

## VICTORIA'S ECOLOGICAL FOOTPRINT

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### WHAT IS ECOLOGICAL FOOTPRINT?

Ecological Footprint (or Footprint) is a resource accounting tool that measures how much land and water area a human population requires to produce the resources it consumes and to absorb its wastes, taking into account prevailing technology.

In order to live, we consume resources from the planet. Every action impacts the planet's ecosystems.

### What is the Victorian Ecological Footprint?

The average Victorian needs 8.1 global hectares<sup>1</sup> (gha) of land to sustain their lifestyle. If everyone on the planet lived like Victorians, we would need more than four Earths to support us.

The Victorian Footprint is approximately 5 per cent larger than the Australian average Ecological Footprint of 7.7 gha per person. Compared to the average Australian, Victorians use three times more natural gas and one tenth less electricity, although the predominant fossil fuel in Victoria used for electricity is brown coal which is more emissions-intensive. Victorians also eat more seafood, drive further and our houses use more energy.

<sup>1</sup> A global hectare refers to one hectare (approximately soccer field size) of biologically productive space with world-average productivity.

### What does this mean?

The Ecological Footprint helps us to understand underlying sustainability questions. It measures the extent to which humanity is using nature's resources. When humanity's ecological resource demands exceed what nature can continually supply, we move into what is termed ecological overshoot.

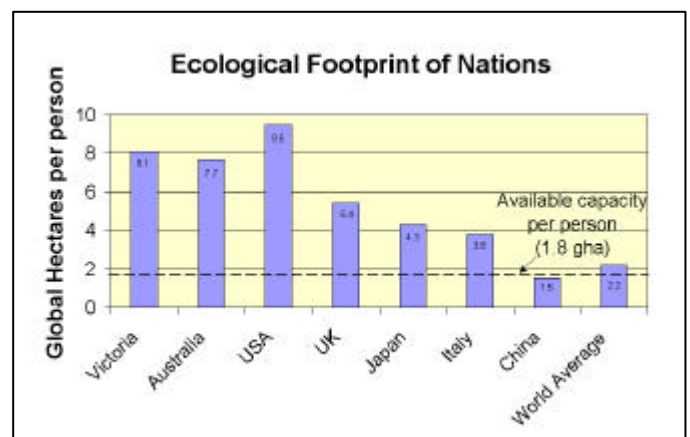


Figure 1

Australians are using 7.7 gha, while Victorians are using more than 8 gha per capita (Figure 1). On a global scale, the average citizen uses 2.2 gha per capita. If we divide all the biologically productive land and sea on Earth by the global population, 1.8 gha is available for each person per year, not setting aside any land for other species. This means currently it would take 1.2 years to regenerate the resources used by humanity in one year. This

indicates we are using nature faster than it can renew itself and ecological overshoot is in progress.

## What are the major contributors to our Ecological Footprint?

In general, Ecological Footprint measures resource consumption of human activities across the whole lifecycle of a product or service and converts this to the amount of land needed to supply the resources consumed and assimilate the waste generated. Ecological Footprint accounts for our global economy by capturing the impact of imports and exports.

The resources required to grow and deliver food to Victorians contributes the greatest percentage to the average Victorian Footprint, followed by consumer goods, housing, services and mobility (Figure 2).

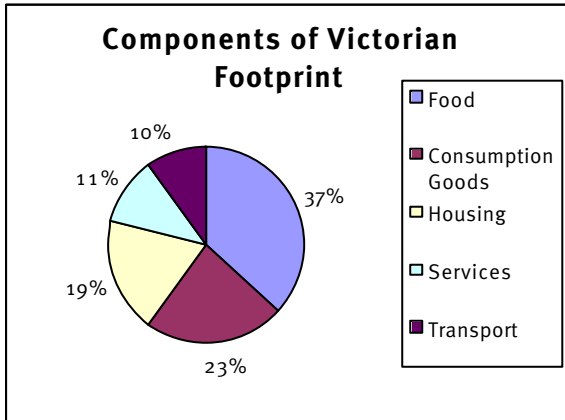


Figure 2

The Ecological Footprint measurement tool does not account for hazardous impacts of products, for example the impact of dioxins released in the atmosphere, as no land is consumed by the dioxins being released into the atmosphere.

