



eco & carbon footprints



what are they?

They're tools to help calculate the impact humans are having on nature. They can give a rough idea as to whether our way of life is sustainable.

The 'footprint' of an individual, community, country or the whole of humanity is expressed as the land area required to provide the resources and absorb the wastes involved in sustaining them - in 'global hectares'. For ease of understanding, this can be translated into the number of planets required for everyone to live that way. For example, as an individual, if calculations show that I have a '2-planet' footprint, it means that if everyone in the world lived like me, it would require two Planet Earths to support us all. As we only have one Earth, the footprint of humanity obviously has to be less than one planet, or we will degrade this one until it won't support us any more.

Carbon footprints are a measure of greenhouse gas production; ecological footprint is concerned with the total impact of our activities. So your ecological footprint includes your carbon footprint, along with other measures of resource use (water, soil, energy, food, fibre, timber, minerals, etc.) and waste. Your carbon footprint is almost entirely down to the amount of fossil fuels you are responsible for burning (plus a component linked to the amount of biomass you are responsible for removing).

History: the term 'ecological footprint' was coined in the early '90s by Mathis Wackernagel and William Rees at the University of British Columbia, who founded the Global Footprint Network.

The footprint of an individual, community or nation is calculated as $\text{Population} \times \text{Consumption} \div \text{Biocapacity}$. With a population approaching 8 billion, humanity as a whole is currently exceeding

the planet's biocapacity by a factor of 1.7. That means we're using 1.7 times more ecological resources than nature can regenerate in a year, for example by emitting more carbon dioxide into the atmosphere than forests can absorb.

Put another way, the eco footprint of humanity is now 1.7 planets – so we're using 1.7 planet's worth of stuff when we've only got one. But that's a global average. Some people (in most of Africa, for example) consume very little, while others use a lot more than their fair share. In the UK we're guzzling our way through 3.5 planets worth of stuff every year, and in the US and Australia, it's nearer 5. It's clear that not everyone can achieve a Western standard of living.

We passed the global Earth Overshoot mark – the point at which we exceeded the planet's biocapacity – in the 1980s, and our ecological footprint has continued to grow steadily ever since. The main drivers are population growth and over-consumption. Global population is predicted to be 10-11 billion by the end of the century, around 80% of whom will be living in cities. Certain parts of the world are also seeing a rise in the middle-classes, with increased wealth and disposable income, so consumption has increased there too. In the space of one generation, China has gone from almost no-one owning 'luxury' goods like fridges and cars to almost everyone owning them. There's also been a rise in the numbers of the global super-rich – and they spend *a lot*.

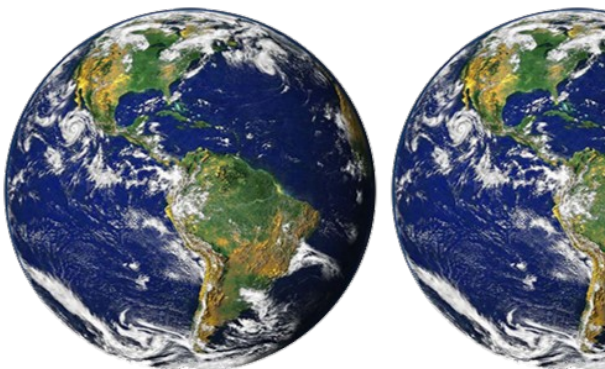
what are the benefits?

Eco and carbon footprints make it very clear whether the way we live is sustainable or not. Lowimpact.org is all about reducing our impact on nature – but before the 'footprint' concept was developed, it was very difficult to work out what our individual or collective impact actually was.

Although the eco / carbon footprint concept is a bit of a blunt instrument, and can only be a rough guide, it does have the advantage of allowing us to visualize the impact of overall human demand on nature versus what nature can cope with.

Calculating your personal footprint allows you to see where you're exceeding 'one-planet', and to identify areas of action to reduce your consumption, and therefore impact. It gives you a target to aim for (a one-planet footprint). The same thing works for countries and communities of any size.

There are educational benefits too. Teaching about ecological footprints in schools allows children to make the connection between daily life and global sustainability.



This is how many earths we need if we want to continue consuming as we do – 1.7 and rising. But we only have one, so unless we move away from constantly trying to increase production and consumption, we're on a suicidal path.



what can I do?

In a nutshell, make sure that your footprint is less than one planet. To calculate your footprint, you can use an online calculator (see resources).

The Global Footprint Network states that: 'An ecological deficit occurs when the footprint of a population exceeds the biocapacity of the area available to that population.' However, this depends on arbitrary decisions about borders. So Singapore has a high deficit, but it's a city-state with no rural hinterland to provide raw materials and absorb waste; but if Singapore were part of Malaysia, its score would improve, without any change in lifestyle. It's maybe more consistent to base an area's footprint on the average footprint of its citizens.

As an individual, you can work out where your greatest impact is, and see what you can do to reduce your footprint. Consumption is the biggest factor. Think about how much you buy, where your food comes from, the transport you use, how much you fly, how energy-efficient your home is, etc. Lowimpact's topics are a good place to start.

If you own a business, move towards closed-loop production, where nothing is wasted, as in nature. Cars and phones are being developed that can be taken back to the factory at the end of their life for disassembly and their component parts reused.

It's hard to influence things globally, but you can start at the local level by joining or setting up projects that operate outside the current dominant economic system, which relies on perpetual, unsustainable economic growth and ever-increasing spending (the lists of countries ranked by per capita GDP and by per capita ecological footprint show an unsurprising correlation).



The ecological footprint concept was born as a doctoral dissertation by Mathis Wackernagel (left) under the supervision of Prof. William Rees at the University of British Columbia, 1990-94.



The first couple to build a home under the Welsh One-Planet Development policy, which allows people to build homes on their land if they commit to live with a one-planet footprint or less.

A number of communities have taken up the One Planet challenge and are working towards keeping consumption within one-planet limits. Wales is aiming to achieve it within a generation, and the One Planet Council offers people an affordable and sustainable way to live on their own land.

While it might seem that returning to the land is the answer, and that many cities have significantly higher per capita footprints than the average for their nations, urban areas can often offer better opportunities for sustainability than rural areas. Heating is more efficient when people live closer together, and you need less infrastructure like public transport to provide the same level of service to more people.

Pressure your local council to improve energy efficiency and take measures to reduce consumption. You can also get involved with Earth Overshoot Day – the date when humanity has used the resources it takes the planet the full year to regenerate. It gets earlier every year. Between 2000 and 2017, Earth Overshoot Day moved forward from late September to early August.

resources

- see lowimpact.org/eco-carbon-footprints for information, courses, links, books, including:
- Mathis Wackernagel, *Ecological Footprint*
- David Thorpe, *the One Planet Life*
- N. Chambers et al, *Sharing Nature's Interest*
- footprintcalculator.org – GFN calculator
- footprint.wwf.org.uk – WWF calculator
- oneplanetcouncil.org.uk – promoting one-planet development in Wales

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