SHOULD SPELEOLOGICAL SOCIETIES AND THE ASF HAVE A POPULATION POLICY?

By Norman Poulter
Speleological Research Group Western Australia Inc

During June 1999, the world's population is expected to reach and then surpass 6 billion! Is this achievement something to be proud of - or a further sign that humanity's arrogance is overlooking the fact that is seriously overtaxing the planet's delicate ecosystem? Is this fact a result of recent calculations? No! It has been known since the early 1970's [or earlier] that the world's population would attain this figure somewhere around this period - and few at the time [or since] seemed interested in what the consequences could mean.

It took at least 100,000 years for global human population to reach two billion. In 1800, world population stood at 1 billion. Now, just on 200 years later, we are 6 times that number and poised to grow at an even faster rate unless fertility rates can be lowered. It took 130 years [1800-1930] for world population to grow from 1 to 2 billion but then a mere 30 years [1930-60] to increase by another billion. Since 1960, we have been increasing at the rate of almost a billion every ten years. But that ratio is set to change dramatically.

What has all this to do with speleology? Should we collectively "buy into" a potentially divisive debate that would be seen by many as being well outside the aims and objectives of a speleological society or federation? 1 believe we should, as, whether we like it or not, population pressures DO have an effect on caves and karst regions!

1 would hazard the guess that in none of the recent environmental "battles" fought on behalf of karst regions, has population pressure been cited as an argument against a particular proposal. Indeed, one of the most enduring arguments against destructive development, at least in regional areas, is the perceived greater benefit to be gained from increased tourism. Then, if the battle is miraculously successful - work often begins to curtail [or prevent] tourist development! Why? Because too many tourists can easily degrade or destroy the very features they go to marvel at!

Limestone is one of the most useful commodities exploited by modem humanity. It has either directly or indirectly played a part in the provision of all goods and services that we utilise in everyday life. Glass to paper - food to housing - steel to fuel.

Most, if not all our environmental problems are population driven - again, either directly or indirectly.

A short but incomplete summary could include:

• mining	Mt. Etna [Qld.], Colong, Yessabah [NSW] Exmouth [WA], Ida Bay [Tas.]
• forestry	Mole Creek, Junee/Florentine [Tas.]
• urbanisation	Yanchep/Wanneroo, Pinjarra/Mandurah [WA]
• agriculture	Nullarbor, Leeuwin-Naturaliste Ridge [WA], Naracoorte [SA] and Pike Creek [Qld.]
• tourism	virtually all karst areas.

Mining of Mt Etna Queensland 1999
Photo: Arthur Clarke

Now, while Australia's population has been increasing, membership of the ASF has declined. In 1965, I seem to remember that the ASF, through its associated societies, had a membership of about 800, higher than it did in early 1998 - although 1 hear that membership has recently risen to be close to 1000. However, at the same time, the popularity of eco-tourism [involving caves] and adventure caving has increased many times over since the introduction of those activities.

Many, many years ago on an ABC radio series by Dr. Paul Ehrlich where Australia's population was mentioned, he alluded to conclusions that could be drawn by various demographers [study of births, death, disease & conditions of life in communities] using the same statistics. He stated that in relation to food production, demographer "A" said, Australia [provided we stopped or curtailed food exports] could support a population of 30 million, while demographer "B" agreed, that due to our water resources, Australia could indeed support a population of 30 million - provided half of them lived in Tasmania! Now, Tasmania is currently struggling to support a population of half a million [despite former Premier Rundle's best efforts to double the population]. So what would they do with an extra 14.5 million people and where would they house them?

Australia's population currently stands at approximately 18.7 million but the Federal Government anticipates the population to "peak" [given the current trend in births, deaths and immigration] at or about 23,000,000 by 2020. Former Prime Minister Malcolm Fraser, is on record [with others] that we should aim [Indeed have a "duty" to aim] for 50,000,000 over much the same time span. This is in direct contrast to what the general public seem to prefer - that is, a lower population. Dr. Tim Flannery of "The Future Eaters" fame, is on record several times over saying that Australia should have a population of about 12,000,000 in order to maintain a sustainable environment. This call has been echoed to a slightly lower degree [9,000,000] by Professor Harry Recher [Environmental Management, Edith Cowan University].

In todays "politically correct' and "Hansonite climate", any voices raised [even on environmental grounds] objecting to Australia's directionless "policy" of limitless [population] growth, have been immediately branded racist or worse by religious, political, some ethnic and special interest groups, which includes the "immigration industry". I use the term immigration industry because that is what it has become, complete with lobbyists, specialist lawyers, consultants and publicity machines, feeding on people's fears, aspirations and prejudices but often supported by religious, ethnic and media groups. It is often a neat but vicious circle!

