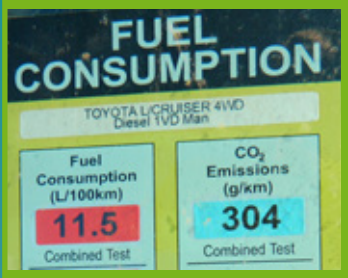
ALEP

16

Aboriginal Landcare Education Program

PARTICIPATE IN ENVIRONMENTALLY SUSTAINABLE WORK PRACTICES



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CONTENTS

PUBLICATION NOTES

BHP Billiton Iron Ore is proud to support Greening Australia to provide valuable conservation and land management training to communities throughout the Pilbara through the Indigenous Training Program.

This Learning Guide series has been developed as part of our partnership of the program.

Gavin Price, Head of Environment, BHP Billiton Iron Ore

Greening Australia is proud to produce and provide the comprehensive suite of new ALEP Learning Guides. The guides are compatible with the new horticulture and conservation industries training package and suited to developing skills in Indigenous communities within remote areas of the country where employment opportunities are limited. We would like to thank BHPBIO for their generous support in the development of the guides.

Brendan Foran, National CEO Greening Australia

The second series of ALEP Guides is aligned with a number of units of competence from the *Training Package AHC10 – Agriculture, Horticulture and Conservation and Land Management* (Release 8.0). The units selected are frequently used within Certificates I to III in Horticulture and Conservation and Land Management. As such they cover, where possible, the elements, performance criteria and required skills and knowledge of each unit.

The principal goal of these resources is to support the learning process; the learning activities may complement a trainer's assessment plan. The intent is that they will be used in an interactive manner with learners rather than as self-paced study guides. The structure and sequence have been designed to follow the logical steps of the practical tasks wherever possible. Concepts are introduced and then consolidated with discussion and/or practical activities.

The writers consider that these guides can provide a sound technical foundation but also strongly encourage trainers to complement the guides with additional, authentic resources from relevant industry texts and websites. The guides can be used in part or in their entirety but should always be linked to practical activities to strengthen the teaching and learning.

Genuine consideration was given to the level of language used in the guides. The goal has been to find a balance between simplifying the language to an accessible level and ensuring that the vocational concepts are addressed. The writers contend that with appropriate support these texts can provide an opportunity for students to strengthen their language, literacy and numeracy skills, which may be required for pathway progression.

A number of Aboriginal people have been involved in developing this ALEP Guide, which is considered suitable for use within a program based on Aboriginal pedagogies.

INTRODUCTION

Welcome to *Participate in environmentally sustainable work practices*. In this unit you will learn what sustainability means and how you can make your workplace a more efficient one.

This unit is not as practical as others in this series. You will be introduced to the basic science behind sustainability as well as the legislation. You will then look at your workplace procedures and plans to see what is already in place. The last part of the guide requires you and your work team to come up with ideas to make your workplace even more sustainable.

Sustainability is an important global issue. It requires people worldwide to become involved in implementing solutions.

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EQUIPMENT REQUIRED

To complete this training you will need the following:

1. Access to federal and state legislation
2. Workplace policies, procedures and Environmental Management Plan
3. Workplace organisational chart
4. Access to internet (not essential but preferred)

LEARNING ACTIVITIES

There are four kinds of activities to complete. These activities may go toward your final assessment.

SECTION	ACTIVITY	SATISFACTORY (Y/N)	DATE
RESEARCH ACTIVITIES			
1	Personal ecological footprint		
1.2	The carbon cycle		
1.3	Waterwise landscaping and irrigation		
2.2	State-based legislation		
DISCUSSION ACTIVITIES			
1.1	Biodiversity		
2.1	National legislation		
3	Workplace policies, procedures and plans		
5.1	Environmental hazards		
5.2	Reporting breaches		
WORKBOOK ACTIVITIES			
4	Environmental hazards – resource usage		
5.2	Reporting breaches		
6	Ideas for your workplace		
6	Improve sustainable work practices		
PROJECT			
5.3	Record resource usage		
6	Improve sustainable work practices		

1 WHAT IS SUSTAINABILITY?

NOTE

Traditional Aboriginal culture is all about sustainability. All Aboriginal cultures recognise the connection between all parts of the environment. Cultural ways of caring for Country make sure the land is protected for future generations. Looking after biodiversity and water management is very important.

Sustainability is a broad concept. To understand it you need to remember that Earth and its atmosphere form a system, and everything in the system is interconnected.

When something is sustainable it means that it can keep going. So when we talk about living sustainably we are talking about living in a way that means people in the future will be able to meet their needs.

If our goal is sustainability then we must only take, use and produce what Earth can manage. If we don't, there will not be resources for the people of the future.

Resources are the things we use: land, timber, metal, water, food, fuel, etc. The way we get, use and dispose of these resources is making our lifestyle unsustainable in many different ways.

