Greening Australia’s Biodiversity Audit Pack
Introducing the ResourceSmart AuSSI Vic Biodiversity Module

Partners and Supporters:

[Logos of RACV, Department of Education and Early Childhood Development, Australian Sustainable Schools Initiative, ZOOS Victoria]
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INTRODUCTION FOR TEACHERS

1.1 AuSSI Schools

Schools throughout Australia are using less energy, saving water and producing less waste thanks to AuSSI – the nationally accredited Australian Sustainable Schools Initiative.

1.2 ResourceSmart AuSSI Vic

Each State has its own version of AuSSI. Schools can be registered to become an AuSSI school by contacting CERES on (03) 9380 1556.

There are 5 separate modules:
- Core (to engage the whole school);
- Energy
- Waste
- Water
- Biodiversity

NB: Schools within the Shire of Yarra Ranges can gain AuSSI accreditation via the Shire’s Learning for Sustainability program. Call (03) 9294 6391 for more information.

1.3 Biodiversity Up Close

AuSSI schools can become models for biodiversity conservation by
- Incorporating biodiversity conservation into their curriculum;
- Conducting a ‘Biodiversity Audit’ of their school grounds; and
- Establishing a practical ‘Action Plan’ to enhance their school grounds in terms of biodiversity conservation.
In Victoria, the Department of Primary Industry’s LandLearn Team has produced ‘Biodiversity Up Close’, a comprehensive education and auditing tool to help schools undertake the ResourceSmart AuSSI Vic Biodiversity Module.

The entire package including links to the Victorian Essential Learning Standards, teacher background notes and student activity sheets can be downloaded via [www.landlearn.net.au](http://www.landlearn.net.au) (go to resources then to ‘Biodiversity Up Close’).

### 1.4 Introducing the Biodiversity Module

Greening Australia helps schools on their journey with the nationally accredited AuSSI Vic Biodiversity Module by providing:

- **Incursions** to
  - introduce staff and students to ResourceSmart AuSSI Vic;
  - introduce students to the principles of sustainability and the concept of biodiversity conservation in their school grounds;
  - start the student based ‘Biodiversity Audit’ of the school grounds;
  - help schools decide on an ‘Iconic Species’ that the school can focus on for future activities;
  - assist schools in developing an ‘Action Plan’ to enhance school properties for biodiversity conservation.

- **Links** between schools and their local conservation organisations such as Landcare and ‘friends of’ groups; and

- **Excursions** to existing revegetation sites close to and/or relevant to specific schools.

### 1.5 The School Ground Biodiversity Audit and Action Plan

Major features of each AuSSI module are the ‘Audits’ and ‘Action Plans’.

For example, in the Water Module, schools typically carry out an audit of water consumption around the school. In so doing, areas of potential savings can be identified. The school’s Action Plan then involves planning to install water saving habits and devices to reduce water consumption.

Features of the AuSSI Biodiversity module also include an auditing and planning process. This provides an ideal opportunity for students to be involved and for biodiversity conservation to be integrated into the curriculum.
Again, refer to www.landlearn.net.au (go to resources then to ‘Biodiversity Up Close’) for the entire package including links to the Victorian Essential Learning Standards, teacher background notes and student activity sheets.

Zoos Victoria also provides support to schools conducting Biodiversity Audits and Action Plans. AuSSI schools undertaking the Biodiversity Module are encouraged to visit the Healesville Sanctuary (ph 59 5 2800), Melbourne Zoo (ph 92859355) or the Werribee Open Range Zoo (ph 97319630), where students can experience activities with a focus on an ‘icon species’ relevant to their school.

This document, adapted from the DPI LandLearn ‘Biodiversity Up Close’ package, aims to assist schools to independently conduct their School Ground Biodiversity Audits and Action Plans.

1.6 A Quick School Ground Habitat Assessment

To assist in the auditing process, Biodiversity Up Close provides the following ‘Quick School Ground Habitat Assessment’ tool.

By determining a score for each ‘attribute’ in the table below, schools can establish their Biodiversity Audit score. It is this score that should be provided to CERES for accreditation (see 1.2).

