Ms Jenny Goldie

10 November 2010

The Secretary
Standing Committee on Climate Change, Environment and Water
Legislative Assembly for the ACT
GPO Box 1020, CANBERRA ACT 2601
committees@parliament.act.gov.au

Dear Madam

Submission to the Inquiry into Ecological Carrying Capacity of the ACT and Region

I congratulate the ACT Government on having this Inquiry and welcome the opportunity to make a submission. In 1988 I helped set up and run Australians for an Ecologically Sustainable Population (AESP) – now Sustainable Population Australia (SPA) – the aims of which were to achieve an ecologically sustainable population both nationally and globally. I have held numerous positions over the years at both branch and national levels in AESP and SPA and am currently newsletter editor. This submission is written, however, in a personal capacity though I concur completely with the policies and philosophy of SPA. I would like to appear in person at any hearings held by the Committee with respect to this Inquiry.

I will address the issue of ecological carrying capacity from the perspective of **climate change and water, climate change legislation, peak oil** and **biodiversity**. While peak oil is largely an economic rather than ecological issue, it nevertheless impinges on the general issue of carrying capacity.

I believe there is very little room for population growth in the ACT region. It is probable we have exceeded ecological carrying capacity already. We must confront the fact that we are facing a different world in the coming two decades than the one we have experienced in the past two decades. Change is likely to be rapid with an uncertain climate and an imminent liquid fuel crisis that will demand significant lifestyle changes.

The Discussion Paper notes in Table 2 that the ACT population will increase by 25% in the 2006-2026 period, or 1.1% annually, while the region's population will grow by 24%, also at 1.1% annually. On these figures, we may assume that in the next ten years (2010 – 2020, the ACT and region's population will grow in the order of 12 per cent. It should be noted, however, that the Australian Bureau of Statistics recorded for the year ending March 2010 http://www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0 , annual population growth for the ACT of 6,400 persons, or 1.8 per cent. On these figures we might assume much greater growth over the next ten years than Table 2 suggests.

The Chief Minister, Jon Stanhope, has maintained the view for some years now that half a million is the 'optimal' size for Canberra and has funded a 'Live in Canberra' campaign to ensure the population grows by another nearly 30 per cent. (As far as I am aware, he has not provided any basis for why half a million is an optimal size. The designer of Canberra, Walter Burley Griffin, envisaged a population of a mere 70,000.) According to ACT Population Projections (2007-56), the Territory's population is projected to reach 500,000 by 30 June 2050. http://www.cmd.act.gov.au/__data/assets/pdf_file/0010/119719/act-population-projections-2007-2056.pdf. Given this was based on a fertility rate of 1.75 and the national average is now 1.90, the point at which 500,000 is arrived at may well be earlier.

The intervening 40 years are critical. I believe we will see a deteriorating situation and diminished carrying capacity which may mean that we cannot sustain even a population of 357,700 (latest figures as of March 2010), let alone another 140,000 or so.

Climate change and water

Professor Ross Garnaut first warned us at the National Press Club on 4 July 2008: *"The weight of scientific evidence tells us that Australians are facing risks of damaging climate change. The risk can be substantially reduced by strong and early action by all major economies. Without that action it is probable that Australians over the 21st century and beyond will experience disruption in their prosperity and enjoyment of life and to long-standing patterns in their lives."* *http://www.garnautreview.org.au/CA25734E0016A131/WebObj/NationalPressClubAddress-Garnaut-Transcript-4July2008/$File/National%20Press%20Club%20Address%20-%20Garnaut%20-%20Transcript%20-%204%20July%202008.pdf*

Two years or more later on November 9, 2010, Professor Garnaut noted at the Shine Dome in Canberra that the three big per capita emitters of greenhouse gases – US, Canada and Australia – were all dragging their feet on such action on climate change. Copenhagen (UNFCCC COP 15 negotiations on climate change) had largely failed. Thus we can anticipate that Australians, including Canberrans, will indeed 'experience disruption in their prosperity and enjoyment of life and to long-standing patterns in their lives.'

Canberra is, of course, part of the Murray-Darling Basin. In 2008, Professor Garnaut said: "The science says that in the most likely case, there will be substantial drying and a lot of warming of Southern Australia and that will have a very big effect on the agricultural capacity of Southern Australia, for example. But there's a chance, a 10 per cent chance, that it will be much drier than that, and there'll be virtually no stream or river flow, for example, in the Murray-Darling Basin."

