"TODAY TOWARDS SUSTAINABILITY"

A submission to the Sustainability Policy Unit,

on

'Focus on the Future: Opportunities for Sustainability in Western Australia'

from

SUSTAINABLE POPULATION AUSTRALIA INC. WA BRANCH

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Contact details: Dr PK Weaver,
VicePresident, SPA (WA)
89 Fairway,
NEDLANDS WA 6009
Tel. 08 9386 1890
Email: weaverp@cygnus.uwa.edu.au

SUMMARY:
Sustainable Population Australia makes the following recommendations for a Sustainability Strategy for Western Australia :-

1. that the following definition for sustainability be adopted by the Government of Western Australia.
   Sustainability:
   Quality lifestyle that meets the needs of today without compromising the needs of future generations or the ecological processes on which life depends.

2. that in developing a sustainability strategy for Western Australia obligations to global as well as local needs be recognized

3. Adherence to the sustainability principles of Daly should be adopted as the basis of the strategy (Daly, Herman E &Townsend, Kenneth N., "Valuing the Earth: Economics, Ecology , Ethics.", MIT Press 1993,). These are:-

   Renewable resources should not be harvested at rates exceeding regeneration rates.

   Waste emissions should not exceed the renewable assimilative capacity of the local environment.

   Non–renewable resources should be depleted at a rate equal to the rate of creation of renewable substitutes.

4. The government should develop an integrated labour market, population and education and training policy for WA and encourage the Australian government to do likewise.

5. WA should not accept energy intensive industries that will add significantly to its greenhouse gas output without first achieving an appropriate reduction to accommodate this addition.

6. Requirement for the Ministry of Planning and Local Government Authorities to only approve subdivisions whose orientation of housing lots is consistent with the construction of energy efficient housing.

7. Requirement for all building construction to meet basic energy conservation standards.

8. It should be noted that **south western Western Australia is one of the few biodiversity hotspots in developed nations**. As such, we have a **global responsibility for stewardship of this area**

PREAMBLE:

In making this submission and more importantly in the strategy itself, it is important that key terminology be clearly defined. The approaches to sustainability involve consideration of environmental, economic and social issues. Each field has its own concepts and jargon. Each uses common language terms with specific emphasis or meaning. Communication will be a key factor in applying a sustainability strategy. It is important that terminology be clearly defined and understood. As far as possible, specific jargon and terminology should be avoided and the language of the 'common man' adopted

A strategy:

"*is a long term plan identifying a desired objective, the resources available and developing the best possible approach to achieving the desired outcome."*

It is important to clarify this term at this stage, since many of the questions posed in the discussion document, particularly in the preparation of submissions notes, relate to management issues rather than a strategy.

Sustainability:

While the definition from UNCED for sustainable development is presented in the discussion document, the use of the term sustainability is becoming preferred nomenclature in order to separate the concept of sustainability from the subsidiary terms, growth and development.

The integration of environmental, social and economic goals, while a key concept of the Agenda 21 UNCED strategy for achieving sustainable development, is not and should not be used by the WA government as a definition of sustainability.

The definition "*development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends*" used by the National Strategy for Ecologically Sustainable Development (1992) again is tied to development and the inclusion of "improvement" is perhaps just a sad reflection of the conditions existing in Australia today.

A modified form (below) would however prove acceptable both for today and future use. We recommend:

Sustainability:

Quality lifestyle that meets the needs of today without compromising the needs of future generations or the ecological processes on which life depends.

And for community and educational use:-

Sustainability
is harvesting the apples without harm to the apple tree.

INTRODUCTION - WHY SUSTAINABILITY?

Sustainability is perhaps the most important concept to come to prominence as a result of the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in1992. At this conference and many since then, widely ranging evidence of severe degradation of the global environment was considered.

The recent UN Population Fund's report, "Footprints and Milestones: Population and Environmental Change, the State of World Population 2001" points out the following:

Human activity is altering the planet on an unprecedented scale. More people are using more resources with more intensity—and leaving a bigger "footprint" on the earth—than ever before.

