



# It's Easy Being Green

Strategies for Environmental Change

# Contents

- Setting the Scene
- What is environmental management?
- Impacts of universities and strategies for change
- Developing your program
- Measuring, monitoring and reporting
- Let's get Creative!

# House keeping

- Breaks
- Mobile phones
- Evacuation procedure
- Evaluation sheet
- Respect

# Objectives

At the end of this session you should:

- Have developed a broad understanding of environmental management practices within organisations;
- Have developed an understanding of the environmental impacts associated with offices and what can be done about them;
- Understand how to measure and monitor change over time; and
- Be able to develop, deliver and monitor environmental strategies within your office area.

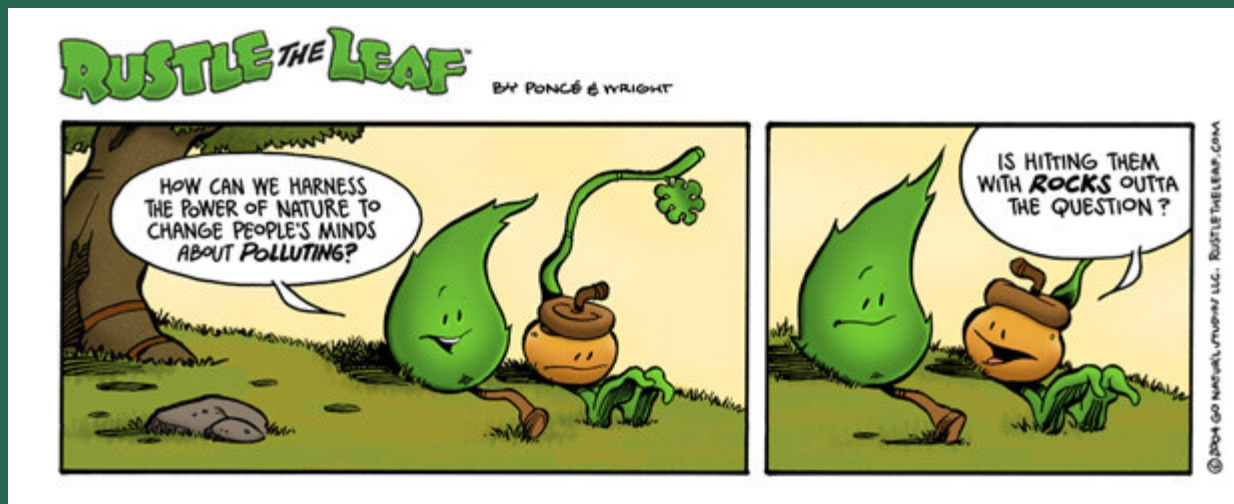


# Setting the Scene

- Australia has the highest per capita greenhouse emissions in the developed world
- One third of the world's recent mammal extinctions were in Australia
- Australians are the second highest world producers of waste per person, following the USA. We annually send over 690 kg of waste to landfill per person.

# But wait, there's more....

- Australians use approximately four times the energy per person than the world average.
- The area of biologically productive land available per person worldwide is 1.8ha's. On average Australians use over 7.6ha's.

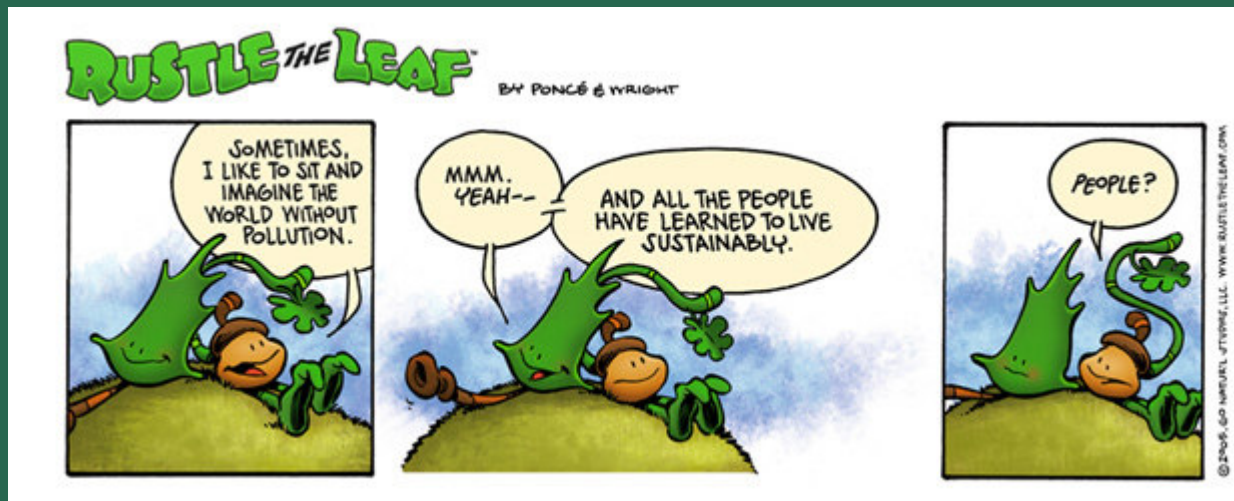


# Why have an Environmental Management Program?

- minimise environmental liabilities;
- maximize the efficient use of resources and reduce waste;
- demonstrate a good corporate image;
- build awareness of environmental concern among employees;
- gain a better understanding of the environmental impacts of business activities; and
- increase profit, improving environmental performance, through more efficient operations.

