

## Are There Too Many People on the Planet?

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It has been said before, but in the light of renewed public discussion with regard to the level of human population it bears saying again: the argument that there are too many people on the planet is simply not sustainable, especially for places like Australia.

### WHAT IS THE CURRENT POPULATION?

The population of the world on May 17<sup>th</sup> 2011 is 6.918 billion and climbing at the rate more than one per second ([www.census.gov](http://www.census.gov)). How much is 6.918 billion? To put some perspective on the matter, consider Kangaroo Island which lies immediately south of St Vincent's Gulf, i.e. just south of Adelaide in South Australia (see maps). It has an area of 4 405 km<sup>2</sup>, i.e. 4.4 billion m<sup>2</sup> so the **total current world population** could hold a mass meeting on Australia's Kangaroo Island if we agree that 0.6m<sup>2</sup> (6.5 ft<sup>2</sup>) is sufficient to stand on. And, if we wanted more space, we could always move the venue to a larger island, e.g. Tasmania (bottom right of Map 1). 'Tassy' has an area of 68 332 km<sup>2</sup> so **the whole of the Earth's population** could be accommodated there; each person would have about 10m<sup>2</sup> to store their belongings and lay out their blow-up mattress.

Moving to the whole land mass, we note that the total area of land on the planet is 148 429 000 km<sup>2</sup> so a population of 7 billion means that the population density is 1 person to every 0.021 km<sup>2</sup> or 2 hectares per person.

Of course, the density of population varies considerably from country to country. Table 1 gives a few key figures. The most populace states are mostly City and Island States (Monaco, Singapore etc.). Ignoring these, Bangladesh is the most densely populated with 11 people per hectare and next is South Korea with 5/hectare. Lebanon is the most populace country in the Middle East, closely followed by Israel; and the Netherlands and Belgium have the most people per hectare in Europe. Rwanda and Barundi are the most populace states in Africa. The UK and Germany support about 2.5 persons per hectare, i.e. one person per acre in the old scale. India has 3.6 people per hectare (if you can have 0.6 of a person) while Nigeria, the most populace African state supports 1.7/ha. China, the most populace state in the world, has a population density of 1.4. At the other end of the scale, the citizens of the USA and Brazil have about 3 hectares per person, while Canada, New Zealand and Australia are arguably under-populated.

So, what is an acceptable level of population? Ignoring the City and Island States (that are sufficiently innovative to sell services for food to their advantage) this will depend on the capacity of the land within a nation's boundary to provide the basic food and shelter required for life, and this in turn will be determined by both *the amount* of arable land and *the technology* that exists to render the land productive.



Map 1: Kangaroo Island lies just under the name 'Adelaide' (centre bottom of map); Tasmania is the larger island, bottom right



Map 2: Kangaroo Island is the small orange patch under the name 'Pensehew'.

When the Rev Thomas Malthus (Malthus 1798) wrote his famous essay in 1798, he was concerned that the British population has risen to 7 million; today it is 62 million, and if the combined wealth of the British was distributed evenly we would hardly say that the UK has gone backwards since Malthus's time. Humans are not robots or passive behaviourists dictated to by natural laws, as Malthus and later Darwin would have it. On their best days humans are highly pro-active agents capable of remarkable innovation with regard to

the task of improving the quality of life and, perhaps even more importantly, amazingly persistent with regard to survival. How the citizens of Bangladesh survive in their delta with its frequent floods and storms is something of a mystery to most of us, but they do survive. Of course, it might be argued that many of them could hardly be classified as living 'the good life'. But they are not without hope; thanks to people like Nobel Prize winner Professor Muhammad Yunus (Yunus, 1998) who have cared enough to do something constructive to improve their lot. Be that as it may, eleven people per hectare might still be considered an unacceptable figure even for highly productive land like that in Bangladesh. If it were, a world population ceiling of 165 billion could be

Country	Persons/hectare
Monaco	165
Singapore	72
Malta	13
Bahrain	12
Bangladesh	11
Maldives	10
Vatican City	8
Mauritius	6
Barbados	6
South Korea	5
San Moreno	5
Nauru	5
Lebanon	4
The Netherlands	4
Rwanda	4
Israel	3.7
Haiti	3.7
India	3.6
Belgium	3.5
Japan	3.4
The Comoros	3.2
The Phillipines	3.1
Sri Lanka	3.1
Barundi	3.0
United Kingdom	2.5
Germany	2.2
Nigeria	1.7
China	1.4
Malawi	1.3
The USA	0.3
Brazil	0.2
Canada	0.03
Australia	0.03
New Zealand	0.016

Table 1: Population Density: Most Populace Countries & Selected Countries

hypothesized, certainly well above a mere 7 billion. But the reader will be quick to argue that there is a lot of desert and un-arable mountains in the world land mass. And so there is. A reasonable population

density might have to be well below 11 persons per hectare.

## POPULATION DENSITY BY CONTINENTS

Table 2 lists the land areas and population density for the continents. We see from this that the mean population density is well below 11, in fact it is even below 1 person per hectare for the most densely populated continent (Asia) and well below 1 for all of the other continents apart from Europe.