## What can we do to achieve Footprint savings?

Measuring our own Footprint can help us to use resources more carefully, so we can secure people's wellbeing – now and in the future. Calculating the Footprint of your organisation, household or school helps to identify the environmental impacts of everyday activities and capture progress towards more sustainable practices. The challenge is to achieve Footprint savings – both directly through your own behaviour and indirectly through other people or organisations' behaviour that you can influence. You might find that you save money (increasing the household or school budget, or business profitability) and improve your quality of life or business profitability by examining your Footprint and undertaking actions to minimise it.

To help people understand the actions that contribute to our Ecological Footprint, EPA Victoria has developed calculators to help Victorians measure their own Ecological Footprint, or that of their workplace or school. The calculators, along with hints on how to live well within the means of nature, are available at [www.epa.vic.gov.au/eco-footprint](http://www.epa.vic.gov.au/eco-footprint).

## VICTORIANS ARE ALREADY CONTRIBUTING TO A MORE SUSTAINABLE SOCIETY

### City of Port Phillip – Sustainable Living at Home Program

The City of Port Phillip's Sustainable Living at Home (SLAH) program is designed to create a more sustainable lifestyle and community for Port Phillip residents, uses the Household Eco-Footprint

Calculator to measure the effectiveness of the SLAH program and to investigate the changes made in participating households. Participants are asked to calculate the Ecological Footprint for their home at the beginning and end of the six-month program. Program participants have reduced their Footprint by 6 per cent from 910 gha to 850 gha. The program had the biggest impact on water use and waste generation, which both decreased, and public transport use, which increased.

The City of Port Phillip has found that the Ecological Footprint helps their residents identify actions that protect the environment and are convenient, while also helping the Council measure the effectiveness of its sustainability behavioural change programs.

## **VicSuper**

VicSuper participated in EPA's Ecological Footprint Pilot Program. This program provided VicSuper with the opportunity to determine its environmental impact and assisted VicSuper to develop and implement a long-term office sustainability plan.

VicSuper measured the impact of its office and some of the products and services consumed in its office operation. Its calculation included consumption of gas, electricity, water, goods and food as well as waste produced and recycled, and travel undertaken.

Calculating the Footprint of VicSuper's office-based activities gave VicSuper the impetus to collect information not previously collected – for example, how staff members travel to and from work.

Participation in the program also provided the basis for VicSuper to estimate data such as water usage, which it previously could not measure, as water in

VicSuper's building is not broken down on a tenant basis. VicSuper was able to compare the impacts of different activities and determine which ones have the largest ecological impact.

## **Lend Lease**

Lend Lease's retail group has been working with EPA Victoria on the Ecological Footprint calculator project. Mark Fookes, general manager of retail investments for Lend Lease, said, "The Ecological Footprint tool helps communicate the benefits of incorporating sustainable design principles and materials in the redevelopment of our shopping centres".

Calculations suggest retail centres have a footprint in the order of 1,600 m<sup>2</sup> per m<sup>2</sup> of gross lettable area. The company is now working to incorporate sustainable design principles and materials into many of its developments. For example, there are many sustainability features being incorporated into the redevelopment of the Melbourne Central Shopping Centre. This includes natural air ventilation for heating and cooling, reducing air-conditioning costs, energy use, and carbon dioxide emissions. Lend Lease estimates the footprint could be reduced by as much as 15 per cent over time.

Lend Lease is planning to use the calculator to measure the results of its sustainability initiatives, and has also set overall portfolio reduction targets.

EPA Victoria has worked in collaboration with international Ecological Footprint experts Dr Manfred Lenzen, from Integrated Sustainability Analysis, University of Sydney (USyd) and Mathis Wackernagel of the Global Footprint Network (GFN) to jointly produce a robust assessment of Victoria's Ecological Footprint. A key objective of this study from a technical perspective was to assess the relative strengths and weaknesses of the respective methodologies and work towards a consolidated methodology, combining the strengths of both methodologies.

The report considers the elements that make up Victoria's footprint and differences in Ecological Footprint between average Australians and Victorians. The full technical report will be made available on the EPA website by June 2005.

**For more information about Ecological Footprint, visit [www.epa.vic.gov.au/Eco-footprint/](http://www.epa.vic.gov.au/Eco-footprint/).**