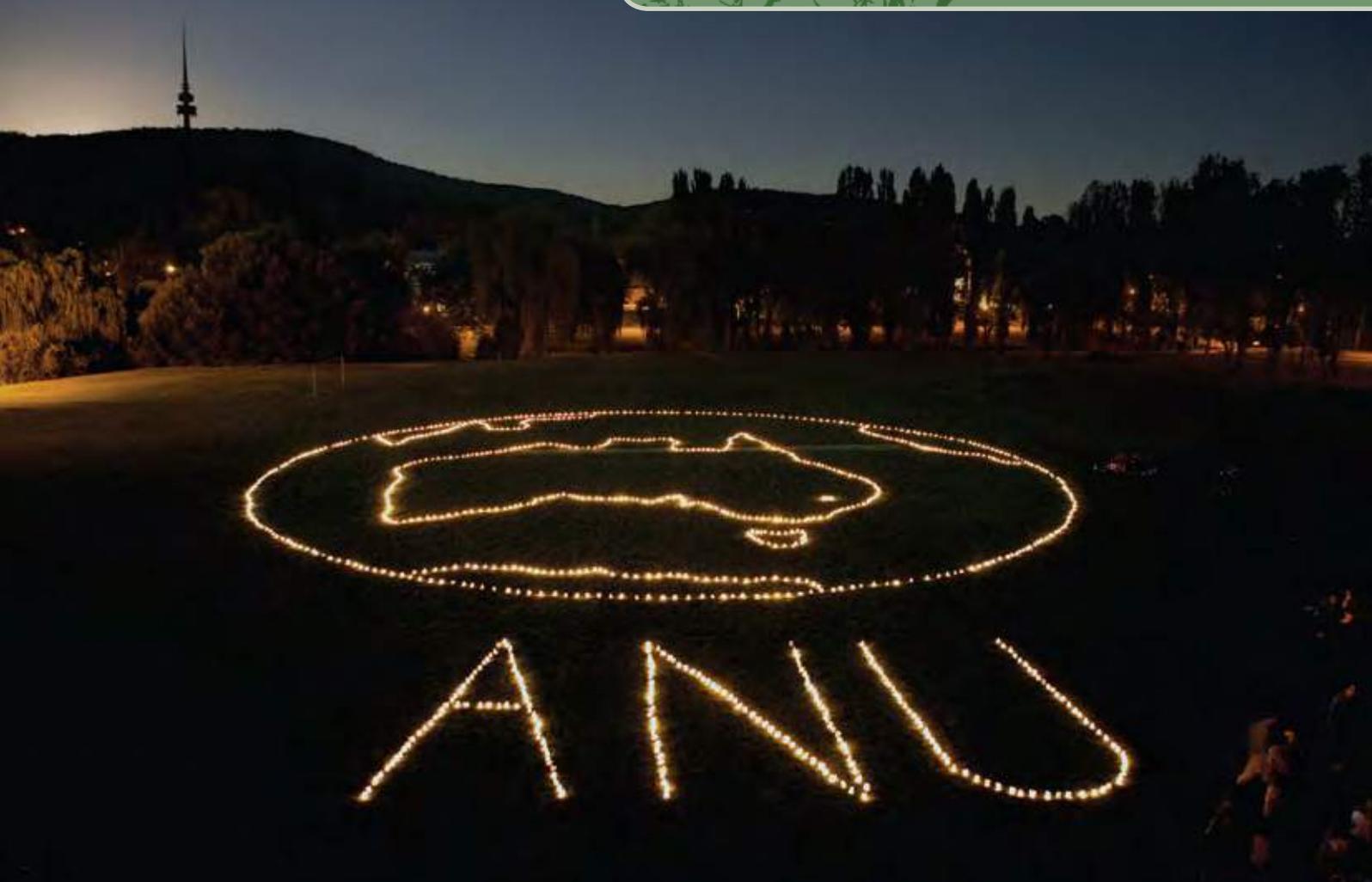


Environmental Management at

The Australian National University



2007-2008 Annual Report

A Message from the Vice-Chancellor

The Australian National University (ANU) is committed to excellence in research and teaching. Our commitment to excellence extends to our stewardship of the environment.

As an institution we strive to both offer an example of sustainable operations and to provide our graduates with the knowledge and skills needed to realise a more sustainable society.

As a recognised leader in campus sustainability, we take seriously our responsibility to set an example to the wider community by incorporating best-practice sustainability measures into our operations.

A range of environmental management programs have been implemented, but the full potential of these programs can only be realised with the commitment and participation of each individual in the campus community. Thank you for helping us to achieve our goals - your efforts do indeed make a difference!

Vice-Chancellor Professor Ian Chubb AC
The Australian National University

A Message from ANUgreen

The achievements presented in the following report are the result of cooperative efforts across ANU. Over the years we have developed a range of well-informed, practical programs that improve our environmental performance. These are implemented with the creativity and determination of our environmental specialists and are supported on a daily basis by members of the ANU community. We are pleased to see ongoing collaboration across departments and to have support from the administration as demonstrated by financial backing and long-term corporate commitments.