# Environmental Legislation


- Environmental Protection Act 1986-
  - *Provides for the prevention, control and abatement of pollution and environmental harm, for the conservation, preservation, protection, enhancement and management of the environment*



# Environmental Management Systems

- An EMS can be a powerful tool for organisations to both improve their environmental performance, and enhance their business efficiency.
- An EMS is not prescriptive, rather, it requires organisations to take an active role in examining their practices, and then determining how their impacts should best be managed. This approach encourages creative and relevant solutions from the organisation itself.

# Components of an EMS

- Establishing a policy
  - Identification of environmental impacts
  - Setting objectives and targets
  - Developing a management plan
  - Reporting and documentation
  - Staff training
  - Review and monitoring
  - Continual improvement
- 

# ECU's program

- Consists of:
  - Environment Committee
  - Declaration
  - Environmental policies and procedures
    - Resource Conservation (IT and copying hardware)
    - Environmental Policy (draft)
    - Waste management procedures
  - Environmental Management Plan (EMP)

# Management Plan

- The Environmental Management Plan (EMP) provides the mechanism for the implementation of the Environment Policy and aims to:
  - Identify environmental issues and set priorities,
  - Set overarching objectives,
  - Establish targets and measurable performance indicators, and
  - Allocate responsibilities for action
- Part of the EMP is the Green Office Program

# Green Office Aims:

1. Become a University-wide, permanent program
2. Raise awareness and empower staff to create change
3. Set targets and measure progress/performance
4. Change staff behaviour
5. Improve the environmental performance of the University

# Universities and the environment

- Like all large organisations, universities have a significant environmental footprint as a result of their operations
- For example:
  - Physical building footprints
  - Energy required to run normal operations (and associated emissions)
  - Consumption of resources (everything from cars to copiers to paper clips!)
  - Waste produced as a result of normal operations

# COFFEE BREAK...



# Green Office Manual

A practical guide to environmental action in the office

EcoECU

Green Office Program  
[www.ecu.edu.au/fas/ecocu](http://www.ecu.edu.au/fas/ecocu)



- Paper consumption
- Energy and emissions
- Water use
- Waste generation
- Purchasing power
- Travel and transport



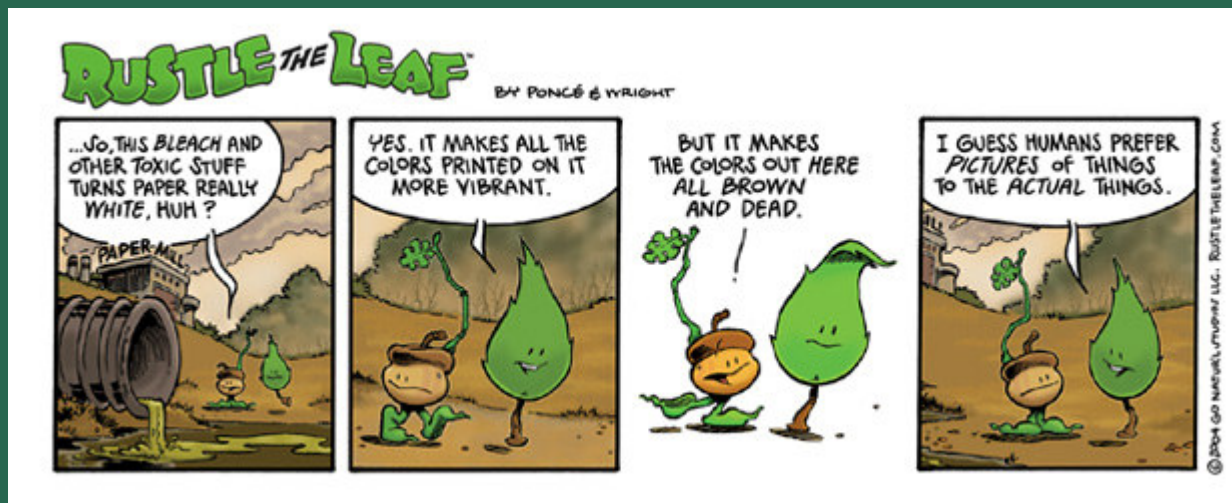
# Paper consumption

- ECU uses over 17 million sheets of copy paper per annum which if placed end to end would stretch from Perth to Auckland.