Global poverty cannot be alleviated without reversing the environmental damage caused by both rising affluence and consumption and by growing populations. The report calls for increased attention and resources to balancing human and environmental needs.

World population, now 6.1 billion, has doubled since 1960 and is projected to grow by half, to 9.3 billion, by 2050. Some 2 billion people already lack food security, and water supplies and agricultural lands are under increasing pressure. Water use has risen six-fold over the past 70 years; by 2050, 4.2 billion people will be living in countries that cannot meet people's daily basic needs. Unclean water and poor sanitation kill over 12 million people each year; air pollution kills nearly 3 million."

Nearly all of the projected growth in world population will take place in today's developing countries. The 49 least-developed countries will nearly triple in size in 50 years, from 668 million to 1.86 billion people."

* "To accommodate the nearly 8 billion people expected on earth by 2025 and improve their diets, the world will have to double food production and improve distribution.

* The world's richest countries, with 20 per cent of global population, account for 86 per cent of private consumption; the poorest 20 per cent account for just 1.3 per cent. A child born today in an industrialized country will add more to consumption and pollution over his or her lifetime than 30 to 50 children born in developing countries.

* Nearly 60 per cent of people in developing countries lack basic sanitation, a third do not have access to clean water, one quarter lack adequate housing, 20

per cent do not have access to modern health services, and 20 per cent of children do not attend school through grade five.

* Support from international donors for reproductive health and population programmes is less than half the amount required to meet basic needs."

The document also considers the sophisticated interrelationships between environmental issues and population and the urgency of dealing with these.

The Amsterdam Declaration on Global Change (Amsterdam, July 2001, <http://www.sciconf.igbp.kva.se,>) highlights the concern of several international scientific committees on global climate change research, that there is a real risk that the Earth could be approaching an abrupt change such as has occurred at various times in geological history that would have severe consequences for Earth's environment and inhabitants. While the risk of such abrupt-change (within a decade) is still being assessed by the four global change research communities, even a low risk of such a rapid, human driven, climate change event makes reduced human impact a matter of extreme urgency.

As highlighted in recent reviews of global environment, there has been disappointingly slow progress. In contrast, in spite of temporary setbacks, the global economy has continued to grow but has conferred little of the social and environmental benefits envisaged at Rio and at subsequent subsidiary meetings. The gap between rich and poor has actually widened, both at the level of nations and within individual countries. The argument that healthy economic growth in itself will improve social and environmental conditions cannot be sustained.

All is not gloom; there has been progress on some fronts and as David Suzuki highlighted in his recently published book, some really exciting initiatives particularly the increasing commitment of a few multinational companies to improving social and environmental conditions. But it is clear from the slow progress and disappointing outcomes of the Rio conference that sustainability is not easily achieved and the principles and approaches to this end need to be critically examined and soundly based.

Integration of the three pillars:

One of the major difficulties in achieving sustainability is the conflict between the concepts and measures for the three areas of sustainability (economic, social and environmental), particularly in meshing economic principles and parameters with their social and environmental equivalents.

Largely the conflict arises from economic preoccupation with growth.
The dependence on Gross Domestic Product (GDP) as a measure may have some value in relation to national economies but it is a relatively poor indicator of individual wealth or in fact of social well being.

One of the results of reliance on this measure has been to promote growth, since the larger the population the higher the GDP ("One Nation – Two Ecologies" House of Representatives report into Australia's population carrying capacity, Chair Barry Jones December 1994, p109). This has given rise to the view that 'big' and 'more' represent progress when in fact today 11 of the world's 15 richest nations are smaller than Australia with near stable populations.

Most wealthy nations have low and / or stable populations

Australia continues to fall down the list of wealthiest nations, as measured by GDP per capita, and is now 19th in wealth per capita ranking. In the top 15 wealthiest nations, only four (US, Canada, France and Japan) have populations higher than Australia's. Three (Monaco, Liechtenstein and Iceland) have populations of less than half a million.