With a major focus on campus operations, this report does not fully address the wide range of teaching and research areas tackling sustainability issues and fostering ecological literacy amongst our students. This work complements the achievements highlighted here and serves to further demonstrate our commitment to sustainability at ANU.

Bart Meehan

Associate Director, Facilities and Services
The Australian National University

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Overall Environmental Management Results

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1. Community Engagement
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5. Transport
6. Pollution Prevention and Environmental Risk
7. Biodiversity

The Future

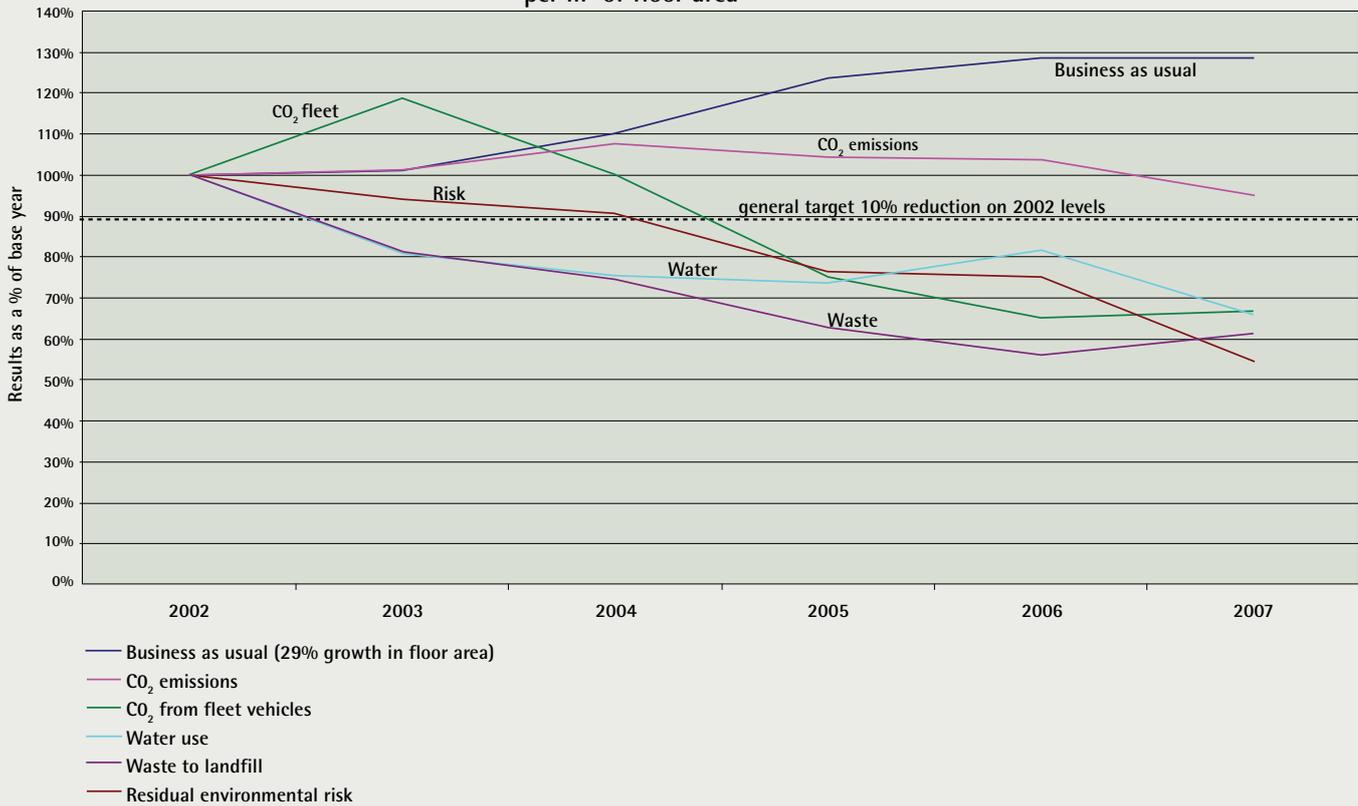


Did you know?

To assist ANU departments to implement sustainability solutions, a three million dollar Green Loan Fund was established in 2007. This fund provides support for projects that demonstrably reduce the environmental impact of the University in critical areas like water consumption, greenhouse gas emissions and waste management.

Overall Environmental Management Results

per m² of floor area



In the past year, ANU has achieved significant improvements in all aspects of environmental management from water use to waste disposal. The calculations in this report represent achievements measured against base year levels from 2002. Results throughout the report are presented in meters square of floor area in order to account for growth.

As can be seen in the graph above, all results meet the target of a 10 per cent reduction on 2002 levels except for greenhouse emissions. Emissions however, are on a downward trend and given a 29 per cent growth in floor area, this is still a very positive result.