# So what?- the impacts of paper

- One tonne of virgin office paper requires the equivalent of 24 trees to produce
- Bleaches and toxins
- Resources (incl water, energy) use in processing and transport
- Emissions from landfill



# Strategies for change- paper

Modify systems and processes to:

1. Reduce the requirement for paper as much as possible
2. When using paper, minimise use, reuse and recycle

# Paper (1)

## 1. Reduce the requirement for paper as much as possible

- Eliminate unnecessary reporting and reduce report size
- Use laptops and projectors for long meetings rather than print off minutes and agendas
- Distribute management reports online
- File internal documents online/p-drive
- Use scanning facilities on multi-function devices
- Don't print out emails
- Use electronic forms

# Tips for reading on-screen

- Use print preview
- Use Acrobat Reader (handy manipulation; search, edit, enlarge tools )
- Narrow the browser window
- Change your Outlook layout (Check out Outlook 3 course)
- Make the page or font size larger
- Read screen-by-screen using Page Down, rather than scrolling and losing your place

# Tips for writing for the screen

- Use fonts like Arial and Verdana and avoid fonts such as Times New Roman
- Use 12pt font
- Use navigable tables of contents in large reports
- Reduce glare with a pastel background (optimal is black on white)
- Avoid textured or graphic backgrounds on emails
- Use dot points to make the document concise and easily scannable
- Use clear headings to break up the document

### Promotional

Nebraska is filled with internationally recognized attractions that draw large crowds of people every year, without fail. In 1996, some of the most popular places were Fort Robinson State Park (355,000 visitors), Scotts Bluff National Monument (132,166), Arbor Lodge State Historical Park & Museum (100,000), Carhenge (86,598), Stuhr Museum of the Prairie Pioneer (60,002), and Buffalo Bill Ranch State Historical Park (28,446).

### Concise Objective

In 1996, six of the best-attended attractions in Nebraska were Fort Robinson State Park, Scotts Bluff National Monument, Arbor Lodge State Historical Park & Museum, Carhenge, Stuhr Museum of the Prairie Pioneer, and Buffalo Bill Ranch State Historical Park.

### Concise Objective Scannable

In 1996, six of the most-visited places in Nebraska were:

- Fort Robinson State Park
- Scotts Bluff National Monument
- Arbor Lodge State Historical Park & Museum
- Carhenge
- Stuhr Museum of the Prairie Pioneer
- Buffalo Bill Ranch State Historical Park

# Paper (2)

## 2. When using paper, minimise use

- Train staff to use equipment such as printers and copiers efficiently
- Set up your computers and copiers to print double sided as default
- Print notes 2 up (4 to a page)
- Print a single copy of a document/memo and circulate
- Print a passage or section rather than the whole document
- Re-use paper for notes or drafts

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- ✓ Paper consumption
- Energy and emissions
- Water use
- Waste generation
- Purchasing power
- Travel and transport

# Energy and GHG emissions

- ECU emits 23,338 tonnes of CO<sub>2</sub> every year from energy utilities. That's the same emissions as 7,800 cars!
- Approx 35% of our energy consumption is from lighting and power and 65% from air-conditioning
- Energy consumption is the dominant source of GHG emissions in Australia, contributing 67.5% of the nations total emissions in 2002