A full size, easy to photocopy, version of this table is provided on page 20 as Activity 13.
## Quick School Ground Habitat Quality Assessment

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Ranking</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Trees/ha = number of trees number of hectares in the school</td>
<td>&lt; 10 trees / ha Red</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 – 20 trees / ha Yellow</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 20 trees / ha Deep Green</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Number of Habitat Trees/ha = number of habitat trees number of hectares in the school</td>
<td>No large trees Red</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt; 5 habitat trees/ha Orange</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 – 10 habitat trees/ha Yellow</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 10 habitat trees/ha Light Green</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 10 native habitat trees/ha Deep Green</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Understorey and Vegetation Structure Underline when present: Understorey: Shrub (1-5m), Small Shrub &lt; 1m, Tall grass &gt; 1m, Scrambling climber Herb-layer: Fern, Moss, Lichen, Orchids, Native Grasses &lt; 0.5m, Other</td>
<td>&lt; 5% understorey cover in the school ground Red</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 – 15% understorey cover in the school ground Yellow</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 – 25% understorey cover in the school ground Light Green</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 25% understorey cover in the school ground Deep Green</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 20% native understorey cover in the school ground Deep Green</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Environmental Weeds</td>
<td>No action taken to identify or remove weeds Red</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weeds present - some action taken to manage weeds Yellow</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No weeds present Deep Green</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Organic Litter = Organic litter includes leaves, twigs, small branches, twigs and mulch &lt; 30 cm circumference</td>
<td>&lt; 25% cover of organic litter in gardens Red</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25 – 49% cover of organic litter in gardens Orange</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50 – 74% cover of organic litter in gardens Yellow</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>75 – 95% cover of organic litter in gardens Light Green</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100% cover of organic litter in gardens Deep Green</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Logs and Rocks/ha = number of logs and rocks number of hectares in the school</td>
<td>No Logs or rocks Red</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 – 5 logs or rocks/ha Yellow</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 5 logs or rocks/ha Deep Green</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Soil Management</td>
<td>Soil management issues present, no action or plan to manage these Red</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soil management issues present, some attempt made to manage these Yellow</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soil managed effectively Deep Green</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Habitat Extras Underline when present: Composting area, Vegetation garden/ orchard, Lids on bins or bins located inside the buildings, Indigenous plant propagation, Lizard lounge, Plants and/or animals in the classroom, Prog pond/wetland. Plan to decrease rubbish in the school ground, Bird bath, Indigenous food garden, Plants (Flora) in the school ground identified and labelled, Nest boxes, List of animals (fauna) in the school ground maintained. Limited spraying of chemicals in the school ground. Fallen branches and leaf litter remaining in garden beds. Water from taps used to water gardens, Native plants naturally regenerating. Other</td>
<td>0 enhancements underlined Red</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt; 3 enhancements underlined Orange</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 – 6 enhancements underlined Yellow</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 – 10 enhancements underlined Light Green</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 10 enhancements underlined Deep Green</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL (out of 100)**

**Aim for score > 75**

Table 1. Example of Quick School Ground Habitat Assessment
### 1.7 Planning for Improved Biodiversity Values

By reflecting on ‘attributes’ for which the school grounds have not acquired an ideal score, an ‘Action Plan’ can be developed.

For example, many school grounds score well for ‘Number of Trees/ha’ but do not score well for ‘Number of Habitat Tree/ha’. This is typically because older trees that provide potential nesting hollows are removed from school grounds for safety reasons. Consequently, an ‘Action’ could include construction of nesting boxes. Trees with nesting boxes could then count as ‘Habitat Trees’ during future audits, thus improving the score.

There are many ways an Action Plan can be presented. The following table (also adapted from ‘Biodiversity Up Close’ is not a bad way to start.