The dark blue line in the graph represents a business as usual scenario. This line demonstrates the projected impact of campus operations had an environmental management program not been put in place in 1998.

The following pages outline each aspect of the University's Environmental Management Plan in greater detail.

ENVIRONMENTAL AWARDS RECEIVED IN 2007

ACT SUSTAINABLE CITIES AWARDS

Urban Habitat Category

Highly Commended: ANUgreen for Life in the Suburbs

Resource Efficiency Category

Highly Commended: ANUgreen for the HotRot Organic Recycling Project

Sustainable Transport Category

Winner: LEAD Development, ANUgreen and the Canberra Environment and Sustainability Resource Centre for the ANU Bicycle Cooperative

Young Legends Category

Winner: The ANU Sustainability Learning Community for Empowering Change Agents in the Campus Community

WESTPAC LANDCARE EDUCATION AWARDS (ACT)

Winner: Beth Mitchell of ANUgreen for Life in the Suburbs



COMMUNITY ENGAGEMENT

Targets

- Increase the number of people/areas considering environmental impact in decision-making processes.
- Increase awareness of ANUgreen as a source of assistance in relation to environmental issues and impacts on campus.
- All ANU offices, labs, residential halls/colleges will implement an environmental management program to minimise ecological impact.

Student Outreach & Education Initiatives

ANU SUSTAINABILITY LEARNING COMMUNITY

The ANU Sustainability Learning Community (SLC) is a network of students and staff from across the University addressing environment and sustainability-related issues on campus.

SLC ORGANIC GARDEN

- SLC students started an organic garden on campus in 2006 which utilises compost made on campus.
- A student garden coordinator was employed in 2008 to promote the garden and foster opportunities for hands-on interdisciplinary educational experiences.
- Workshops held include worm farming, permaculture and organic gardening to offer practical sustainability skills.

WORLD ENVIRONMENT DAY: GREAT GREEN DEBATE

- The SLC has hosted three annual panel discussions in collaboration with Bruce Hall to mark World Environment Day on 5 June.
- The event includes a formal dinner for the panellists, students, staff and invited guests giving students the opportunity to engage with sustainability professionals.
- One hundred and fifty people attended the 2007 event on the topic: The Role of Business in Shaping Sustainable Future.
- SLC membership increased from 250 staff and students in 2007 to 575 members in 2008.

ANUGREEN INTERNSHIP PROGRAMS

- Over 150 students applied for the range of sustainability internship programs offered at ANU and International Alliance Of Research Universities (IARU), partners at Yale University and the University of Oxford.
- Eighteen students worked as interns in the ANUgreen office on a range of initiatives such as battery recycling, carbon mitigation and student outreach.
- Three students went abroad to Yale while ANUgreen hosted two Yale students on the Sustainability Exchange.
- These programs offer students practical skills in environmental management and facilitate knowledge exchange between partner universities.

SUSTAINABILITY IN COURSEWORK

- One hundred and thirty-five students in courses ranging from Greenhouse Science to Corporate Sustainability to Human Ecology completed projects on a variety of campus sustainability topics for course assessment.
- The best of these projects are being applied across campus.

SUSTAINABILITY EVENTS

CELEBRATE SUSTAINABILITY DAY

- A full day of information booths, music, tours, activities and free giveaways during week one proved to be a fun way to bring a positive environmental message to the ANU community.
- A total of 660 stamps were submitted for the prize draw, each representing a point of contact on a sustainability topic. The event was an unprecedented success in bringing sustainability information directly to the broader ANU community.
- Many students recognised the value of the event and volunteered to help on the day.

EARTH HOUR

- Students from the campus residences collaborated with ANUgreen to plan for the great 'switch-off', in which people around the planet turned off their lights for one hour to demonstrate the link between energy use and climate change.
- By nightfall, Fellows Oval was lit with hundreds of candles making an image of the world. Accompanied by African drumming and fire spinning, the event drew over 500 people.

Staff Programs

SEE SUSTAINABILITY AT WORK

The SEE Sustainability at Work (SEE S@W) program aims to deliver measurable reductions of the University's ecological footprint through organisational change within offices, labs and residential halls and colleges.

STRATEGIES

- Training and support to local area 'Green Reps' to build the capacity of staff/students to be catalysts for change in their area.
- Relevant and timely information and resources to those wanting to promote environmental behaviour in offices, residences and other locations on campus.
- The SEE S@W Resource Kit – includes fact sheets, posters, stickers and links to help with awareness raising and community engagement.
- Comprehensive professional development training program.
- Formation of environmental committees across participating workplaces.

ELEMENTS

Green Office Program

Participants in the program, known as Green Reps volunteer to receive training in green practices which they implement in their workplaces.

Green Lab Program

Volunteer Green Reps from participating laboratories promote ways to reduce the ecological footprint of laboratory operations, with support from ANUgreen.