At the recent Canberra meeting, Professor Garnaut considered the angry community reaction within the Murray-Darling Basin to the proposal that 37 per cent be cut from water entitlements. "But what if (in the future) there is no water to distribute?" he asked.

CSIRO has recently published the findings from Phase I of the South Eastern Australian Climate Initiative (SEACI): *Climate variability and change in south-eastern Australia* http://www.seaci.org/publications/documents/SEACI-1%20Reports/Phase1_SynthesisReport.pdf. SEACI is a partnership between CSIRO, the Australian Government's Department of Climate Change and Energy Efficiency, the Murray–Darling Basin Authority, the Australian Government Bureau of Meteorology and the Victorian Department of Sustainability and Environment. They found that the unprecedented 13-year drought (1997-2009) that afflicted the Murray-Darling Basin and Victoria was a function of both global warming (climate change) and natural variability. The report says: *The current drought is the driest period since reliable climate records have been kept. It differs from previous droughts in its extent, year-to-year rainfall variability and seasonality of the rainfall decline.* Rainfall, of course, is one thing; runoff or streamflow another. As the report says: *While the current drought has seen annual rainfall decline by an average of 11.4 per cent across south-eastern Australia, the impact on streamflow has been even more extreme … it is evident that average inflows to the River Murray system over the period 1997-2009 are 50 per cent less than the long-term average.* This 'magnification' was greater than previous droughts such as

the Federation drought (1896 – 1905) or World War II drought (1936 – 1945). Climate model projections for the coming decades indicate an increasing risk of below average rainfall for south eastern Australia. The report says: *It is prudent to plan for conditions that are likely to be drier than the long-term historical conditions…*

It would therefore also seem prudent to take a precautionary approach to population growth in the region. If indeed rising temperatures lead to reduced runoff/streamflow, there will be increased competition for available water, be it from farmers or from city dwellers or from industry. City dwellers use a lot less water directly than farmers, of course, but if in the future we need to localise agriculture because of rising fuel prices (see section on Peak Oil), then more water will need to be utilised by city dwellers for local food production, be it in backyards or on the local river flats as at Pialligo.

Climate change legislation

The ACT Government is to be congratulated on the passage of the far-sighted ***Climate Change and Greenhouse Gas Reduction Bill 2010.*** This Bill sets targets to cut greenhouse gas emissions by 40% by 2020, and 80% by 2050, based on 1990 levels. It deserves to be a model for the rest of the country.

According to the Discussion Paper (2.25), although the trend shows two years of greenhouse gas emissions reduction since 2006, 'the level of emissions for 2008 is still in line with the long term trend with a … 29% increase on 1990 levels …' Thus, the long term trend for an **increase** of 29% in emissions is at odds with the Bill's target of 40% **reduction** of emissions by 2020 on 1990 levels.

Achieving the ambitious targets in the above legislation will be made even more difficult if population continues to grow at its current rate (1.8% annually). Indeed, a recent paper included in the Proceedings of the National Academies of Sciences found that slowing population growth could deliver 16 to 29 per cent of the cuts deemed necessary by 2050 to prevent dangerous climate change http://www.pnas.org/content/107/41/17521.abstract .

It is a matter of simple mathematics. Total emissions are a product of per capita emissions and the number of people, that is:

Total emissions = emissions per capita x number of people

Thus, in an effort to reduce total emissions, the object of the aforementioned Bill, it is necessary to reduce either emissions per capita or the number of people, or both. Any increase in either will mean the necessity to reduce the other by a proportional amount. Should population stabilise, a 40% reduction in total emissions translates into 40% reduction in per capita emissions. Should population increase, however, by 30 per cent, per capita emissions must be cut by 54% to achieve total cuts of 40%. 40% will be difficult enough. Achieving 54% per capita cuts may not be politically feasible.

Natural increase accounts for 73 per cent of the ACT's population increase and migration 27 per cent. As the Federal Government has its hand on the levers for natural increase through provision of the baby bonus, and for overseas immigration, there is little the ACT Government can do other than influence the Gillard Labor Government directly through COAG or indirectly through internal Labor Party means. Nevertheless, it can and should abandon its Live in Canberra campaign to slow population growth.