I would mention at this point, that due to the perceived isolation of Western Australia, from detailed information about current environmental issues on the eastern seaboard - and visa versa - this paper attempts to highlight problems existing in Western Australia, problems that quite probably mirror similar instances existing in the rest of Australia. 1 also think it fair to acknowledge my membership of "Australian's for an Ecologically Sustainable Population Inc." [AESP]

According to the Western Australian government, Perth's population of 1. 1 million will double within the next 16 years. The current Liberal Government seems quite proud of this forthcoming increase although such an event will place enormous strains on already scarce water and food resources, not forgetting such infrastructure as roads, transport, sewerage and energy. Conveniently forgotten in all this euphoria, is that the majority of Western Australia's lower coastal strip, is dune limestone - a very friable rock. Some years ago, it was fairly common knowledge amongst some domestic reticulation contractors, [45-50% of Perth households have their own bores], that drill holes often broke into subterranean cavities. Caves exist near central Perth and in the banks of the Swan River. This is not to suggest that some sections of Perth's older suburbs are about to collapse into the ground in the near future but - the possibility is there.

Where karst areas exist close to centres of population, pressure is being placed on those regions by urbanisation. As Perth urbanisation expands, especially to the north and south - extensive karst areas are being steadily encapsulated and sub-divided. The city of Wanneroo, which includes Yanchep, has extensive shallow and highly friable cavernous regions. Indeed, WASG and SRGWA were instrumental in postponing development in one Wanneroo region during early 1997. Postponed! The council only placed a 10 year moratorium on the proposal, after which it could well be resurrected. There were indications that the developers and council were not about to highlight the fact this was a known cavernous region - a risky undertaking in today's "public liability" and litigation-prone climate. I might add that the urban sprawl is less than 2km from this region. South in Mandurah, caves already exist within the city limits with more karst regions set for development in the medium-term. Urbanisation of karst areas brings its own problems and concerns as evidenced by the mad scramble for explanations that took place in Mt Gambier during 1997, when unexplained subterranean noises were heard, noises later attributed to "water-hammer" in pipes undergoing increased use due to maintenance work elsewhere in the district. Quite a humorous incident in hindsight - but a genuine cause for the "jitters" at the time.

Much of the water that supplies the Perth metropolitan area and Goldfields regions, now comes from underground sources [commonly referred to as "mounds"]. Due to the current fickle nature of the winter rains, the dams of the Darling Scarp are rarely capable of supplying the year-round demands expected of them. This has resulted in increased reliance on the little understood water mounds. To the north of Perth lies the Gnangara Mound, a mound that extends into the limestone regions of Wanneroo and Yanchep. As Perth's population has increased, so have the demands placed upon the Gnangara [and southerly Jandakot] Mound.

When inviting public comment into the proposed northerly extension of the Gnangara Mound during the early 1980's, the water authority estimated that they would lower the watertable in the Yanchep National Park region by half a metre - enough to dry out most of the [stream/lake] caves. Their solution to this "dilemma" was that the Department of Conservation and Land Management [CALM] should cut down half of the nearby pine plantation - a solution once flatly rejected by CALM. In more recent times, the Court Government announced plans to indeed remove half the trees in order to establish an enormous park. Work has yet to start. In the meantime, the caves of Yanchep are drying [the lake and stream in the tourist cave (Crystal) has all but disappeared] and the unique fauna therein placed at extreme risk.

As the water table drops, many of metropolitan Perth's surface lakes have been drying out, resulting in a loss of surface species and habitat for both resident and migratory water birds. During the latter part of last century and early this century, many lakes were simply filled in. In recent times, Councils resort to spring and summer pumping to keep the lakes "full'.

Western Australia's premier tourist region is the south-west, an area that includes the highly popular Leeuwin-Naturaliste Ridge, an area that currently receives about 1,000,000 visitors a year. The Ridge also contains some of the state's most spectacular caves such as Easter-Jewel, Crystal, Strongs and Labyrinth to name but a few. For more than 20 years, speculators have been trying to turn parts of the Ridge into another Surfer's Paradise - helped along by the development of the hotel, surfing and wine industries. The traditional dairy and forest industries are in decline. Areas that were once State Forest are now National Parks. Where once excessive groundwater extraction could possibly be blamed on the dairying activities, now it should be placed mainly at the feet of the burgeoning population of incoming residents, tourists and wine industry.

Although, to be fair, the region has also suffered from loss of "average" rainfall in recent years. Several caves have already suffered loss of water. The lakes of Jewel have disappeared while the lakes of Easter have dropped alarmingly. The stream in Strongs has all but disappeared, the root mats, so important to the troglobitic fauna, has dried and died in many sections. Is all this attributed to population increase or natural evolution? Other stream caves such as Crystal, Calgardup and Lake appear quite healthy with no apparent drop in water level or flow.

About 1.5 days drive north of Perth lies the town of Exmouth, near the tip of Cape Range peninsula [North West Cape], a karst area with important links to the Gondwana era. Exmouth was largely created to service the American naval communication base and nearby part-time RAAF base. Over the years, the agriculture, tourism and prawning industries gained a foothold.

Following the introduction of enhanced satellite technology, the Americans moved out of Exmouth - creating a huge employment vacuum. Rather than let the town "downsize" [electorally unpopular], proposals were canvassed to help maintain the town - increased tourism to the nearby Ningaloo Marine Park and Cape Range National Park were put forward, along with plans to quarry part of the Cape Range itself. The quarry has already figured in conservation issues within the ASF - at least one cave has already been damaged.