#### Student Worksheet: Action Plan for Biodiversity - Habitat Quality

<table>
<thead>
<tr>
<th>Issue</th>
<th>Current rating (Red – Green)</th>
<th>Current score</th>
<th>Priority for improvement (High, Medium, Low)</th>
<th>Goal Score</th>
<th>Action Required (Yes/No)</th>
<th>Actions - long and short term (Who, what, when, where, how)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Trees/ha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Habitat Trees/ha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understorey and Vegetation Structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Weeds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic Litter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logs and Rocks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Habitat Extras</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Example of Biodiversity Action Plan
2. About the Activities – Notes for Teachers

2.1 Mapping Your School

Much of the school ground audit is linked to the size of the school. For example, to determine the ‘Number of Tree/ha’ it is necessary to know how large the school grounds are.

The actual size of the school in hectares can simply be determined from a titles map. However, this will miss a great opportunity to involve students in the mapping process and integrating biodiversity conservation into IT and/or Maths classes.

Activities 1 – 3 have been designed to involve students in determining the size of their school grounds in hectares.

The biodiversity of a school includes all living things that can be found within the school environment. This includes all plants and animals including people. However, for the purposes of a biodiversity audit, many parts of a school are not particularly valuable in terms of biodiversity conservation. Buildings together with hard surfaces like car parks and asphalt play areas have very limited habitat value.

Activity 4 & 5 has been designed to assist students to understand some of the practical limitations of a school property in terms of biodiversity conservation. (These activities are optional, depending on the mathematic skill levels of students).
### 2.2 Conducting the Biodiversity Audit

To conduct a comprehensive biodiversity audit of a property would normally require an enormous effort well beyond the scope of primary or secondary students.

The ‘Biodiversity score’ acquired via the Quick School Ground Assessment Tool provides a relative indicator of the biodiversity values of a school ground and a convenient way for schools to compare results. If integrated into the curriculum and done each year, the Biodiversity Score allows schools to monitor the success of Actions taken to enhance Biodiversity values of the school grounds.

**Activities 6 to 13** are designed to help students assess the following:

- **Trees (dead and alive)** because large trees are natures sky scrapers providing food and shelter (habitat) for many different kinds of animals.
- **Habitat Trees** (being trees with hollows for the purposes of this exercise), as these provide homes for reptiles, mammals and birds.
- **Understory and vegetation structure** because trees are not the only types of vegetation that can provide habitat for living things (many areas throughout Australia are naturally treeless).
- **Weeds** because many plants can reduce the habitat values of an area by smothering other plants and/or not providing food and shelter to animals.
- **Organic litter (mulch, leaves, twigs...)** because this provides homes and food for many small creatures such as worms, insects and spiders... These in turn are essential for healthy food chains. Organic litter also breaks down to recycle nutrients for plants and keeps the soil moist and healthy.
- **Logs and rocks** because these can also provide habitat for small creatures.
- **Soil management** because bare and eroded areas tend to be detrimental to biodiversity conservation.
- **Habitat extras** because there are many other things that can be done to increase biodiversity within school grounds.
2.3 Developing an Action Plan for Biodiversity

Activities 14 – 16 are designed to involve students in the development of school ground Action Plans.
As Greening Australia would love to stay in touch with schools that have conducted Biodiversity Audits and established Action Plans to improve their school grounds, please send a copy of a completed initial ‘Quick School Ground Habitat Assessment’ form (Activity 13) to Greening Australia together with samples of the Action Plan submissions (as per Activity 15).

Please send these to:
Schools Program Coordinator
Greening Australia
10 Buckingham Drive, Heidelberg Vic 3084
T: 03 94505321
F: 03 94573687
M: 0418 338 834
Activity 1. Mapping Your School

To begin a school ground biodiversity audit, it is necessary to first determine how big the school is. One way is to have access to a gridded aerial photograph of the school similar to the one below.

Maps can be downloaded from the Google Earth mapping tool found at http://earth.google.com as follows:

**Step 1.** Enter your school name and suburb in the ‘Fly to’ search engine.

**Step 2.** Zoom in on your school until it fills the frame of the screen; rotate the image so that the school boundaries are as square as possible to the frame.

**Step 3.** Click on ‘Edit, copy, copy image’.

**Step 4.** Paste the image into a blank Word Document – drag the corners of the image to make them fit the size of the page.

**Step 5.** Create 3 separate maps, one as close as possible, another showing the land within about 1km around the school and a third showing the land within about 5km.