According to the United Nations' Population Fund (UNFPA) State of the World Report 2001, Australia's population is expected to grow significantly in the next 50 years, as will those of USA and Canada. The other nations in the top 15, however, will be relatively stable or actually decline.

All fertility rates are below replacement level (2.1). SPA makes no claim that stable population *causes* countries to become wealthy, merely notes the *correlation.*

The top 15 list was taken from CNN (http://www.cnn.com/WORLD/global.rankings/).

COUNTRY (ranked by GDP per capita)	population in 2001 (m)	population in 2050 (m) except where stated for 2025	fertility (2000-2005) - children per woman
Luxembourg	8.1	8.3 (2025)	1.8
United States	285.9	397.1	1.93
Monaco	0.03	0.035 (2025)	1.76
Switzerland	7.2	5.6	1.38
Singapore	4.1	4.6	1.45
Norway	4.5	4.9	1.70
Belgium	10.3	9.6	1.48
Denmark	5.3	5.1	1.65
Austria	8.1	6.5	1.24
Canada	31.0	40.4	1.58
Liechtenstein	0.03	Approx 0.04	1.5
Iceland	0.3	0.3 (2025)	2
France	59.5	61.8	1.8
Netherlands	15.9	15.8	1.5
Japan	127.3	109.2	1.33

According to UNFPA, Australia's population will grow from 19.3 in 2001 to 26.5 in 2050. Its average fertility (2000-2005) is 1.75.

It is interesting that “Connections”, the magazine for AMP customers, recently featured the flawed nature of GDP in a readable article titled “Made to measure”. Recognition of the undesirable features of past economic measures is now extending to the general public.

The weakness of GDP as a measure of wellbeing has been identified by Shane Oliver of AMP Global Investors as ‘its inability to estimate pollution, the household or volunteer economy, crime, income distribution, unemployment and overwork and foreign debt’, largely social and environmental factors.

A number of alternatives for an integrative approach encompassing all three components of sustainability have been suggested, including triple bottom line accounting, the Genuine Progress Indicator and the MAP (Measuring Australia’s Progress) indicator recently adopted by the Australian Bureau of Statistics.

It is interesting to note the first report of MAP shows economic and social improvement according to the 4 economic and 5 social indicators but only one of the six environmental indicators, air pollution, showed improvement. All five of the remaining environmental indicators, greenhouse gas emissions, surface water, land degradation, clearing and biodiversity loss showed serious deterioration. Thus while our income and wealth have been growing strongly, the environment has been getting worse not better. The ABS suggests that the evidence would point to income generating activities going hand in hand with environmental degradation.

This situation is not unique. It occurs in most developed nations undergoing economic growth. Achieving sustainability will require considerable re-evaluation of economic objectives and very innovative approaches.

Ethical investment by individuals and the associated sustainability assessment by companies could play a big part in changing attitudes in the business and commercial community.

Growth and Development:
It is important in striving for sustainability that we clearly distinguish the processes of growth and development.

“To grow means ‘to increase naturally in size by the addition of material through assimilation or accretion’. To develop means ‘to expand or realise the potentialities of; to bring gradually to a fuller, greater or better state.’ When something grows it gets bigger. When something develops it gets different.” (Daly, Herman E &Townsend, Kenneth N., “Valuing the Earth: Economics, Ecology , Ethics.”, MIT Press 1993).

Growth vs Development

"Improvement in human welfare can come about by pushing more matter-energy through the economy, or by squeezing more human want satisfaction out of each unit of matter-energy that passes through. These two processes are so different in their effect on the environment that we must stop conflating them. Better to refer to throughput increase as GROWTH and efficiency increase as DEVELOPMENT. Growth is destructive of natural capital and beyond some point will cost us more than it is worth - that is, sacrificed natural capital will be worth more than the extra man-made capital whose production necessitated the sacrifice. At this point, growth has become anti-economic, impoverishing rather than enriching.