In the past, reliance on "technological fixes", is often cited as a means of accommodating increases in population. Advances in technology can be a double-edged sword. The "green revolution" only served to allow nations to over-extend their population at the expense of the environment. The new generation of genetically-engineered crops are more chemical-reliant than their predecessors [for yield] and have the ability to plunge user nations into deeper debt and environmental degradation without solving the underlying cause - overpopulation.

In a primary and secondary industry sense, one by-product of advances in technology is to create further unemployment through displacement of jobs. The tendency of transnational and local companies to relocate their operations into countries where safety and environmental laws are "softer" and labour costs and conditions lower does nothing to help Australian's burgeoning population either. In short, advanced technology is very good at putting people out of work - especially those on the lower socio-economic scale.

How is population increase encouraged in Australia?

1. lack of a population policy
2. immigration
3. tax incentives [child allowance]
4. sales tax on contraception/birth control items
5. political/business/media "boosting"
6. religious instruction.

What are some of the consequences of population increase?

a. less arable land
b. land degradation
c. water degradation and loss
d. loss of native species
e. social unrest.

Some impacts of population growth on Australian karst regions have been:

1. introduction of permit systems, fees or loss of access
2. degradation of caves, decoration, fauna [surface and troglobitic]
3. degradation of caves caused by inappropriate land management practices in [cave] catchments [which may be outside cave reserves] - siltation, deforestation
4. lowering of watertables due to pumping, irrigation etc.
5. surface and subsurface vandalism
6. creation of eco-tourisrn/adventure caving by non-speleological groups or expansion of existing organisations
7. increased crime - theft and vehicle break-ins - a small problem maybe but it occurs nonetheless
8. mining.

Humanity in general currently refuses to admit to, and limit its growth - contrast this with Australia's continued push to control the population of perceived "pest" species such as the kangaroo, dingo, wombat and fox, to name but a few! Are we just following the crowd by not admitting that we really have a human [population] problem as instead? We cannot shamelessly say that population increase is a "third-world problem", predator nations such as the USA, Japan and Australia consume resources at a higher per-capita rate than that of the third world, not only our own resources but the resources of other countries as well.

As has been said on numerous occasions in the recent past, many of our environmental problems will not be solved until we address and solve the population problem. Australia, right now, needs to enact a humane population [control] policy while there is still time for it to be socially and mutually acceptable. Australia should not bury its head in the sand until it becomes necessary to adopt "inhumane" measures such as those that have been imposed [legally or otherwise] in nations such as India, Singapore or China and certainly well before Nature enacts its own forms of population control. The ASF and its member societies should seize the initiative by formulating a population policy and lobbying the federal, state and local governments and media to enact one also. A small step has already been taken in this regard by Premier Carr of NSW who recently said, *"..... Australia must begin to think of itself as a country with a population problem. Let's throw away for all time the notion that Australia is an empty space, just waiting to be filled up. Our rivers, our soils, our vegetation won't allow that to happen without an enormous cost to us and those who come after us."* [Carr 1997] This was followed by Professors Ian Lowe of Griffith University, who said, *"If we are to be a civilised country in control of our destiny, we need to have a strategy for stabilising the human population." and "... a restraint on the clearing of small areas of bushland could be considered as treating a symptom, whereas having a population policy could be considered as treating the underlying cause."* [Lowe 1997]

The purpose of this paper was to stimulate discussion [without prejudice] and perhaps launch the ASF into the forefront of [specialist group] environmental thinking. I hope that I have done that without ruffling too many feathers. In concluding, I would quote a United States Cree Indian saying: ***"Only when the last tree has died, the last river has been poisoned and the last fish has been caught will we realise that we cannot eat money."***

POSTSCRIPT - This paper was submitted during September 1998 for inclusion in the conference papers, scheduled at that time for publication prior to the ASF Conference in January 1999. Events precluded publication, until after the Conference.

Since the time of writing, information released by the Australian Bureau of Statistics [ABS cat. #3101.0], showed that Australia's resident population for the year to March 31, 1998 grew by 1.2% [221,900] to 18.71 million. This in turn, represented a migration intake of 100,200, coupled with a natural increase of 121,700. The Bureau's "Population Projections 1997-2051" [ABS cat.#3222.0], revealed that even if Australia could get its net overseas migration down to 90,000 and fertility rate to 1.75 [it's currently higher than that] our resident population in 2051 would be 26.4 million and rising, more than 3 million higher than Immigration Minister Ruddock currently states. Prior to the 1998 election, the Labor Party implied that it favoured a population policy but it now seems to prefer an increase above the current 1.1%. If Australia's growth rose to 1.3%, our population would rise to 37 million by 2050.

To lend weight to my arguments listed above, I would urge readers to consult Mark O'Connor's book, "This Tired Brown Land".

Norman Poulter PO Box 120 Nedlands 6909 H. 08 9276 2495 ---- W. 08 9380 2766 E-mail: cmmtech@ cyflene.uwa.edu.au

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