**Step 6.** Draw a grid of 1cm squares over the close-up map.

**Step 7.** Count the number of 1cm squares covering the entire school (note: 2 half squares make one whole square).

**Questions**

1. How many 1 cm square boxes covered the entire school on the close up map? ____

2. Does the school ground contain any remnant natural bush? ______________
3. Is the school beside any remnant natural bushland? _____________

4. Is there any remnant natural bushland on the map that shows up to 1 km from the school? _____________

5. Is there any remnant natural bushland on the map that shows up to 5 km from the school? _____________
Activity 2. Measuring Your School

1. Work out the area of your school in square metres (m²)

Using a trundle wheel or long tape measure, students can measure the perimeter of their school in metres.

For rectangular shaped schools the total area in square metres can be calculated using the basic formulae of Area = Length x Width.

For triangular shapes the formulae is Area = (L x W) / 2. It may be necessary to calculate sections of the school grounds and add them together.

If the school is an irregular shape (and most are), the area of the school can still be worked out quite accurately as follows.

Step 1. Select a large, easy to measure, rectangular area of the school (e.g. a building or basketball court).
Step 2. Measure the length and width of this area.
Step 3. Calculate the surface area of this part of the school in square metres.
Step 3. Draw 1cm squares over the building on the gridded map and count them.
Step 4. With a little bit of algebra, the surface area of the school grounds can be calculated as follows:

Total area = \text{total number of boxes on the map} \times \text{area of sample building of the school} \div \text{number of 1cm boxes over the sample building}

Question

What is the area of your school in square metres? __________________________
Activity 3. Converting area from m² to hectares (ha)

Knowing the area of your school in hectares is important as this allows comparisons to be made between schools of different sizes.

As there are 10,000 square metres in 1 hectare, simply divide the total number of square metres (worked out above) by 10,000.

*For example, a school that is 7,500 m² will be 0.75 or ¾ of a hectare in size.*

**Question**

What is the area of your school in hectares? ____________________________________________
Activity 4. Surfaces Around Your School

Your school will have different types of surfaces.

There will be buildings, other hard impermeable surfaces (such as car parks and basketball courts) and what we call ‘soft areas’.

Soft areas are all play areas, remnant bush, lawns and gardens.

Calculate the percentage of each type of surface area in your school as follows:

**Step 1.** On the gridded map of your school, lightly colour in all buildings using one colour and all impermeable surfaces with another colour (be sure not to colour them too heavily so that the grid can still be seen).

Do not colour in the soft surfaced areas yet.

**Step 2.** Count the number of 1cm square boxes that are covered by each surface types and put you results in the table below. (Remember, two half squares = 1 full square).

**Step 3.** Calculate the percentage of each surface type by dividing the above result by the total number of squares and then multiplying by 100. Add your results to the table below.
<table>
<thead>
<tr>
<th>Surface Type</th>
<th>B number of 1cm² boxes covering this surface type on your map</th>
<th>C B ÷ total number of 1cm² over entire school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard impermeable surfaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soft surface</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 3**

NB: The total in column D should be 100%

**Question**

What type of surfaces do you think are valuable for biodiversity conservation?

___________________________________________________________________________
Activity 5. Surfaces Around Your School (continued)

During Activity 4 you will have discovered that some of your total school grounds (buildings and hard surfaces) may not provide much opportunity for biodiversity conservation.

We will now focus on the ‘soft surfaces’ such as play areas, remnant bush, lawns and gardens. Your school is likely to have several different types of soft surfaces.

Estimate the area of each type of soft surfaces as a percentage of the total soft areas and the total area of the school.

<table>
<thead>
<tr>
<th>A</th>
<th>Soft Surface Type</th>
<th>B Estimated % of total ‘soft areas’</th>
<th>C Estimated % of total school area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grassy play areas such as football/soccer grounds. These areas are likely to be covered in ‘exotic’ (non-native) grasses.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-playing areas that are also covered by exotic grasses. If the area is frequently mown it is unlikely to support native grasses.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-playing areas that are dominated by native grasses (not likely to be mown frequently).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Areas dominated by trees and shrubs. Such areas could be mainly native or they may be dominated by exotic (introduced) plants.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Orchards and/or food gardens</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mulched areas without plants</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bare ground</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Question

What soft area do you think are valuable for biodiversity conservation?