Green Residents Program

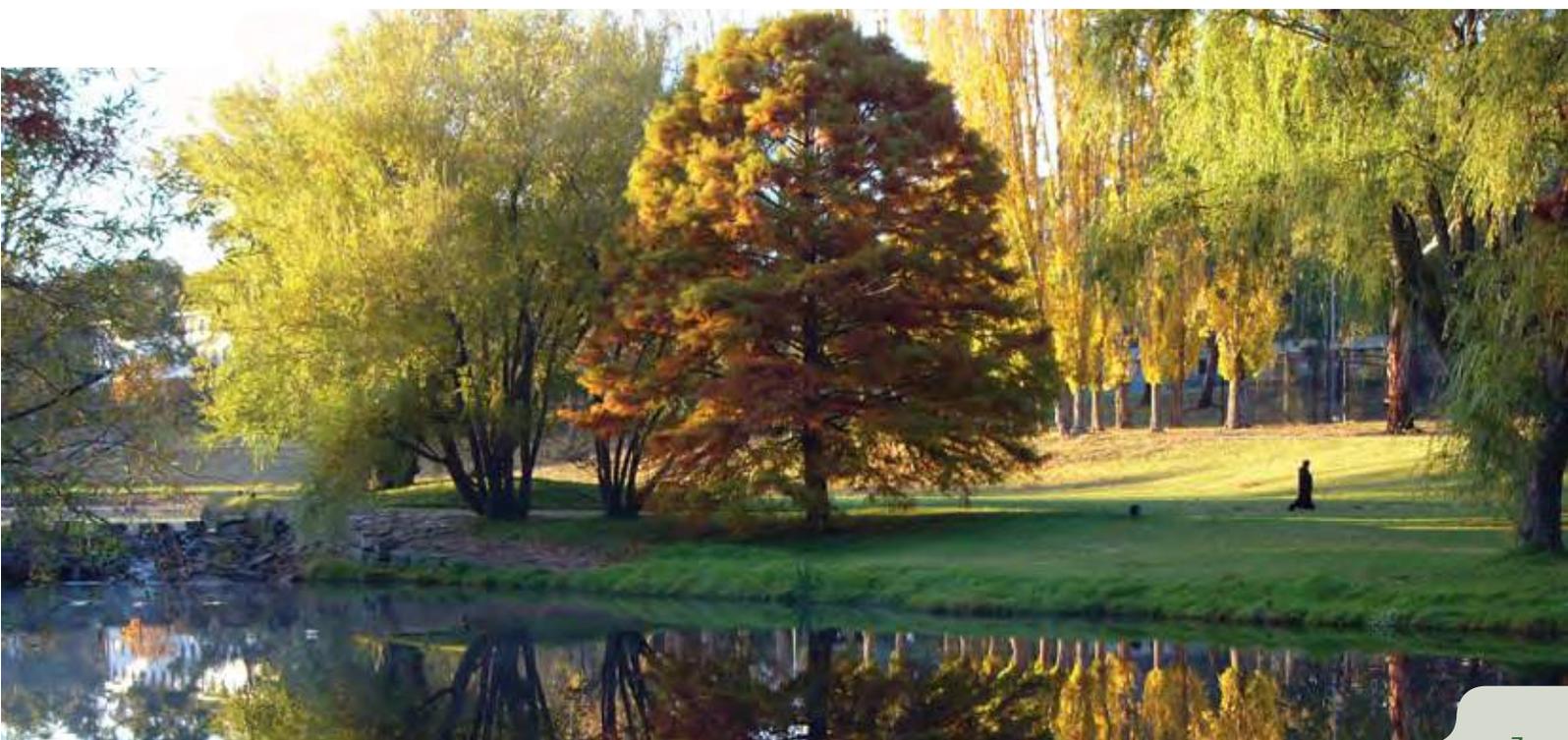
Each hall or college has a student Green Rep who heads the sustainability initiatives within his or her residential college.

In 2008, 105 Green Reps were registered on the SEE S@W mailing list, receiving announcements about training, sustainability-related events and news.

International Sustainability Partnerships

ANU is a member of the IARU, a group of 10 world class research universities in Asia, North America and Europe.

The IARU has committed to demonstrating international leadership in local campus sustainability issues, as well as supporting various research programs focussed on global sustainability. University staff are taking lead roles in IARU activities such as collaborative research and the coordination of student exchange programs and sustainability internships.



ENERGY & GREENHOUSE MANAGEMENT

Target

Reduce absolute energy consumption and greenhouse gas emission levels to 10 per cent below base year levels (2002) by 2008.

Initiatives

Green Energy

- Now purchasing 20 per cent green power through accredited green energy sources.
- Implemented supply arrangements, which provides for a 2 per cent increase in the purchase of green energy per year.

Energy Conservation Awareness

- IT student project will make energy data available online to building managers.
- Implemented energy conservation and greenhouse awareness programs with staff and students such as SEE S@W and the Green Shield Interhall Competition.

