs a traffic island or some other refuge/traffic management strategy installed to facilitate the safe movement of students.

School grounds consist of areas that have different functions and different landscaping requirements. These areas in Woonona East PS are:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Location</th>
<th>Function</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public entry zone</td>
<td>Two points of pedestrian access for members of the public from the street: Corinda Road and Pioneer Road.</td>
<td>To promote the public image of the school. To provide the focus and direction for visitors to the school.</td>
<td>Select medium sized trees, shrubs and ground cover from species list for Hind Dune Littoral Rainforest.</td>
</tr>
<tr>
<td>Street frontage zone</td>
<td>Woonona East PS has two major street frontages: Corinda Road and Pioneer Road.</td>
<td>Promote the public image of the school. Delineates and defines the edge of the school Directs visitors towards the entrance of the school Provide a wind break from the east, west and south.</td>
<td>Select medium sized trees, shrubs and ground cover from species list for Hind Dune Littoral Rainforest and plant in such a manner as to not compromise security provided by views from residential properties.</td>
</tr>
<tr>
<td>Office access zone</td>
<td>This encompasses the garden beds directly surrounding the</td>
<td>Provides direction for visitors to the office.</td>
<td>Select medium sized trees, shrubs and ground cover from species list for Hind Dune Littoral Rainforest and plant in such a manner as to not compromise security provided by views from residential properties.</td>
</tr>
<tr>
<td>Office buildings.</td>
<td>Links the public entry zone to the office. Promotes the public image of the school</td>
<td>Hind Dune Littoral Rainforest.</td>
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<tr>
<td><strong>Play zone</strong></td>
<td>Casuarina grove</td>
<td>Allows for recess and lunchtime activities. Could be used as a learning landscape. Select medium sized trees, shrubs and ground cover from species list for Coastal Sand Scrub to create more depth. Place Australian animal figures for children to play with.</td>
<td></td>
</tr>
<tr>
<td><strong>Basketball court area</strong></td>
<td>Allows for recess and lunchtime activities, is a mixture of hard surface and grassed/tree area. Select species from Coastal sand scrub to provide wind break along the fence line and to augment the existing garden bed.</td>
<td></td>
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</tr>
<tr>
<td><strong>Eating &amp; sitting area between the K building and the library demountable.</strong></td>
<td>This area is compromised of a ‘tyre garden’ with seats made of recycled tyres arranged in a circle, as well as picnic tables on the opposite side of the path. Primarily used at lunch/recess to eat. Highly eroded and/or degraded in places. High traffic area. Maintain the ‘tyre garden’ with Coastal sand scrub species. Rehabilitate the area around the picnic tables using Coastal sand scrub species.</td>
<td></td>
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</tr>
<tr>
<td><strong>Railway Pde frontage</strong></td>
<td>Includes grassed area containing the long jump,</td>
<td>Maintain as open grassed, shady area.</td>
<td></td>
</tr>
<tr>
<td>Area</td>
<td>Description</td>
<td>Recommended Planting Options</td>
<td></td>
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<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Playing field</td>
<td>Is used for formal games and sport. May be used for informal physical activity.</td>
<td>Retain the majority of the space as open space, free from plantings. For borders of the playing field, select medium sized trees, shrubs and ground cover from species list for Hind Dune Littoral Rainforest.</td>
<td></td>
</tr>
<tr>
<td>Social Zone &amp; Learnscape</td>
<td>Located behind the office buildings (the ‘frog pond garden’). ‘Wetland’ learnscape</td>
<td>Provides seating, permits outdoor learning and allows for socializing and passive recreation. Select medium sized trees, shrubs and ground cover from species list for Hind Dune Littoral Rainforest to provide depth and privacy to the area.</td>
<td></td>
</tr>
<tr>
<td>Bush tucker garden and rainforest garden</td>
<td>Permits outdoor learning and allows for socializing and passive recreation.</td>
<td>Select infilling and replacement species from indigenous species that were used by the Dharawal people.</td>
<td></td>
</tr>
<tr>
<td>Out of bounds zone</td>
<td>Located along the fenceline of Pioneer Road.</td>
<td>Select medium sized trees, shrubs and ground cover from species list for Hind Dune Littoral Rainforest.</td>
<td></td>
</tr>
</tbody>
</table>

See Attachment 3: School plan.
3. Management of resources

Woonona East PS will assess, reduce and monitor school resources eg water, energy, products, materials and waste. This will be facilitated by the Environment Group of the P&C together with the Principal on an annual basis using the SEMP as an audit tool.