Continent	Area km <sup>2</sup> (millions)	Population Density Persons/hectare
Asia	43.8	0.8
Europe	10.2	0.7
Africa	30.4	0.3
North America	24.5	0.2
South America	17.8	0.2
Australia	3.6	0.03

Table 2: Areas and Population Density by Continents

Europe grows most of its own staples – wheat, barley, sugar beet, etc, but it does import a lot of food, especially meat and fruit. Maybe a population density of 0.7 is a little high, But then again, the level of affluence in Europe is well above a survival level so 0.7 might be sustainable.

There are some food problems in Asia. China is an interesting case. China is currently finding it difficult to maintain its food supplies, especially with the rise of a new middle class. There are a million Chinese in Africa at the moment and their main interest there is growing food *for China* in places like the North West Province of Zambia. As the demand for a better life continues to rise in China we can expect this policy to continue. China has extended her borders as far as she is probably able; now it will be a matter of making offerings to African countries in order to get at their food production resources. Australia is not immune to this either; the Chinese have recently purchased numerous properties along the River Murray and are operating them with mostly illegal immigrant labour. The Chinese experience supports the view that that 1.4 people per hectare may not be sustainable, except at a low level of economic development with a lot of people living in poverty. It has been said recently that the new Chinese middle class all want a washing machine but there is not enough nickel in the world to make the steel. But this will only be a problem if we cannot look to someone to find another labour saving way of washing clothes effectively. The rise of technology over the past one hundred years suggests that the shortage of nickel may not be the end of the world,

or the possibility of sustaining a world population above 1.4 persons per hectare.

## UNDEVELOPED RESOURCES

The steady rise of population will inevitably cause people and governments to look for undeveloped resources. The Chinese have not only pushed into Africa in recent times but are found on practically every island in the Pacific setting up shop. The Indian government has also begun developing links with African countries recently. The wide open spaces in the Americas and Australia must remain prime targets, although, in the case of Australia, land alone without water is not very useful.

Sub-Saharan Africa probably has the most immediate potential. Mozambique, with its excellent soil, climate and multiple permanent rivers located at regular intervals across the landscape could probably feed the whole of the current African population. The potential of the rift valley lakes also remains virtually untouched. Lake Malawi is a good example. Some 500km long, with a mean width of around 80km and a mean depth of 600m, this Lake contains around 8 million giga-litres of fresh water you can drink. The water is not run-off surface water from rainfall; it derives from 'the fountains of the great deep' (Genesis 7:11, Scholefield 1967). This was confirmed in 1979 when the Lake rose three metres virtually overnight. A German photographer flying over the African lakes at the time took pictures with an infra-red camera; the spirals of water rising out of the rift are evident (Readers Digest, July 1979).



Lake Malawi at Cape Maclear, Malawi

There are around 250 000 hectares of flat land adjacent to Lake Malawi that could be used to irrigate food crops and the Malawi Government has a Greenbelt program in place aimed at utilizing their immense water resource. The Malawi climate is suitable for growing just about any commercial crop; rice, maize, canola, ground nuts, cotton, all kinds of vegetables and sub-tropical tree crops, etc. And the land around Lakes Victoria and Tanzania has a similar potential. Undoubtedly, Africa has the

opportunity to contribute greatly to the world food supply and it is not surprising that there are a million Chinese in Africa at the present time.

## WHAT ABOUT AUSTRALIA?

In May 2011, the Australian population is 22.6 million ([www.abs.gov.au](http://www.abs.gov.au)) with a population density of 0.03. Much of the Australian land mass is desert; maybe it cannot support a high population. Australia might not be able to rise to 0.7 persons per hectare like Europe but this is a long way from 0.03.

To get an idea of just how low the Australian population is, consider the following case. If we can agree that an average household is four people, we could argue that Australians need 5.65 million houses to live in. And if we further agree that 600m<sup>2</sup> is a reasonable sized house allotment, we can argue that 3 300 km<sup>2</sup> is the area of land needed to accommodate the whole of the Australian populace. By this account we could build enough houses on Kangaroo Island to house **all Australians** and have 1 105km<sup>2</sup> available for roads and other infra-structure. Further, if we were prepared to live in blocks of high rise flats like Hong Kong residents we would have significant areas available for movement and recreation. Of course we would have to eat mostly seals and fish (of which there are abundant supplies around the Kangaroo Island coast) but that might not be so bad - the Eskimos in the Arctic live quite satisfactorily on seals and fish. And we should not forget that it could be rock lobster, mussels and marron for Sunday lunch. And there is always the Australian mainland, of 770 million hectares, nearby. Maybe we could send a few folk into the wilderness to time to collect or grow other food stuffs for us.

So why are people arguing that Australia has a population problem? Maybe we have one because we prefer to live in cities rather than in the open spaces. This has had numerous side effects, like people being unaware that food comes from crops and livestock, not from a magic box in the shed behind the local store or super-market. Another self inflicted problem is that we build houses on arable land. This not only reduces our potential for food production but, when the floods come, our houses get washed away (*a la* 2010/11). These are matters that could be easily addressed by sensible government policy makers. Australian has the potential to support many times its current population and the politicians and pontificators should stop wasting time arguing about it.

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