The term **ecological footprint** describes how much land and water it takes to support a lifestyle or workplace. In Australia, we are using more resources than Earth can produce and we are creating more rubbish than Earth can dispose of. Australia has one of the largest ecological footprints per capita in the world.

RESEARCH ACTIVITY

Calculate your personal ecological footprint using the website listed in the *Resources* section or another recommended by your trainer.

Discuss the results with your work team.
Were you surprised by the size of your footprint?

R1

See Ecological footprint calculator *Resource R1*, page 28

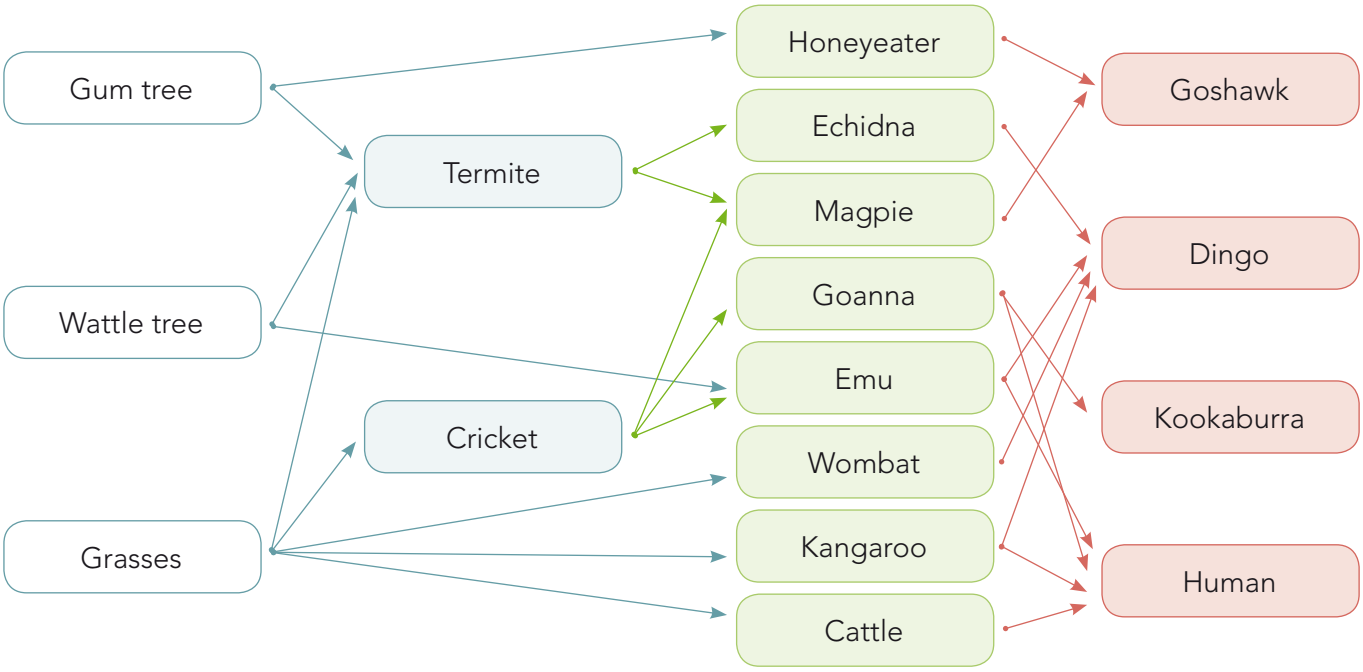
Sustainability is a global issue. Every country needs to think about its impact across the planet. The main areas to focus on are:

- Biodiversity
- Climate change
- Water shortage

1.1 BIODIVERSITY

The word biodiversity means many different kinds of life. Biodiversity is a good thing in an ecosystem because different plants, animals and micro-organisms do different jobs to keep the ecosystem going. This includes the roles they play in the carbon cycle (there will be more about this in the next section).

Biodiversity also supports a broad food web. This makes the ecosystem resilient, which means if one species has a poor year the remaining group of species will be able to survive.



Biodiversity is an important aspect of sustainability, and so we need to monitor activity that threatens it.

Conservation Land Managment (CLM) workers often participate in biodiversity survey work. This assists with monitoring impacts, such as development, on the biodiversity of a region. Survey data from a pristine area is very valuable as baseline data. This means we can compare it with survey data taken after development, and if there is any indication of a decline the data can be used to lobby for change.

Controlling invasive species such as weeds and animal pests also helps to maintain biodiversity.

There are other activities that we do in our roles in horticulture and CLM that could threaten biodiversity, so we need to be very careful of these. The use of pesticides is an example.

DISCUSSION ACTIVITY

Bees are a major pollinator of the plants that produce our food. If bees die out the plants will not be pollinated and will not produce our food. At the moment we use a lot of pesticide to keep other insects from destroying our crops. Many pesticides are very harmful to bees.