Offsetting Vehicle Fleet Emissions

- ANU currently offsets all of its vehicle fleet emissions with the purchase of renewable energy certificates.

Environmentally Sustainable Design

Using architects, landscape architects, planners, builders and designers who provide energy efficient design.

HEDLEY BULL PROJECT

- Sustainable design principles include lighting control systems for energy efficiency, and user-controlled-hybrid energy systems with exposed thermal mass.

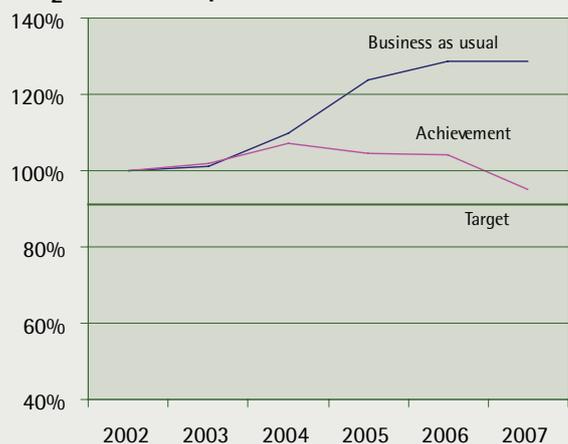
SENSITIVE HIGH RESOLUTION ION MICROPROBE FACILITY EXTENSION

- Natural day-lighting and hybrid-passive design allow for natural ventilation while minimising summer sun.
- Waste heat from process cooling is used for slab heating.

Achievements

Despite significant growth in floor area, annual greenhouse gas emissions were reduced by over 8,700 tonnes from the previous year. This is a result of reduced consumption (a 2.6 per cent decrease in electricity usage and a 4.7 per cent decrease in gas usage) and the purchase of 20 per cent green energy.

CO₂ emissions per m²



WATER MANAGEMENT

Targets

- Reduce water consumption levels 10 per cent by 2008 compared to the base year (2002).
- Ensure a high level of understanding of the function and location of stormwater drain entrance points among university staff who handle potential contaminants.

Initiatives

Bruce Hall Grey Water Recycling Trial

- Trial grey water system treats 3,500 litres of water a day - producing class A water which is then used for flushing Bruce Hall toilets.

Hedley Bull Project

- Incorporates a rainwater/stormwater catchment system and grey water treatment system which provide water for flushing toilets and irrigation around the building.

The John Curtin School of Medical Research Stage 2

- Still under construction, this new stage introduces rainwater tanks that will provide water for use in flushing toilets and irrigation around the building.

Grey Water Use on Ovals

- Grey water is used for irrigation on ANU sports ovals saving 30 million litres of water per year.

Stormwater Management

- Ongoing work with the ACT community and government in the development of a Sullivans Creek Catchment Management Plan.
- Installed sediment traps in all stormwater drains where there was risk of stormwater pollution.
- Monthly water quality testing, with Molonglo Catchment Health Indicators Project.

Awareness & Training

- Community stormwater awareness campaigns include stencilling drains to remind residents that the drain leads to Sullivans Creek.
- A stormwater training course targets food services outlets and technical staff across campus.
- Technical officer training provides experience in stormwater management and emergency spill-response.
- ANU horticulturalists are trained in water conservation strategies.

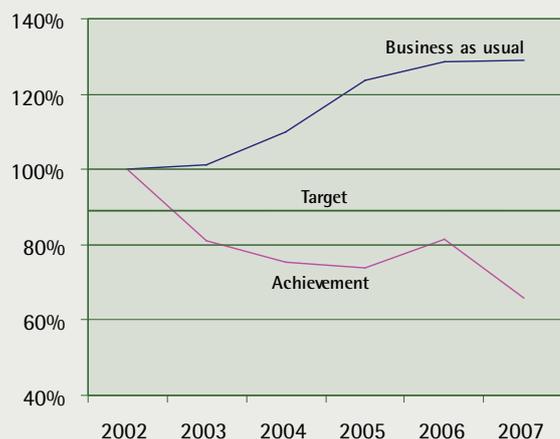
Landscape Water Conservation

- Landscape design strategies to reduce water consumption in the landscape include use of native plants and drought tolerant lawn species. Soil amendment techniques and swales capture rainwater and reduce runoff.
- ANU established a landscape water conservation committee that is working to remove potable water from the landscape by 2015.

Achievements

Through the efforts of ANU staff and students, water use in 2007 was reduced by 158 million litres from the previous year.

Water use per m2



RECYCLING & WASTE MANAGEMENT

Target

- Reduce waste going to landfill by 70 per cent (from 2002 levels) by 2008.