# Office Equipment

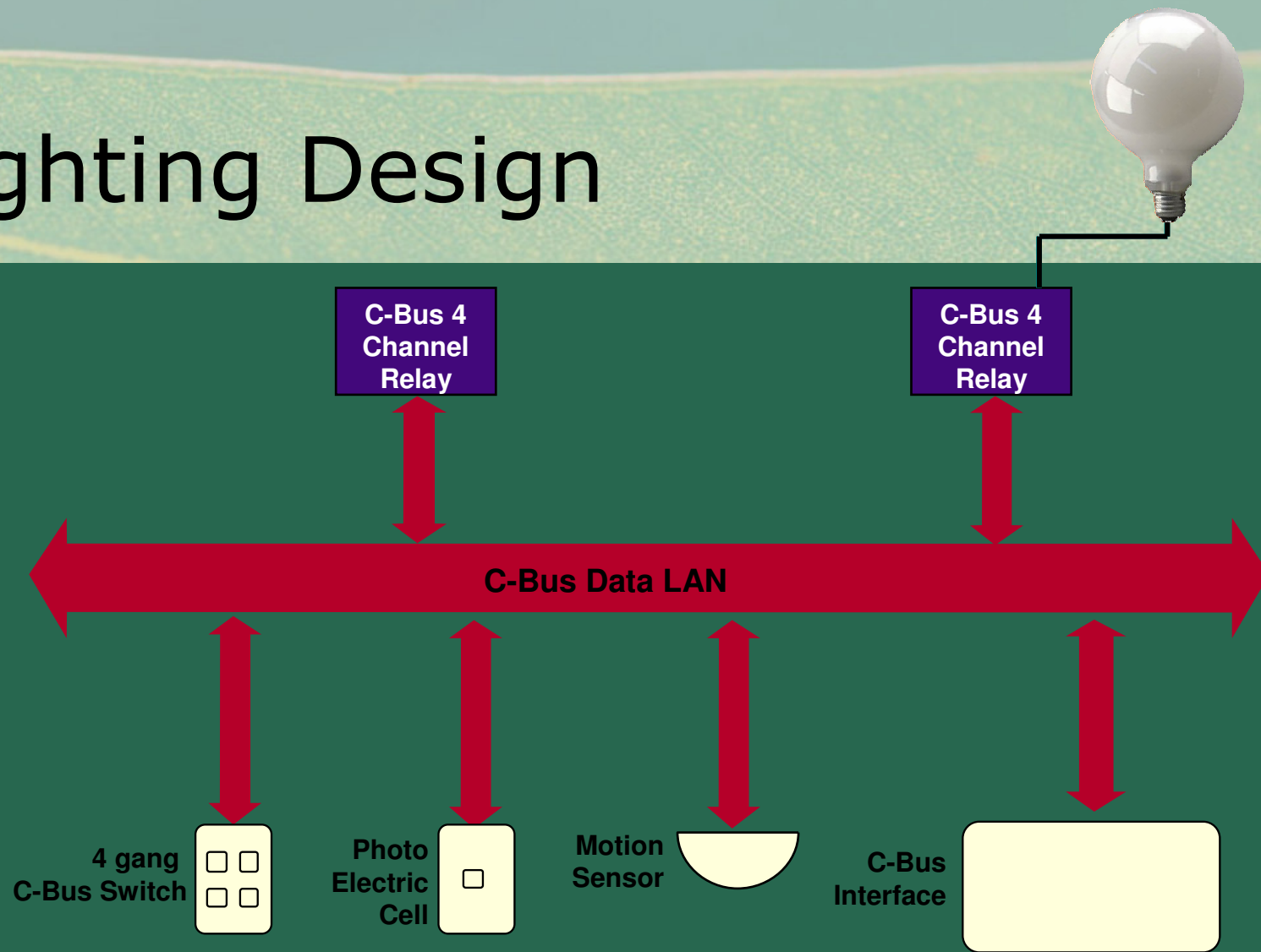
- An office copier may produce 13 tonnes of GHG gases over its operating life.
- Laser printers can use up to seven times more electricity than inkjet printers.
- An average desktop computer and monitor can use between 100-170W when fully operational. This is equivalent to over 300kgs of greenhouse gases a year.



# Switch Off

- MYTH: Switching lights or equipment off and on again wastes energy due to the current surge. Leaving lighting or equipment on wastes less energy than turning it off.
- FACT: current surges related to start-up are very short in duration, at most consuming a few seconds of average running time. If you will be away for more than a few minutes, it makes sense to SWITCH OFF.

# Lighting Design



# Strategies for change- energy

- Make informed purchasing decisions
- Train staff to use equipment efficiently
- Switch off office equipment and lighting when not in use
  - Save energy used to power equipment
  - Save energy used to counter heat produced
- Use natural lighting where possible
- Use laptops where appropriate- they use far less energy than desktops

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- ✓ Energy and emissions
  - Water use
  - Waste generation
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# The Blue Planet

- Water covers 2/3 of the Earth's surface and pervades the atmosphere in the form of vapour. However only 2.5% of the 1.4 billion cubic km of water on Earth is fresh, the majority of which is locked up in the polar ice caps.
- Therefore the world's population and most of the animal life depend upon just 0.075% of the Earth's total water.

# A Drying Climate

- Climate change will have significant effects on water availability in the SW of WA.
- Projections for changes in annual rainfall suggest changes in the south-west lie in the range of -20% to +5% by 2030, and -60% to +10% by 2070.
- 50% drop in water supply to the reservoirs supplying Perth since the 1970s

# Water consumption

- Perth residents used 155 KL/person/yr in 2004
- ECU consumes 270,000 KL of water each year in buildings and on grounds. That's enough to fill 270 Olympic swimming pools.