While the terms of reference for this Inquiry cover the region, the ACT Government has only control over the ACT itself, and the aforementioned Bill only covers the ACT itself. There is the possibility that successful

reduction of emissions in the ACT may not be mirrored in the surrounding region. Thus it will be necessary for the ACT Government to coordinate with the 17 surrounding Councils on the combined issue of stabilising/reducing emissions and stabilising population numbers as soon as practicable.

Peak Oil

I attended the sixth annual conference of the Association for the Study of Peak Oil and Gas http://www.aspousa.org/worldoil2010/ in Washington DC on October 7-9, 2010, and also the fifth annual conference in Denver the previous year http://aspo-usa.com/2009denver/ . I wrote an article about the recent conference for On-Line opinion http://www.onlineopinion.com.au/view.asp?article=11171. The overwhelming conclusion from this 2010 conference is that we will face a liquid fuel crisis in the next two to five years. Conventional oil has peaked and is declining. While unconventional oil (deep water, Arctic, tar sands etc) is making up for this decline, by 2015 it is expected that there will be a 10 million barrels of oil a day (mbd) shortfall in supply. Prices will rise as oil supplies progressively decline. This will lead to an economic downturn globally from which we will not recover until alternatives are developed (communal transport, electric vehicles etc). It may lead to extreme economic disruption in places – even another Depression. Declining oil will have its greatest effect on agriculture because so much of today's agriculture is dependent on cheap fossil fuels – driving machinery, transporting food to market etc. This will necessitate much more localised agriculture. For Canberra, that will mean utilising the fertile river flats for food production rather than for growing turf, or for housing development. Canberra has been designed to put its suburbs on the lowlands and preserve the higher ground for natural vegetation. It may be necessary to reverse this to maximise potential farmland. The old joke about Tuggeranong valley being "a good sheep paddock ruined" may turn out to be painfully true.

To quote from my On Line opinion article: *"The coming oil crisis is largely a crisis in transportation since oil products power 95 per cent of land transport. Skrebowski felt that only when we take oil out of transport could we hope to see a solution. Otherwise, as Rubin notes: "We have to get off the road"."*

Canberra, of course, is not designed well for a liquid-fuel-constrained future. People will have to live closer to work. Public transport, based on either electricity from renewable energy or on natural gas, will have to be introduced as a matter of urgency if normal economic activities are to be continued. Plans for evermore suburbs on the outskirts will have to be abandoned. Urban infill, as the recent Dickson case suggests, has political constraints. Clearly, the more people there are, the bigger the problem. Slowing, and ultimately ending, population growth must be seen as a credible option. Indeed, we must move to a dynamic steady state economy http://steadystate.org/ and abandon the quest for endless growth in a finite world.

Biodiversity

This Inquiry is specifically about 'ecological' carrying capacity and thus must address the issue of human encroachment on the habitats of other species. The Canberra Spatial Plan recognises the importance of biodiversity and the need to protect and enhance biodiversity through the provision of nature reserves and maintaining connectivity between them:
http://apps.actpla.act.gov.au/spatialplan/4_goals/4E_environment/4E2_biodiversity.htm.

This is admirable but becomes increasingly difficult with more and more human beings destroying natural vegetation for suburbs (Forde, Crace etc) or indirectly through increased traffic inhibiting natural movement of animals such as kangaroos. If humans are to genuinely share the natural resources of the ACT

with other species, then the best thing that can be done is to stabilise population numbers. Urban infill has its political limitations, as is high-rise in the town centres. There will always be people wanting homes with backyards to raise their children so increasing density – while not to be dismissed – cannot address all problems of unending population growth.

Summary: The ACT and its region are likely to experience increased temperatures with much diminished water supply in coming decades. Although the dams are 88 per cent full now, we are likely to revert to a scenario of less than 50 per cent full that characterised the recent decade or more. The ACT therefore needs to take a precautionary approach to further population growth. Water restrictions will not be accepted calmly if people are expected to grow more of their own food locally thanks to rising oil prices in a post-Peak Oil world. We need to make room for other species, not just our own, and any further population growth will impact negatively on biodiversity.

Jenny Goldie