Initiatives

ANU Organic Recycling Program

- The program employs an in-vessel composting unit (the HotRot) and standardised bins to enable the collection of food waste from residence halls, restaurants and other food outlets on campus.
- The program includes the collection of animal waste bedding from research departments and the collection of various organic wastes (ie food scraps, shredded paper, paper towels, newspapers, and garden green waste).
- The HotRot can divert up to 500 tonnes of waste from landfill each year.
- From its introduction in 2007, 174 tonnes of organic waste was composted in just eight months, making it the largest recycled waste stream on campus.

Paper Recycling Program

- Through the University's purchasing contract with Corporate Express, the use of EXP 50/50 (50 per cent recycled content paper) and Evolve (100 per cent post-consumer recycled paper) have been promoted to business units within ANU.
- Fifty-two per cent of paper purchased at ANU through Corporate Express contains recycled content.
- In 2007, the University experienced a 9.6 per cent decrease in overall paper purchasing (8,126 fewer reams).

e-waste Recycling Program

- e-waste (electronic waste) includes computers, monitors, printers, audio/visual equipment and thousands of electrical cords and accessories.
- In order to ensure that the toxic elements contained in e-waste do not go to landfill, 31 tonnes of e-waste was shipped for recycling in 2007, a 24 per cent increase over the previous year.

Metal Recycling Program

- In 2007, 21 tonnes of steel was collected for recycling. This process has resulted in savings of over \$6,000 in disposal costs, as well as generating income that is used to offset the cost of other recycling programs.

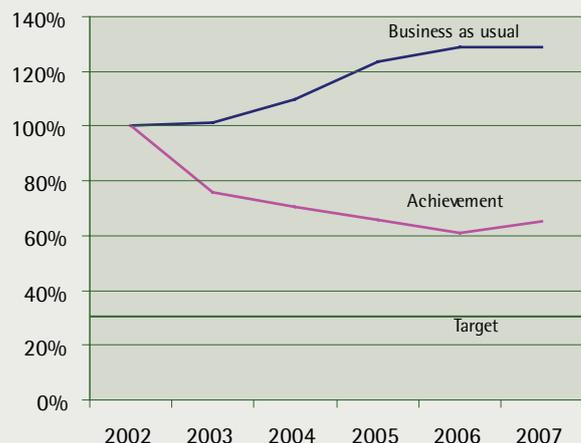
Other Waste Reduction Initiatives

- Increases in the recycling of pallets, printer cartridges, fluorescent tubes and batteries have all been significant during 2007.
- Recycling and waste management services at ANU also include commingled glass and plastic, furniture, cardboard, construction waste and polystyrene.

Achievements

In 2007, waste to landfill was 343 tonnes lower than in 2002.

Waste to landfill per m²



TRANSPORT

Targets

- Reduce the fuel consumption of the ANU vehicle fleet by 10 per cent compared with 2002 levels.
- Minimise single occupant car commuting.
- Maximise the accessibility and suitability of alternative modes of transport.

Initiatives

Timely Tredlies Bike Fleet

- ANU departments use Timely Tredlies bicycles for transport around campus.
- With over 60 bikes covering more than 50,000 km per year, Timely Tredlies is the largest bike fleet of its kind in Australia.
- Timely Tredlies reduce travel times and environmental impacts and improve physical wellbeing.

Ride2Uni Program

- The Ride2Uni program currently has 507 members, making it one of the largest bicycle user groups in Australia.
- Over \$5,000 worth of subsidised bike equipment was sold to ANU staff and students.

Carpooling Program

- The ANUgreen carpooling program uses a web-based database to match up potential car-poolers.
- There are currently 292 registered users.

Go Green, Get Lean Cycle Challenge

- Over a 10-week period, 30 staff and students, all regular car commuters, agreed to progressively substitute motorised commuting with cycling.
- The challenge sought to demonstrate the linkages between active transport and health benefits and included weekly exercise classes provided by the ANU Sport and Recreation Association.

FITNESS RESULTS:

- On average participants experienced a 30 per cent improvement on their cardio-vascular fitness test and a 52 per cent improvement on their flexibility test.
- In general participants experienced significant reductions in resting heart rate and blood pressure.

PROJECTED ENVIRONMENTAL IMPACT:

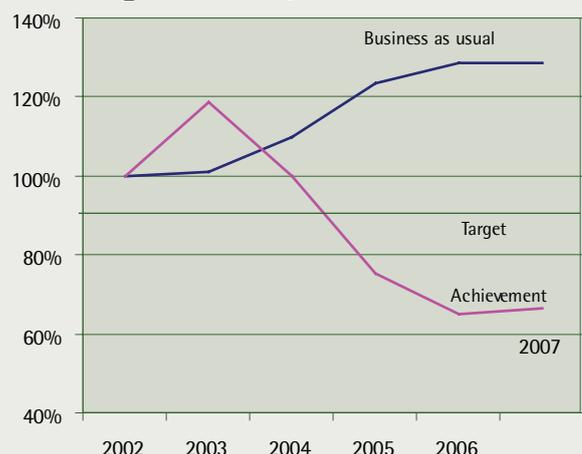
- If the Go Green, Get Lean participants continue to cycle for an entire year they could each reduce their annual transport related emissions by almost one tonne per year¹.