# Strategies for change- water

- Never leave taps running while you are doing something else
- Notify Maintenance of leaks- a dripping tap can waste over 4 litres of water a day
- Educate other staff



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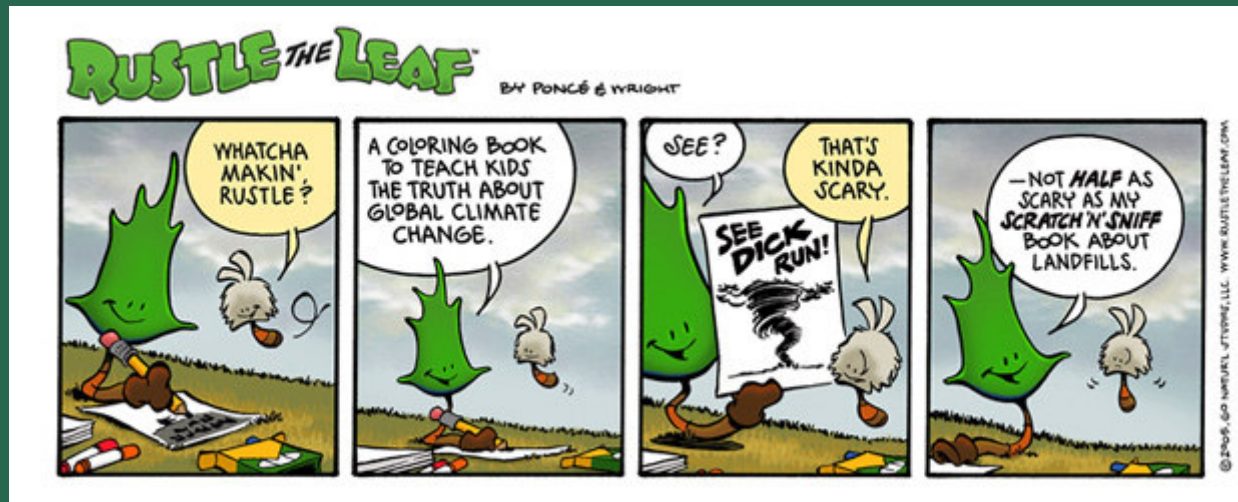
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# Waste generation



Australians are the second highest world producers of waste per person, following the USA. We annually send over 690 kg of waste to landfill per person.

# So what are the impacts of waste?

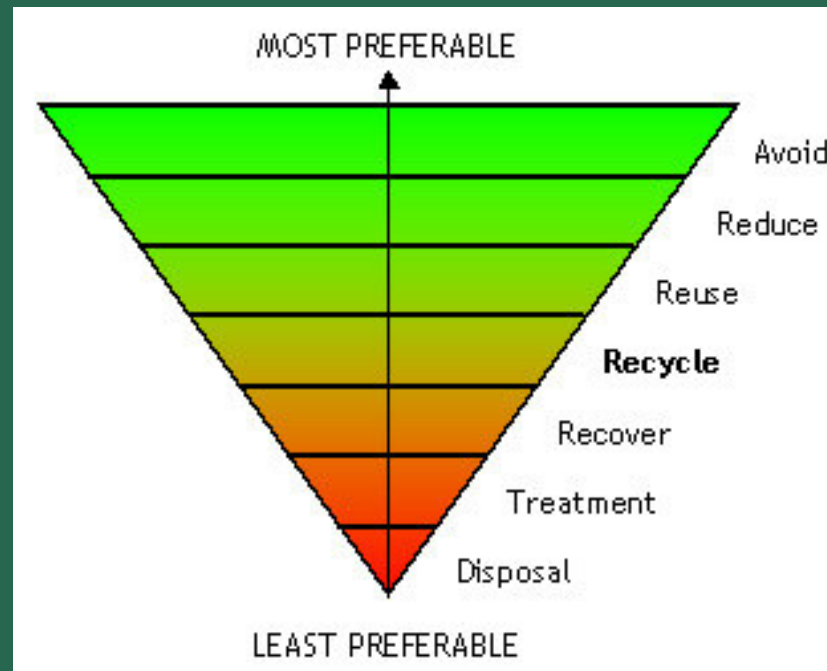
- Impacts on biodiversity (clearing)
- Toxic leachate into soil and groundwater
- Waste of resources (energy consumed in production and disposal)
- CO<sub>2</sub> emissions from landfill



# Strategies for change- waste

Modify systems and processes to:

1. Avoid
2. Reduce
2. Reuse
3. Recycle



# Green kitchens

- Don't stock disposable cups and cutlery
- Purchase recycled paper napkins/towels
- Install commingled recycling
- Organics disposal (Bokashi)
- One wash- use less water