_______________
Activity 6a.  Trees – Dead or Alive

Large trees (dead or alive) are nature’s sky scrapers, providing food, homes and shelter for all kinds of animals.

Your Aim is to identify the habitat value of trees in your school grounds.

During a walk around your school grounds your task is to count every large tree that has a trunk with a circumference of more than 220cm (at a height of about 130cm).

For each tree, determine the following:
- is it a native (indigenous) tree or an introduced (exotic) tree?
- is dead or alive?
- Does it have hollows for animals to nest in (i.e. a habitat tree)?

Keep a tally of your findings and complete the table below:

<table>
<thead>
<tr>
<th>A Type of tree</th>
<th>B Tally (i.e. number of trees)</th>
<th>C Total number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native / Alive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>without hollows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native / Alive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>with hollows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native / Dead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without hollows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native / Dead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>with hollows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (natives)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exotic / Alive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without hollows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exotic / Alive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With hollows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exotic / Dead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without hollows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exotic / Dead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With hollows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL NUMBER OF TREES</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Question

What is the total number of trees at your school? ______________ (i.e. total in column C)

What is the total number of Habitat Trees? ______________ (i.e. add up rows ‘with hollows’)

Activity 6b. Trees – Habitat Score

As schools come in many different sizes, it is not simply the number of trees that are important. The Habitat score achieved by each school is determined by the number of trees per hectare (calculated in Activity 3).

Use the following formulae to calculate the number of large trees per hectare at your school:

\[
\text{Number of Trees/ha} = \frac{\text{number of Trees}}{\text{number of hectares}}
\]

If your school has less than 10 Trees per hectare, the score is unfortunately ‘0’.
If your school has between 10 and 20 Trees per hectare, the score is a wonderful ‘5’.
If your school has more than 20 Trees per hectare, the score is whopping ‘10’.

.Question
What did your school score for ‘Trees’? ____________________________
Activity 6c. Habitat Trees – Habitat Score

Trees with hollows are most important as they provide homes for animals as well as food and general shelter. Using the same process as in Activity 6b, calculate the number of ‘Habitat Trees’ per hectare in your school. As trees can take many decades to develop natural hollows, for the purposes of this audit, we can consider trees upon which nesting boxes have been placed as ‘Habitat Trees’

Number of Habitat Trees/ha = \frac{\text{number of Habitat Trees}}{\text{number of hectare}}

If your school had no Hollow Trees, the score is unfortunately ‘0’.
If your school has less than 5 Hollow Trees per hectare, the score is just ‘2’.
If your school has between 5 and 10 Hollow Trees per hectare, the score is a wonderful ‘5’.
If your school has more than 10 Hollow Trees per hectare, the score is an impressive ‘7’.

**BONUS POINTS**

As native (indigenous) trees generally have better habitat value than non-native trees, the score is a whopping ‘10’ if your school has 10 or more native hollow bearing trees per hectare.

**Question**

What did your school score for ‘Habitat Trees’?  ___________________________
**Activity 7a. Understorey and Vegetation Structure**

Trees are obviously important for many animals. However, shrubs, bushes and even native grasses are also important. In some parts of Victoria, such as the grassy western plains, ground covering plants are even more important to many animals than trees are.

Did you know that 30% (almost a third) of Victoria was once covered in native grasslands? These were very diverse environments made up of many different types of plants (not just grass). Today, less than 1% of the original grasslands remain.

**Your Aim** in this activity is to estimate how much of your school grounds have understorey. During a walk around your school grounds **your task** is to identify the ‘soft surfaced’ areas that include bushes, shrubs and tall grasses. On the gridded map of the school used in Activity 4, shade those areas of the grounds which have understorey plants. (Use a different colour).