¹ Assuming a 20 kilometre commute three times per week.

Achievements

Over the last year, vehicle fleet emissions were reduced 14 per cent from 2002 levels. By purchasing renewable energy certificates, 949 tonnes of CO₂ emissions were offset from the University vehicle fleet in 2007.

Total CO₂ from fleet per m²



POLLUTION PREVENTION & ENVIRONMENTAL RISK

Targets

- To ensure that all relevant technical officers and contractors are aware of environmental protection laws and pollution prevention strategies.
- To establish effective pollution prevention infrastructure (spill kits) across campus, with technical officers trained in maintenance and use.
- To achieve best practice in preventing pollution from the campus.

Initiatives

Comparative Environmental Risk Assessment Method

- The analytical model for environmental risk management at ANU is the Comparative Environmental Risk Assessment Method (CERAM), developed as part of the doctoral research of an ANUgreen staff member.
- CERAM compares the inherent risk of operations with the residual risk due to risk management controls that are in place. Results are described in terms of the percentage of risk that remains unmanaged.
- CERAM enables easy analysis of risk management differences between operations, as well as change over time.
- Annual risk assessments are conducted at ANU using CERAM. Risk management priorities are identified and action taken to reduce risk.
- In 2008, CERAM goes international, via a demonstration at the American Evaluation Association conference in Denver, Colorado.

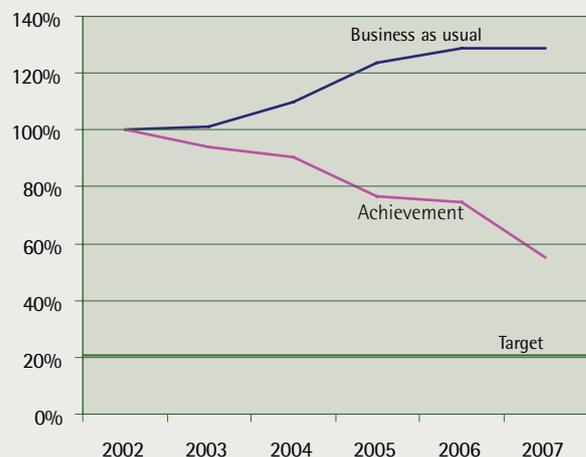
Emergency Spill Response Capacity

- Spill kits are now available at science buildings throughout ANU.
- A central unit is kept for deployment by the security team, and is ready 24 hours a day.
- Staff and students are trained in emergency spill response procedures.

Achievements

At the end of 2007, residual risk was down 26 per cent since the program commenced in 1998. Strong investment is set to continue and the best-practice target of 20 per cent residual risk is likely to be achieved in 2008.

Residual Environmental Risk per m²



BIODIVERSITY

Target

- Develop and implement a biodiversity management plan.
- Use baseline data collected as part of the Lower Sullivans Creek Catchment Ecological Survey and biodiversity monitoring to inform the University's first Biodiversity Management Plan. The plan will assist future development planning, ongoing maintenance of landscapes and enrichment of campus ecology.

Initiatives

Baseline Ecological Survey

- ANU undertook a scientifically rigorous ecological survey of the Lower Sullivans Creek Catchment in collaboration with the Australian National Botanic Gardens, the National Museum of Australia, Sullivans Creek Catchment Group, ACT Government, CSIRO and the National Capital Authority.
- The survey commenced in 2003 and concluded in 2008 and included a major community engagement strategy, attracting approximately 400 community, staff and student volunteers.

Life in the Suburbs Program

The program built on the Lower Sullivans Creek Catchment Ecological Survey (LSCCES) to further community education and awareness of urban ecology. The program outcomes included:

- individual reports for each biota (birds, frogs, mammals, reptiles and terrestrial invertebrates)
- a two-week exhibition of the Urban Environment involving environmental groups from across the ACT, as well as art exhibits inspired by the environment
- dissemination of 10,000 brochures outlining the findings of the LSCCES and promoting the Life in the Suburbs program
- print, TV and radio media interviews and four student and community information seminars to promote awareness of the Life in the Suburbs initiative
- development of the Life in the Suburbs website, www.lifeinthesuburbs.net.au, as a portal for information on urban ecology and biodiversity and the range of environmental initiatives and organisations across the ACT.

Biodiversity Monitoring

Monitoring events include a community education component to enhance awareness of urban ecology and provide opportunities for students to complement academic studies with practical survey experience. Regular monitoring events include:

- seasonal bird watching events to monitor bird populations within the Lower Sullivans Creek Catchment as part of a continuing five year survey cycle
- spring frog survey conducted on an annual basis.

Achievements

In 2007 the Life in the Suburbs project was the recipient of the ACT Landcare Award for Environmental Education and was awarded a High Commendation at the Keep Australia Beautiful Sustainable Cities Awards.