Development or qualitative improvement is not at the expense of natural capital. There are clear economic limits to growth, but not to development. This is not to assert that there are no limits to development, only that they are not as clear as the limits to growth, and consequently there is room for a wide range of opinion on how far we can go in increasing human welfare without increasing resource throughput. How far can development substitute for growth? This is the relevant question, not how far can human-made capital substitute for natural capital, the answer to which is "hardly at all".

Three generally accepted, basic principles relating to resource use emerge from the considerations of these authors:

Renewable resources should not be harvested at rates exceeding regeneration rates.

Waste emissions should not exceed the renewable assimilative capacity of the local environment.

Non –renewable resources should be depleted at a rate equal to the rate of creation of renewable substitutes.

That the world has reached the point of severe destruction of its natural capital cannot be in dispute. The evidence of climate change, severe global fresh water deficits, land degradation and disappearing biodiversity, fisheries and forests are well documented and increasing in severity (D.Tilman et al. Science 292, pp281 – 284).

But for environmentalists and biologists, a better indicator of the limits of environmental capacity is that the portion of the world's total photosynthetic capacity now sequestered by mankind exceeds 40%. This is clear evidence of the limitation of life support systems. To economists such reports have had little meaning. In attempts to bridge this communication gap biologists have

estimated in dollar terms **the value of the natural ecosystems that maintain the quality of our water, air, land and seas.** The figure **of $33 trillion (US) exceeded the total global GDP** at that time (Senator Robert Hill, The Action Plan for Australian Birds, 2000, Foreword, Costanza et al. 1997. The value of the world's ecosystem services and natural capital. Nature 387: 253-60).

What is more clearly understood is the mounting numbers of people living in poverty with inadequate water supplies and sanitation, food supplies, health and education. The World Bank has reported that there are now 25 million environmental refugees. The world population today is divided between the high consumer, high living standard nations with near stable populations and the desperately poor in the third world countries whose populations are growing rapidly (UNFPA Report 2001). The world's richest nations with 20% of the world's population account for 86% of the world's consumption while the poorest 20% of the world's people account for only 1.3%.

In the 20th century, world population increased 4 fold from 1.6 billion to 6.1 billion and is expected to reach 8 billion in the next 23 years. Nearly all the projected population increase will occur in the developing nations. In contrast the populations of the developed nations will remain stable or may actually slightly decline.

Conditions in the poorer nations must be improved, yet to give all the world's people the lifestyle of Australians would require on various estimates between 3 and 7 Earths. Obviously the consumption of the developed nations and the population growth in the poor nations must both be reduced. Experience has shown that education of women and provision of health services is the most effective way of reducing population growth (UNFPA 2001). Yet developed nations including USA and Australia have reduced their aid to these programs.

To reduce the consumption levels in the developed nations is almost certainly a more difficult task. The common cry of those favouring continued population growth for Australia has been that all we need to do is reduce consumption. Yet two successive State of the Environment reports from Environment Australia indicate that in fact the reverse, increasing per capita consumption, is occurring (State of the Environment Australia 2001, CSIRO Publishing).

Australia is a very greedy nation. We equate very closely with the USA as the world's top consumers yet we have a high population growth rate (1.2%), higher than countries such as China, Korea, Japan, Brazil, Chile, Uraguay, Thailand, Sri Lanka, Tunisia, Botswana, South Africa, USA, Canada and all the European and former USSR nations (UNFPA 2001 Report). This population growth is maintained by high immigration of between 90,000 and 110,000 each year and a natiural increase (births – deaths) of around 125,000.this results in the addition of an extra million people every 4 and a bit years. This growth is projected to continue for the next 30 years (ABS Doc No, 3222.0)