**Question**

How many $1\text{cm}^2$ boxes covered ‘soft surfaces’ on your gridded school map? _____________

(see Table 3)

How many ‘soft surface’ $1\text{cm}^2$ boxes included vegetation with structure. i.e. where bushes, shrubs and/or native grasses could be found? _____________

What percentage of ‘soft surfaces’ include understorey vegetation? _____________

To answer this question, use the answers above and the formulae below:

\[
\% \text{ of school grounds (soft surfaces) with understorey} = \frac{\text{Number of boxes with understorey}}{\text{Total number of boxes covering the school’s soft surfaces}} \times 100
\]
Activity 7b. Understorey – Habitat Score

For schools with less than 5% understorey within their soft surface areas the score is a poor ‘0’.
If your school has between 5% and 15%, the score is a wonderful ‘7’.
If your school has between 15% and 25%, the score is a massive ‘13’.
If your school has more than 25%, the score is a whopping ‘19’.

BONUS POINTS

As native (indigenous) plants generally have better habitat value than non-native plants, the score is an incredible ‘25’ if your school has more than 25% indigenous understorey cover within its soft surfaced areas.

Question

What did your school score for ‘Understorey Vegetation’? ____________
Activity 8a. Environmental Weeds

A weed is any plant growing where you do not want it to grow. An ‘environmental weed’ is a plant that is not good for the natural environment.

Environmental weeds may smother other plants and/or not provide habitat (food and shelter) for native animals. Environmental weeds are usually plants that have been introduced from other countries and easily spread. They usually compete with native plants for light, space, water and nutrients.

Your Aim in this activity is to see if you have a weed problem in your school grounds.

During a walk around your school grounds your task is to identify any of the following plants and mark where you saw them on your gridded map of the school. This list includes only some of the worst and most obvious weeds. Your local council will have a list of more weeds in your area.

Blackberry  Ivy  Agapanthus  Wandering Trad  Nightshade  Spanish Heath  Wild tobacco-tree  Creeping buttercup  Blue periwinkle  Pampas grass  Hawthorn  Thistles  Angle Onion Weed  Willow  Cootamundra wattle

As a class, discuss the issue of weeds. Can trees be weeds? Can native Australian plants be weeds? Are there weeds around your school? Is anything being done about weeds in your school?
Activity 8b. Weeds – Habitat Score

For schools with lots of weeds in their school grounds and who are doing nothing about it, their weed score is unfortunately ‘0’.
If your school has some weeds but is trying to take action to remove them the score is a nice ‘8’.
If your school has no environmental weeds the score is a whopping ‘15’.

Question

What did your school score for ‘Weed Management’?
Activity 9a. Organic Litter

Organic litter includes mulch, leaves and twigs. Like understorey plants, organic litter is important because it provides food and shelter for small animals like worms, insects, and spiders... These in turn are important for other animals further up the food chains.

Organic litter also breaks down to recycle nutrients for plants and keeps the soil moist and healthy.

Your Aim in this activity is to identify the habitat value of organic litter in your school grounds.

During a walk around your school grounds your task is to discuss the issue of organic litter and determine how much of your gardens are mulched.

Question

Considering 25% is one quarter; 50% is half; 75% is ¾ and 100% is all of it, what percentage of your school gardens are covered in organic litter?  __________________
Activity 9b. Organic Litter – Habitat Score

Schools with less than 25% of their gardens mulched with organic litter score a poor ‘0’.
Schools that have mulched between 25% and 49% of their gardens score only ‘2’.
Schools that have mulched between 50% and 75% of their gardens score a big ‘5’.
Schools that have mulched between 75% and 99% of their gardens score an impressive ‘7’.
Schools that have mulched 100% of their gardens score a whopping ‘10’.

Question

What did your school score for ‘Organic Litter’? ________________
Activity 10a. Logs and Rocks

Logs and rocks are often overlooked when planning gardens but they make great places for small creatures to hide. They can make a garden look really interesting too.

Your Aim is to identify the habitat value of logs and rocks in your school grounds.

During a walk around your school grounds your task is to count every large log and rock that you can find. Mark these on your gridded map of the school grounds.

Question

How many logs (as thick or thicker than your ankle) did you find around the school grounds?  