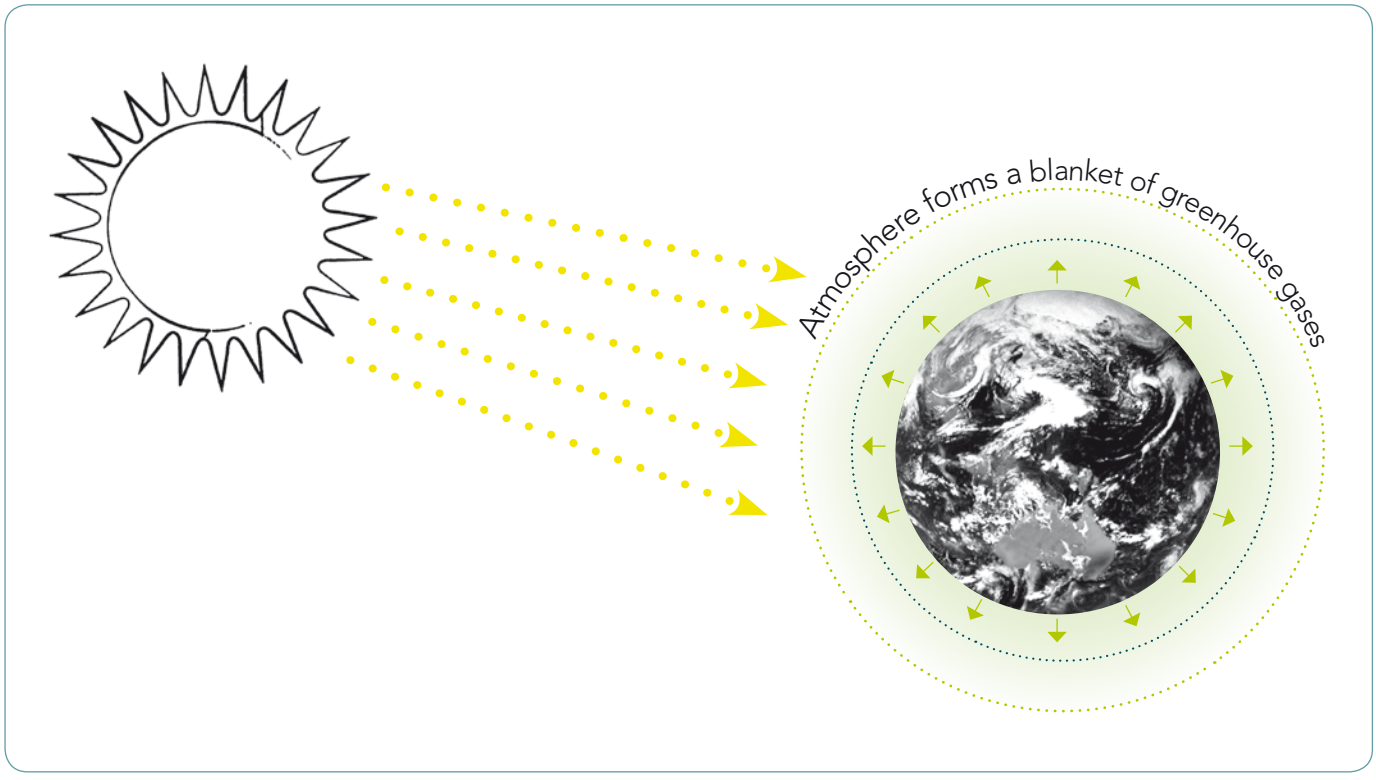
Discuss this problem with the group. How has it arisen, and what can we do about it?

1.2 CLIMATE CHANGE

Climate change is causing sea levels to rise and changing the weather we experience. This can mean a rise in average temperatures and an increase in the number of extreme weather events. The future predicted effects of climate change are:

- Crops and stock for food production are impacted
- Rainfall patterns are disturbed – more rain in some places and less in others
- Higher temperatures lead to a shortage of water due to evaporation
- Coastal areas become unliveable due to rising sea levels
- Some places become unliveable due to extreme weather events
- Reduction in biodiversity

Climate change is caused by an increase in greenhouse gases. These gases act like a blanket around our atmosphere. Since the 1970s they have increased too quickly, and now too much heat is kept in Earth's atmosphere.



NOTE

Burning in the right way can help maintain biodiversity so is okay. Too much burning or burning the wrong way leads to climate change.

The main reason for the increase in greenhouse gases is the increased release of carbon dioxide. This happens when anything that is living or was living:

- Burns
- Decomposes

Anything that was living contains carbon atoms. When it burns or decomposes it releases the stored carbon as carbon dioxide gas. This is called carbon emission.

The single largest source of carbon emissions is **burning fossil fuels.** We burn coal, petroleum/oil and natural gas for transport and electricity. These resources come from Earth. We call them fossil fuels because they are formed from prehistoric plants and animals. This process takes millions of years. When we burn fossil fuels to produce power in vehicles, generators or power stations they release carbon dioxide into the atmosphere.