It is important that the students have an integral role to play in the development of the SEMP, encourages ownership of the initiatives and provides opportunities for curriculum linkages. Identifying issues of resource management is an important part of the SEMP, and can be carried out readily by students.

Once the students have audited and identified issues for the management of resources, these will be incorporated and prioritized into a 5 year plan in this SEMP.

The school will carry out a waste audit workshop facilitated by Wollongong City Council to understand our resource use and develop a plan to improve our processes and ethos on responsible resource management (reduce/reuse/recycle). This will be a student-led process.
Evaluating, monitoring and reporting

Evaluating, monitoring and reporting are fundamental and continuing aspects of implementing environmental education.

In the first instance, students should participate in an auditing process which is checked and augmented by teachers/community members. This audit should feed into the identification of environmental issues (Appendix 1). Based on these issues, an action plan will be developed based on achievable objectives. This action plan will be incorporated into this SEMP as version 2 and the strategies will be progressively implemented.

Reporting on the implementing of the strategies will be made annually to the principal and P&C.

References


www.det.nsw.edu.au
### Appendix 1: Management of Resources

**Identification of key issues for Woonona East Primary School**

<table>
<thead>
<tr>
<th>Issue</th>
<th>What do we want?</th>
<th>What can we do?</th>
</tr>
</thead>
</table>
| **Air** | We want air that is clean and enhances a quiet surrounding | - Encourage walking to school – P&C to lobby WCC to establish a path link between the bike path and the school.  
- P&C to lobby WCC & RTA to establish traffic management strategies on Lighthorse Drive to improve safety for children crossing the road.  
- Use public transport, car pools etc.  
- Maintain school machinery to keep emissions clean.  
- Rehabilitate any dust patches.  
- Minimize school machinery eg rake rather than blower.  
- Reduce noise by planting vegetation along boundaries that border roads and railway.  
- Furnish classrooms with noise reducing furnishings.  
- Promote quiet surroundings with signage on Pioneer Road eg ‘please drive quietly’. |
| **Water** | We want an environment that has clean water, and use water minimization practices. | - Install half flush toilets, and taps with time push handles in toilets.  
- Investigate how we can reuse water from bubblers eg diversion to a tank for use on the gardens.  
- Develop a water conscious culture that aims to minimize our water consumption by adopting water wise methods (need to brainstorm these).  
- Plant plants that require minimal watering such as natives.  
- Collect rainwater with a rainwater tank to be used on the gardens.  
- Use brooms rather than hoses to clean paths.  
- Mulch garden beds to retain water in the soil. |
| **Land** | We want plants in our school to be local to our | - Remove weeds/exotic plants as these compete with natural species.  
- Ensure there is sufficient vegetation to provide shade, windbreaks and noise |
<table>
<thead>
<tr>
<th>Area</th>
<th>We want to promote vegetation that is endangered or rare and minimize our impact on the plants.</th>
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<tbody>
<tr>
<td></td>
<td>barriers.</td>
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<tr>
<td></td>
<td>• Encourage and promote the growth and development of native species and construct garden areas.</td>
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<tr>
<td></td>
<td>• Attempt to source community groups, council and environmental agencies that can provide support and advice with the gardens, garden layout, growth and development of local native species.</td>
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<tr>
<td></td>
<td>• Maintain the plants in a healthy and attractive manner.</td>
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<tr>
<td></td>
<td>We want to minimize our impact on the soil.</td>
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<tr>
<td></td>
<td>• Ensure that there are adequate pathways through gardens to prevent erosion.</td>
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<tr>
<td></td>
<td>• The soil is monitored and kept in good quality to support healthy plants. It will be given appropriate fertilisers.</td>
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<tr>
<td></td>
<td>• We will use soil from a school composter on our gardens.</td>
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<td></td>
<td>• We don't tip oil, paint or other chemicals onto the gardens and grass. We encourage the appropriate use and disposal of any of these products.</td>
</tr>
<tr>
<td></td>
<td>We want to minimize our impact on animals</td>
</tr>
<tr>
<td></td>
<td>• Ensure the school has native plants and environment that provide shelter and food for lizards, birds and other native animals.</td>
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<tr>
<td></td>
<td>• Actively discourage rabbits, dogs and cats in the school particularly around newly planted areas.</td>
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<tr>
<td></td>
<td>• We are mindful of the impact of introduced species (Myna bird) and discourage them in our school environment.</td>
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<tr>
<td>Energy</td>
<td>We want to use less energy and be more efficient whilst using cleaner types.</td>
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<tr>
<td></td>
<td>• Turn off heaters/coolers when not needed.</td>
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<tr>
<td></td>
<td>• Place stickers near lights and fans as reminders to turn them off.</td>
</tr>
<tr>
<td></td>
<td>• Encourage children to wear weather appropriate clothing.</td>
</tr>
<tr>
<td></td>
<td>• Turn off lights when not in use in the classroom.</td>
</tr>
<tr>
<td></td>
<td>• Switch off the computers or preset them to low energy modes when they are not being used.</td>
</tr>
<tr>
<td></td>
<td>• Consider swapping to a solar generator for the hot water system in the school.</td>
</tr>
<tr>
<td></td>
<td>• Ensure school buildings are properly insulated.</td>
</tr>
<tr>
<td></td>
<td>• Consider the installation of awnings or blinds to provide shade to school.</td>
</tr>
</tbody>
</table>
| Buildings in summer. | Placement of school buildings should capitalize on the winter sun for rooms facing north.  
| | Have carpet/rugs for warmth.  
| | Install thermometers in classrooms with guidelines for temperatures.  
| | The school’s electrical appliances are 5-star rated for efficiency.  
| | Monitor the school’s energy efficiency.  
| Waste | We want to reduce, recycle and/or reuse our waste.  
| | Encourage classes to make sure that our food is not over packaged with plastic.  
| | The canteen stocks items with minimal wrapping.  
| | Our classes try not to use too much paper.  
| | The teachers, parents, and canteen attempt to use ceramic mugs instead of plastic cups.  
| | We reuse the backs of faxes in our photocopiers, computer printers and for artwork.  
| | Plastic bags are reused wherever possible and we wash and reuse resealable plastic bags in our lunch boxes.  
| | We use both sides of paper sheets.  
| | We make a composter for the collection of our food scraps and ultimate use on our gardens and place our food scraps into bins to be used in the composter. Consider eventually a worm farm.  
| | We reuse empty household items (eg egg cartons, corks) for our art and craft.  
| | The school buys items made from recycled paper.  
| | We sort our litter by placing paper, glass, plastic, tin, bottles, and cardboard into specially marked bins that are collected by the council both in the playground and in the classroom.  
| | We contact a local collection agency (Flagstaff) to collect our crushed cardboard.  
| | Our school has a second hand uniform and clothing pool.  