How many rocks (bigger than you could easily pick up) did you find around the school grounds?
Activity 10b. Logs and Rocks – Habitat Score

Use the following formulae to calculate the number of rocks and logs per hectare at your school:

\[
\text{Number of rocks and logs/ha} = \frac{\text{number of rocks and logs}}{\text{number of hectares}}
\]

If your school has no rocks or logs in gardens the score is unfortunately ‘0’.
If your school has between 3 and 5 logs or rocks per hectare the score is a wonderful ‘3’.
If your school has more than 5 logs or rocks per hectare the score is an impressive ‘5’.

Question

What did your school score for ‘Logs and Rocks’?  ______________
Activity 11a. Soil Management

The health of our environment always comes back to how well we look after the soil. If the soil is unhealthy, plants will not grow well. If plants don’t grow well, there is little for animals to eat and/or shelter in.

Your Aim in this activity is to identify any areas of the school where the soil has not been well looked after.

During a walk around your school grounds your task is to answer the following questions.

Question

Is there any erosion present in the school ground? Yes / No
Is there any compaction present in the school ground? Yes / No
Is there any bare ground around the school due to the use of herbicides to control weeds? Yes / No
Are all garden beds in the school mulched? Yes / No
Are any areas of the school fenced off or replanted to reduce erosion and/or compaction? Yes / No
Activity 11b. Soil Management – Habitat Score

Schools that have ‘soil management’ problems such as erosion or compaction score ‘0’ if there has been no effort to fix the problem.
Schools that have ‘soil management’ problems such as erosion or compaction score a generous ‘3’ if the problems are being addressed.
Schools that have managed their soil effectively by mulching, fencing off sensitive areas and/or revegetating problem areas score an impressive ‘5’.

Question
What did your school score for ‘Soil Management’? ________________
Activity 12a. Habitat Extras

There are lots of ways that a school can improve the biodiversity values of their grounds. The following ‘Habitat Extras’ are just some ideas that many schools have used.

Place a tick besides each idea that your school has already taken up.

☐ Composting area    ☐ Vegetable garden / orchard

☐ Indigenous (bush tucker) gardens

☐ Lids on rubbish bins or rubbish bins inside to stop litter

☐ Indigenous plants identified and labelled in the grounds

☐ Plants and/or animals in the classroom

☐ Lizard lounge gardens (rocky area for lizards to sunbake)

☐ Indigenous plant propagation

☐ Frog bogs    ☐ Bird baths

☐ Nesting boxes for possums, birds and/or bats

☐ Others ideas (make a list)
Activity 12b. Habitat Extras – Habitat Score

Schools that have no ‘habitat extras’ score ‘0’.
Schools that can demonstrate only 1 or 2 habitat extras score just ‘5’.
Schools that have taken up between 3 and 6 habitat extra ideas score a great big ‘10’.
Schools that can demonstrate between 7 and 10 habitat extras score an impressive ‘15’
Schools that can demonstrate more than 10 habitat extra ideas score a massive ‘20’ points

Question

What did your school score for ‘Habitat Extras’?  