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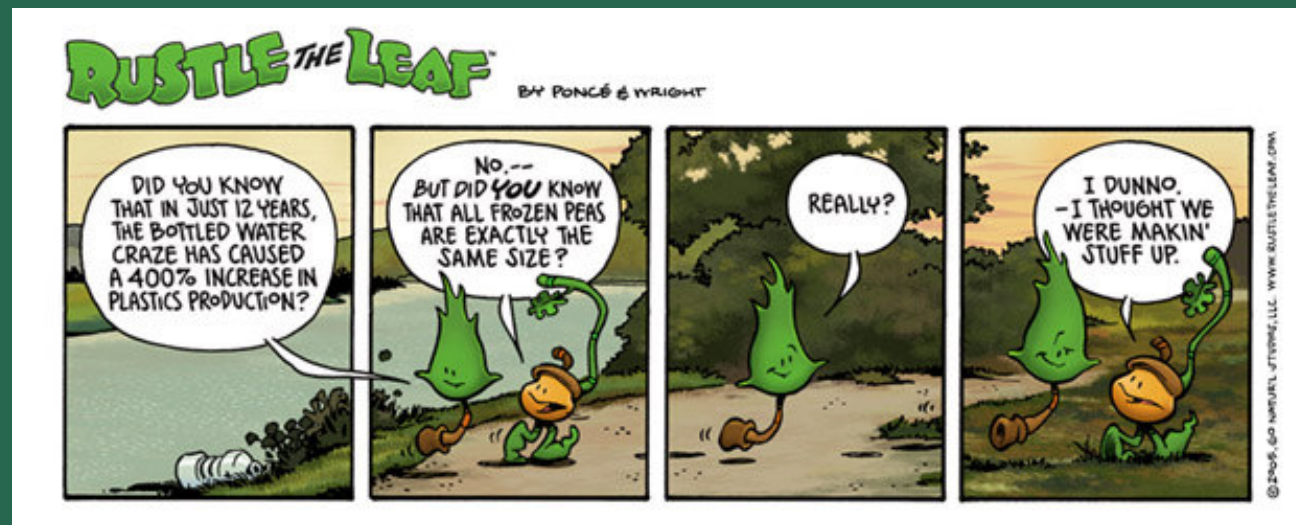
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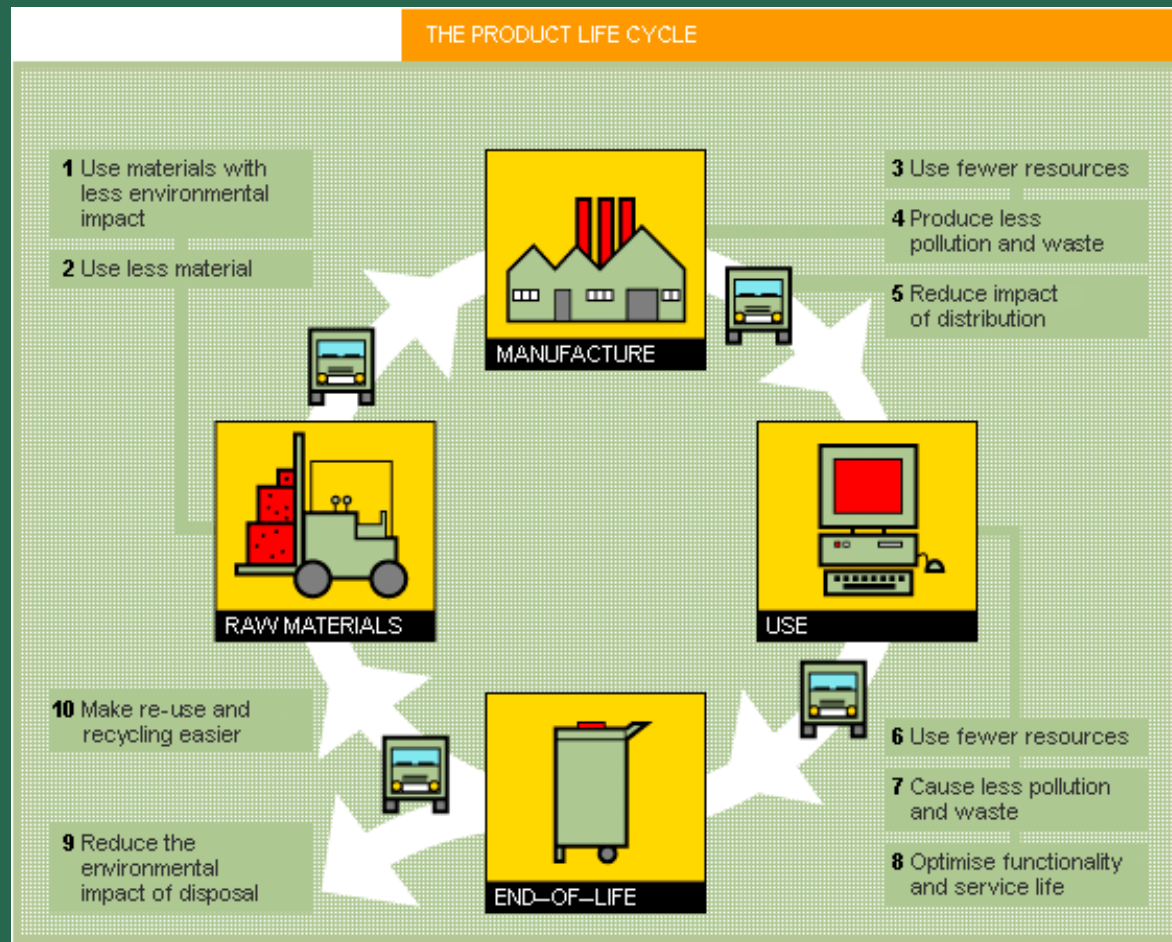
- ✓ Paper consumption
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# Purchasing power