## Appendix 2: Species Lists (from NSW NPWS, 2002 Bioregional Assessment)

<table>
<thead>
<tr>
<th>Community</th>
<th>Emergent trees 15-20m</th>
<th>Trees 8-12m</th>
<th>Shrubs 1-10m tall</th>
<th>Ground Covers 0-1m</th>
<th>Vines and climbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hind-Dune Littoral Rainforest</td>
<td>Eucalyptus botroides, Eucalyptus robusta</td>
<td>Endiandra sieberi, Pittosporum undulatum, Planchnonella australis, Acmema smithii, Guioa semigluaca, Rapanea variabilis, Acronychia oblongifolia, Alphitonia excelsa, Podocarpus elatus, Celtis paniculata, Banksia integrifolia sub sp integrifolia, Catnium coprosmoides, Pararchidendron pruinum var. pruinum, Euroschinus falcate var. falcate</td>
<td>Breynia oblongifolia, Clerodendrum tomentosum, Notelaea venosa, Pittosporum revolutum</td>
<td>Commelina cyanea, Oplismenus imbecillis, Lomandra longifolia, Pellaea falcate, Asplenium flabellifolium, Doodia aspera, Viola hederacea</td>
<td>Geitonoplesium cymosum, Cayratia clematidea, Maclura cochinchinensis, Marsdenia rostrata, Smilax glycyphylla</td>
</tr>
</tbody>
</table>

| Coastal Swamp Oak forest               | N/A                   | Casuarina glauca |                            |                    | Phragmites australis, Juncus kraussii subsp. Australiensis |

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Shrubs 1-2m tall</th>
<th>Ground Covers 0-1m tall</th>
<th>Vines and Climbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Trees – Tall shrubs 5-7m tall</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coastal Sand Scrub</td>
<td>Banksia integrifolia subsp. Integrifolia. Leptospermum laevigatum</td>
<td>Acacia longifolia var. sophorae, Correa alba var alba, Monotoca scoparia, Atriplex australasicus, Leucopogon parviflorus, Breynia oblongifolia, Monotoca elliptica, Westringia fruticosa</td>
<td>Lomandra longifolia, Hibbertia scandens, Commelina cyanea, Carpobrotus glaucescens, Pelargonium australe, Dichondra repens, Cynodon dactylon, Isolepis nodosa, Tetragonia tetragonioides</td>
<td>Cayratia clematidea, Clematis glycinoides</td>
</tr>
</tbody>
</table>
## Appendix 4: Existing gardens species lists

