

Ecological Footprinting

What is the real size of our footprint on the planet?



I guess we sometimes sit back and wonder whether the world has the capacity to sustain all the living systems on the planet, including the continuously expanding masses of us, humans. This concern or

awareness is what led to the notion of sustainability. In other words, can we sustain our lifestyles, our ecology, and us, and can this be achieved without 'stealing' from future generations? The debate is fascinating, with some arguing that the planet is already well beyond its regenerative capacity and others disagreeing. But how do we know with more certainty? One way to quantify the 'impact' of our activities is Ecological Footprinting (EF). I recently met and spoke with Mathis Wackernagel (inset), Sustainability Program Director at Redefining Progress (a US nonprofit organisation), who travelled to Australia to promote EF as a measuring tool for human use of natural capital. Wackernagel, who developed the concept of EF as his doctoral dissertation with his advisor William Rees, is widely recognised and regarded as the unequivocal authority in the field.

According to Wackernagel, EF is an ecological accounting tool used to document in one number how much regenerative capacity of the biosphere is occupied by given human activities. In his own words, Wackernagel describes EF calculations as being based on two simple facts: first, keeping track of most of the resources we consume and many of the wastes we generate; second, measuring these resource and waste flows as a corresponding biologically productive area required to maintain these flows. Thus, the EF of any defined population (from a single individual to a whole city, country, or humanity as a whole) is expressed as the area of the biologically productive land and water required to produce the resources a population consumes, and to assimilate the wastes it generates, using prevailing technology.

According to his research Wackernagel has estimated that based on current estimated world population, there are 1.9 global hectares of biologically productive space available per person on earth. Using 1999 data he estimates that the world average EF of 2.3 global hectares per person means that humanity is currently exceeding the biosphere's ecological capacity by 20%. In other words, resources are used 20% faster than they are being regenerated. Expectably, the US has the largest EF, being 9.6 global hectares per capita, with Australia fourth with 6.9, behind Norway and Finland. Interestingly, Australia, due to its enormous land mass and moderate population has amongst the highest capacity of any country (14.7) for being able to support its population.

All this means that we need to continually look for ways to minimise our consumption patterns and reduce our waste. Or we can look at alternatives that are more radical such as encouraging smaller families and slowly shrinking the human population (particularly those groups with large Footprints), because there is no more land being made available – or is there? One interesting approach I recently came across was the creation of two new islands, the largest to be constructed by man, the Palm Islands in Dubai. The islands, in the shape of palm trees will be so large that they will be visible to the naked eye from space. I suppose that's one way to manage our EF, but perhaps not the most sustainable.

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