- Our purchasing decisions have a huge impact on the natural environment



# Life cycles



# Some things to consider...

- What is its life span (can it be used more than once, how long will it last?)
- How much energy does it use during operation?
- Is it made of recycled material or can you recycle it when you have finished with it?
- How was the product manufactured (what is its embodied energy?)
- Does it contain harmful chemicals or toxins?
- Do you really need it? The best way of conserving our natural resources is not to use them.

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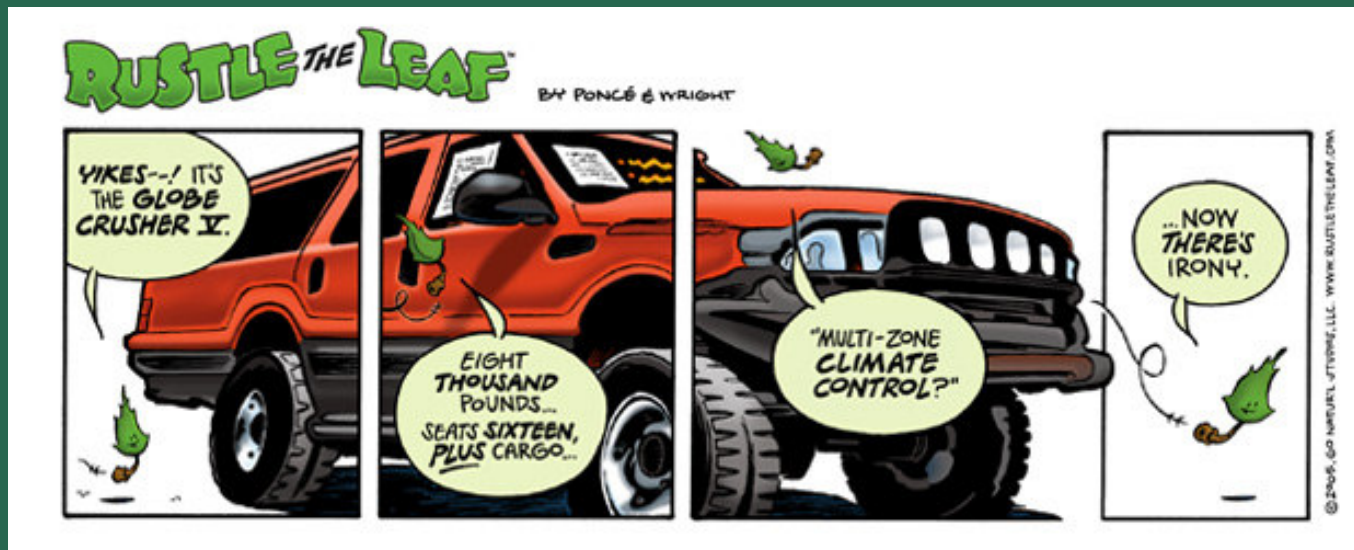
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# Travel and transport

- For every litre of petrol used, 2.5 kilograms of carbon dioxide are released from a car's exhaust.
- Vehicle emissions are a major source of air pollution in Perth.
- 80% of trips made by car in Perth are under 5 kilometres!

# Impacts of travel

- Every day, Perth residents make 240,000 private car trips that are less than one kilometre.



# Strategies for change- travel

- Only travel between campuses when necessary
  - do you really need to attend that meeting?
  - phone conferencing
  - plan your day more effectively
- Carpool or catch public transport to and from work
- Try to avoid using the car for short journeys (Joondalup CAT, bike or walk)

# COFFEE BREAK...

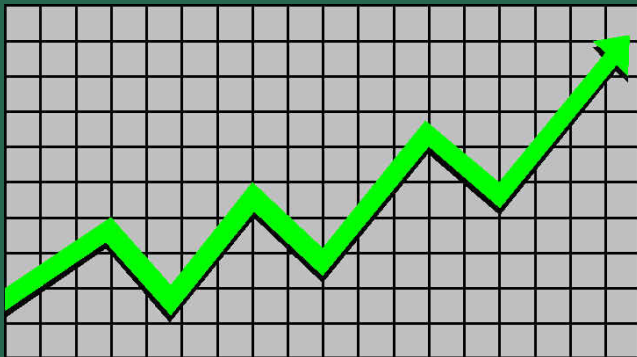


# Developing your program

- Undertake an audit- examine what is currently happening and why something might be done a certain way
- Set a clear aim/objective (ie: introduce recycling)
- Develop an action plan- set out the steps you'll take, how they will be resourced and when they will occur
- Identify barriers- make the desirable behaviour easy to do
- Monitor progress against the baseline
- Communicate progress

# Why audit?

- Assess your impacts (inputs, outputs, processes)
  - Explore how to modify processes to reduce inputs and waste
  - Track your progress over time
  - Adjust strategies so that you continue to improve
- \* You may like to use the Green Office Checklist and associated Action Plan provided.