<table>
<thead>
<tr>
<th>Location/Name</th>
<th>Species</th>
<th>Date planted/established</th>
</tr>
</thead>
</table>
| Bush tucker garden | *Dianelle carpellon*  
*Carposbrotus glaucescens (pigface)*  
*Acmena smithii (lilly pilly)*  
*Melaleuca (tea tree)*  
*Indigofoa australe*  
*Podocarpus elata (plum pine)*  
*Rubus hillii (native raspberry)*  
*Clochidian ferdinandii*  
*Hibiscus heterophyllus*  
*Hibiscus splendes*  
*Smilax australis*  
*Brachychiton acerfolios*  
*Syzygim oleasum* | June 2008 |
| Rainforest garden | *Prosthanera*  
*Pollia crispa*  
*Callitrus sp*  
*Poorinda Ballerina*  
*Westringia fruiticosa*  
*Cordyline petolans*  
*Doryphora sassafras*  
*Polisinus*  
*Eriostemon myoporoides*  
*Livistonia australis*  
*Persoonia umbefolia*  
*Archantophoenix cunninghamiana*  
*Swainsonia greyourn*  
*Citreobatus paucifolris*  
*Melaleuca*  
*Pratia puberula*  
*Tree fern*  
*Bleeding heart*  
*Gymea lilly*  
*Birdsnest*  
*Native frangapanni*  
*Stereocarpus salguas*  
*Hardenbergia violacea*  
*Myoporum parvifolium*  
*Elaeocarpus reticulates*  
*Backhousia citriodora* | June 2008 |
| Tyre garden | Established June 2007 with frog pond. Area infilled with *Westringia fruiticosa*, | Established June |

<table>
<thead>
<tr>
<th><strong>Location</strong></th>
<th><strong>Details</strong></th>
<th><strong>Year</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Flagpole garden</td>
<td>Variety of grasses</td>
<td>May 2008</td>
</tr>
<tr>
<td>Corinda Road fenceline (inside school grounds)</td>
<td>60 plants. This planting was unsuccessful, May 2009 no plants survived – reasons unknown, suspected maintenance issues eg mowing.</td>
<td>September 2008 – part of National Tree Day</td>
</tr>
<tr>
<td>Railway Pds fenceline (inside school grounds)</td>
<td>20 plants. This planting was unsuccessful, May 2009 no plants survived – reasons unknown, suspected maintenance issues eg mowing.</td>
<td>September 2008 – part of National Tree Day</td>
</tr>
</tbody>
</table>
| Fenceline between oval and playground | 2 x *Syzygium paniculum*  
2 x native frangipani  
Unsuccessful – suspected maintenance issues eg mowing.                                                                                                      | September 2008 |
| Oval western fenceline               | 1 x Illawarra Flame *Brachychiton acerifolius*  
3 x native frangipani                                                                                                                                         | September 2008 |
| Vegetable Garden                     |                                                                                                                                                                                                        | October 2008 |
### Appendix 5: Priorities

<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
</tr>
</thead>
</table>
| **2006** | • Office garden  
• Animal figures |
| **2007** | • Purchase the garden shed  
• Establish the wetland/frog pond garden (*learnscape*)  
• Establish the garden near the flagpole (*social zone*)  
• Establish the office garden (*landscaping*)  
• Develop native animals for movement around the school (*learnscape tool*) |
| **2008** | • Establish Bush Tucker garden/rainforest garden (*learnscape*)  
• Establish vegetable garden (*learnscape*)  
• Establish chook run (*learnscape*)  
• Windbreak along fencelines (Under-plant the trees in the Street frontage zone with banksias, lilly pilly, leptospermum to create a large shrub/small tree layer to encourage birds and create a barrier from wind and noise (*landscaping*)  
• Augment the *Social/learnscapes* zones (frog pond and umbrella areas) with more planting and ongoing maintenance.  
• Establish preliminary composting system.  
• Planted locally endemic plants in the library (*social zone*) |
| **2009** | • Interpret the existing learnscapes with signage and create a resource material on the landscape.  
• Conduct waste audit workshop  
• *Casuarina* grove rehabilitation  
• Australian animals need repair and replacement (consider different material) |
| **2010** | • Composting system to use not only canteen vegetable scraps but packed lunch scraps too.  
• Create a ‘learnscape’ in the *Casuarina* grove near the toilets. This will involve creating paths and garden beds and planting the garden beds up. This is envisaged to be another learnscape that children can experience (Coastal Swamp Oak Forest) with tricky little pathways for them to play on.  
• Reassess the reduce/reuse/recycle processes for the school in light of the findings from the Waste Audit Workshop 2009. |