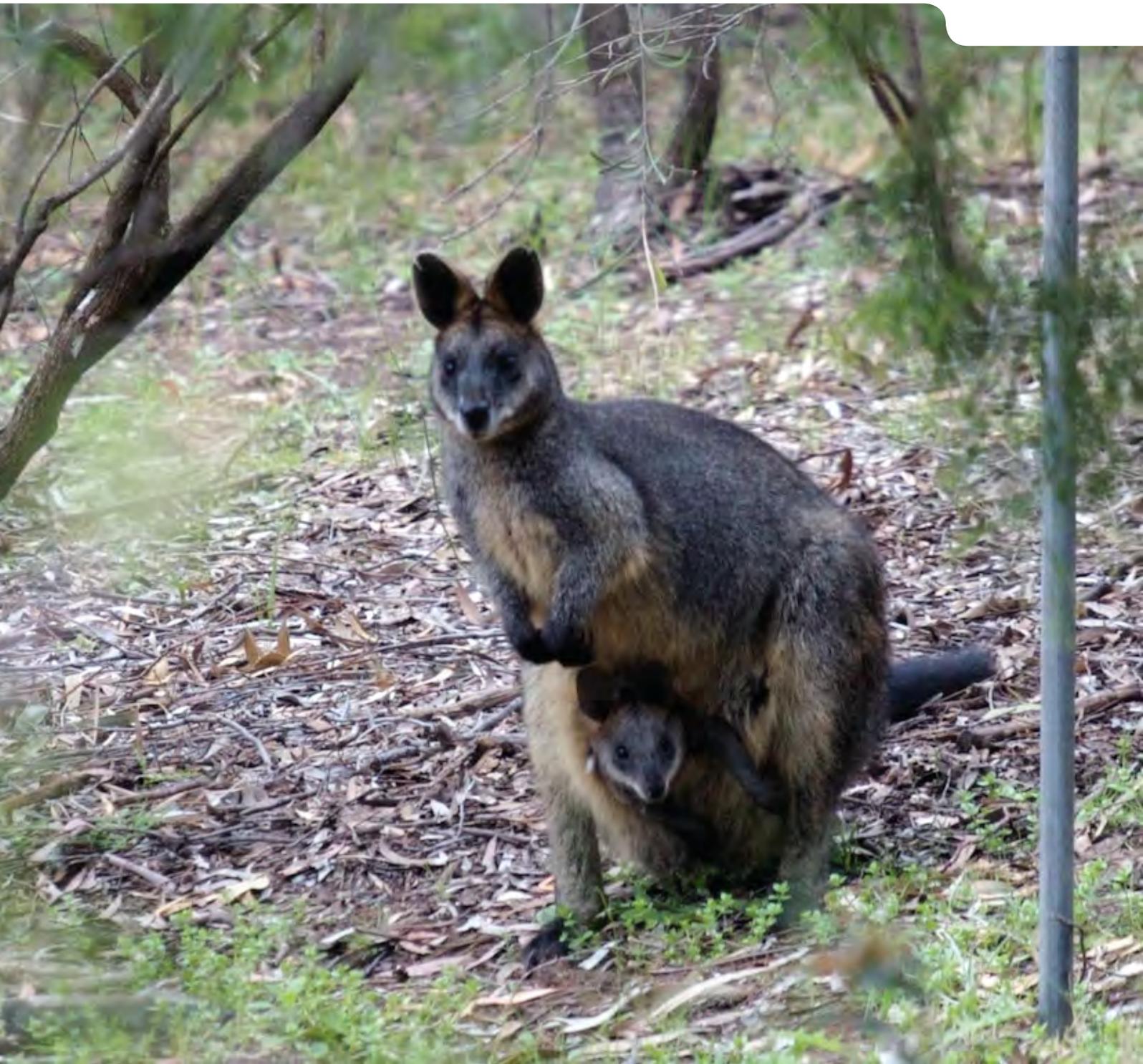
THE FUTURE

ANU is committed to being a leader in campus sustainability. The ANU Environmental Management Plan was first launched in 1998 and led to the establishment of the ANUgreen program. This plan has been reviewed twice over the years and the current Environmental Management Plan is set to expire at the end of 2008. We are currently developing new sustainability targets to set the tone for future initiatives.

The new plan will address the challenges of a growing University in a world where good environmental citizenship is expected of all major organisations. The plan will establish targets that significantly reduce greenhouse emissions, waste and water consumption, as well as build the ecological diversity of the campus and promote community engagement.

The campus sustainability program will continue to focus on developing innovative solutions to reduce our environmental impact. At the same time, it will seek effective ways to link the University's research, teaching and operational activities to foster collaboration and build commitment to our sustainability goals.

The targets we will set to reduce our environmental impact will be aggressive, but achievable. The Environmental Management Plan will provide strategic direction for the University to model best practice sustainability strategies both locally and globally.





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