# The audit process

- Define the scope
- Decide on performance indicators
  - Input indicators (eg: reams/kgs of paper bought in)
  - Output (eg: waste paper sent to recycling)
  - Process (eg: proportion of copies made in duplex)
- Conduct the audit
- Use the audit to track progress
- Tell others about your successes!

# Develop your action plan

| Aim                                 | Strategy  | Timeframe        | Resources Required               |
|-------------------------------------|---|------------------|----------------------------------|
| <i>Eg: increase paper recycling</i> | <i>Ensure all desks have paper recycling boxes</i>  | <i>July 2006</i> | <i>Desk side recycling boxes</i> |
|                                     | <i>Re-label paper recycling Sulo bins appropriately</i>   | <i>Aug 2006</i>  | <i>Recycling stickers</i>        |
|                                     | <i>Send out an email informing staff of the initiative including the number of trees its aiming to save</i> | <i>Aug 2006</i>  | <i>Email template</i>            |
|                                     | <i>Hold a morning tea informing staff of the initiative</i>   | <i>Aug 2006</i>  | <i>NA</i>                        |
|                                     | <i>Review and report on progress</i>  | <i>Sept 2006</i> | <i>Assistance from EO</i>        |

# Think 'SMART'

- **S**pecific- set out exactly what you want to do
- **M**easurable- how will know whether you have reached your goal?
- **A**chievable- is it something you have the ability to achieve?
- **R**ealistic- are you prepared to spend the time doing it?
- **T**ime-framed- when do you want to have it completed?

# Develop an eco-business case

- A win-win situation- you will often find that products that are good for the environment are also good for the hip pocket.
- Examples:
  - Old and/or inefficient equipment (ie: copiers) waste power, paper and time
  - Significant quantities of waste can often point to inefficiencies in current operating procedures
  - Assess the necessity for intercampus travel and save on the number of cars required for your Faculty/Centre

# What to measure

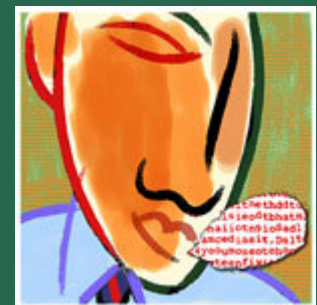
- Once a benchmark has been established indicators are used to measure change over time.
- What indicators are chosen will be important as different indicators will give you different information about how a program is tracking.
- Example:
  - Reams of paper bought in per month
  - Number of copies made per month
  - Volume of paper waste recycled per month

# Monitoring and reporting

- Periodically measure your indicators (ie: volume of paper recycled)
- Ensure that you are heading towards your target/objective (ie: increasing paper recycling)
- If not, you may need to re-assess your program.
- Reporting on your successes helps to justify the work you are doing!

# Communicating your message

- Use captivating information- vivid, concrete and personalised
- Use a credible source
- Make the message specific
- Make the message easy to remember
- Provide a goal
- Use personal contact where you can
- Be a model for sustainable behaviour
- Provide feedback



Let's get creative!



# Creative activity 1- computers

- You notice that most staff in your office are not turning off their computers each night before they go home.
- Put together a strategy to encourage staff to switch off or power down.
  - What is your message/slogan?
  - How will you establish your target?
  - What steps need to be taken and when?
  - How will you communicate your message?
  - How will you know if you have succeeded?

# Creative activity 2- paper

- You are aware that staff within your office area print out EVERYTHING, including their emails.
- Put together a strategy to encourage a reduction in the use of paper.
  - How will you identify the activities which really do require paper?
  - What is your message/slogan?
  - How will you establish your target?
  - What steps need to be taken and when?
  - How will you communicate your message?
  - How will you know if you have succeeded?

# Creative activity 3- lighting

- You notice that staff leave the lights on when they leave a room and at the end of the day.
- Design a strategy to encourage staff to switch off lights as they leave a room or office area and at the end of the day.
  - What is your message/slogan?
  - How will you establish your target?
  - What steps need to be taken and when?
  - How will you communicate your message?
  - How will you know if you have succeeded?

# Outcomes

What we have covered:

- Environmental management within organisations and at ECU
- Impacts of universities and strategies for change
- Developing your program
- How to measure, monitor and report on your program

# Contact details

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