_____________
Activity 13. A Quick School Ground Habitat Assessment

Place your score for each assessment attribute in the table below and add up your final score.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Ranking</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Trees/ha = number of trees / number of hectares in the school</td>
<td>&lt; 10 trees / ha</td>
<td>Red</td>
<td>0</td>
</tr>
<tr>
<td>10 – 20 trees / ha</td>
<td>Yellow</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>&gt; 20 trees / ha</td>
<td>Deep Green</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Number of Habitat Trees/ha = number of habitat trees / number of hectares in the school</td>
<td>No large trees</td>
<td>Red</td>
<td>0</td>
</tr>
<tr>
<td>&lt; 5 habitat trees/ha</td>
<td>Orange</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>5 – 10 habitat trees/ha</td>
<td>Yellow</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>&gt; 10 habitat trees/ha</td>
<td>Light Green</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>&gt; 10 native habitat trees/ha</td>
<td>Deep Green</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Understorey and Vegetation Structure</td>
<td>&lt; 5% understorey cover in the school ground</td>
<td>Red</td>
<td>0</td>
</tr>
<tr>
<td>5–15% understorey cover in the school ground</td>
<td>Orange</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>15 – 25% understorey cover in the school ground</td>
<td>Yellow</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>&gt; 25% understorey cover in the school ground</td>
<td>Light Green</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>&gt; 25% native understorey cover in the school ground</td>
<td>Deep Green</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Environmental Weeds</td>
<td>No action taken to identify or remove weeds</td>
<td>Red</td>
<td>0</td>
</tr>
<tr>
<td>Weeds present - some action taken to manage weeds</td>
<td>Yellow</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>No weeds present</td>
<td>Deep Green</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Organic Litter = Organic litter includes leaves, twigs, small branches, tanbark and mulch &lt; 30 cm circumference</td>
<td>&lt; 25% cover of organic litter in gardens</td>
<td>Red</td>
<td>0</td>
</tr>
<tr>
<td>25 – 49% cover of organic litter in gardens</td>
<td>Orange</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>50 – 74% cover of organic litter in gardens</td>
<td>Yellow</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>75 – 99% cover of organic litter in gardens</td>
<td>Light Green</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>100% cover of organic litter in gardens</td>
<td>Deep Green</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Logs and Rocks/ha = number of logs and rocks / number of hectares in the school</td>
<td>No Logs or rocks</td>
<td>Red</td>
<td>0</td>
</tr>
<tr>
<td>3 – 5 logs or rocks/ha</td>
<td>Yellow</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>&gt; 5 logs or rocks/ha</td>
<td>Deep Green</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Soil Management</td>
<td>Soil management issues present, no action or plan to manage these</td>
<td>Red</td>
<td>0</td>
</tr>
<tr>
<td>Soil management issues present, some attempt made to manage these</td>
<td>Yellow</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Soil managed effectively</td>
<td>Deep Green</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Habitat Extras Underline when present!</td>
<td>0 enhancements underlined</td>
<td>Red</td>
<td>0</td>
</tr>
<tr>
<td>&lt; 3 enhancements underlined</td>
<td>Orange</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>3 – 6 enhancements underlined</td>
<td>Yellow</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>7 – 10 enhancements underlined</td>
<td>Light Green</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>&gt; 10 enhancements underlined</td>
<td>Deep Green</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL (out of 100) | Aim for score > 75
Activity 14. You are Ready to Plan for the Future

Any school that scores more than 75 points in the ‘Quick School Ground Quality Assessment’ has a great score for biodiversity conservation. Such schools are doing a great job for the conservation of our native animals and plants.

Questions

Are there any attributes that your school scored very well on? Yes / No

List these attributes. ____________________________________________________

Are there any attributes that your school scored very poorly on? Yes / No

List these attributes. ____________________________________________________

Are you pleased with the overall result of the biodiversity audit? Yes / No

List anything that you think would help your school maintain or improve its biodiversity audit score in the future.

___________________________________________________________

___________________________________________________________
Activity 15. Submitting Your Action Plan for Biodiversity

In Activity 14, you will have identified areas of your school grounds that need attention in order to improve your school’s overall Biodiversity score. This may include planting more indigenous vegetation, constructing a frog bog or lizard lounge, erecting nesting boxes or controlling certain weeds...

Working in small groups, produce submissions to your Principal and/or School Council suggesting various actions. This could be in the form of a letter, poster, power point presentation or even a short film... Be as imaginative as you like.

Regardless of the way you present your suggestions, be sure to include reasons why the action(s) would be good for your school along with who, what, when, where and how information.

For example, who will undertake the action (will the work be done by students, parents, the school gardener...)?

When? i.e. How urgent is the action? Should it be done really soon (short term), medium or long term?

Where? Include maps, plans and/or drawings...
Activity 16. Staying in Touch with Greening Australia

As Greening Australia would love to stay in touch with your school, please send a copy of a completed initial ‘Quick School Ground Habitat Assessment’ form (Activity 13) to Greening Australia together with samples of the Action Plan submissions. Please send these to

Schools Program Coordinator
Greening Australia
2 Park Drive, TEC Building #1, Suite 3
La Trobe R&D Park
Bundoora Vic 3083

T: 03 9450 5321
F: 03 9457 3687
www.greeningaustralia.org.au