Since we have such a high consumption per person, not just every birth but every migrant arriving in this country (except from the USA) represents an increased load on the global environment. Reduction of net overseas migration to around 50,000 a year would reduce this population growth to that of a near stable population. Contrary to popular belief, **Australia's population is very definitely NOT declining**. Our total fertility rate (1.7 children per woman) is below replacement rate (2.1) but because we have a young population with many below reproductive age and since life expectancy is still increasing, births exceed deaths by around 120,000 per year. With this natural increase in population and around 110,000 annual gain from immigration we added 229,500 to our population in the year to June 2001 (ABS 3101.0, December 2001). Our population, now over 19 million is expected to reach 24.1 million by 2050 at existing migration rates.

The Australian Academy of Sciences in 1994, stated that we should be stabilizing our population at the lowest level possible, at the lower end of what is politically acceptable, that is at about 23 million. Many scientists of note have also warned against further increasing population in Australia, usually on the grounds of increasing environmental damage.

Lobbying for increased population through higher immigration, comes from the real estate and construction industry who benefit from higher population growth. There is no doubt that Australia benefited from immigration in the post war era by the provision of labour and in the stimulation of demand for a wide range of Australian products including whitegoods and clothing. Today we have high unemployment (600,000 nationally), and whitegoods, clothing and many house fittings are imported. **High immigration now adds to overseas debt and diverts capital from development** to provision of infrastructure and services such as water, roads, schools and hospitals for our growing population (Ken Robertson, Economics & Commerce, University of WA, personal communication).

With the present emphasis on skills as a basis for selecting immigrants and the areas of desired skills, nurses, doctors, IT workers and engineers for example, **we are effectively draining the most needed professionals from the developing nations.** Australia has never had an integrated labour market, training and population program such as Singapore adopted. The Western Australian government should press for this as part of our sustainability program to avoid 'stealing' skills from the developing nations. The 600,000 unemployed in Australia would also benefit from this approach.

It was **refreshing to read Dr Gallop's recent statement committing this state to Ecologically Sustainable Population**. Although immigration is a federal matter, the States and their constituents have the opportunity to participate in the consultation process that precedes the setting of immigration targets and components each year. In the past, Premier Carr from NSW has been the only Premier arguing strongly for immigration restraint.

In the development of a Sustainability Strategy for WA, it is important that we recognize our global obligations and make certain that these are met, not just in a manner that pleases the Government and people of WA but so as to contribute in measurable terms to real progress for global sustainability.

It is also important that responsibility is not abrogated on the grounds that issues are Federal responsibilities not under the direct control of state governments.

The nature of sustainability and its global aspects needs to be clearly identified. The most significant aspects are listed below:-

* *" the two most important dimensions of the challenge of sustainability —.. **per capita resource consumption** and **population growth**".(The State of the World Population 2001: Footprints and Milestones, UNFPA, Chapter 3, p35)*

* *"The stewardship of the planet and the well being of its people remains a collective responsibility." (The State of the World Population 2001: Footprints and Milestones, UNFPA, Chapter 1.1)*

* *"Local decisions have a global impact." (The State of the World Population 2001: Footprints and Milestones, UNFPA, Chapter 1.2)*

* *"The ecological "footprint" of the more affluent is far deeper than that of the poor, and in many cases exceeds the regenerative capacity of the earth." (The State of the World Population 2001: Footprints and Milestones, UNFPA, Chapter 1.6)*

* *"Slower population growth in developing countries will contribute measurably towards relieving environmental stress." (The State of the World Population 2001: Footprints and Milestones, UNFPA, Chapter 1.2)*

* *A child born today in an industrial country will add more to consumption and pollution in his or her lifetime than 30 to 50 children born in developing countries. The State of the World Population 2001: Footprints and Milestones, UNFPA, Chapter*

WESTERN AUSTRALIA:

Professor Lowe, lead author of the 1996 State of the Environment report, outlined the characteristics of a Sustainable Australia at the recent Australian Academy of Sciences, "Transition to Sustainability" symposium.

"*A sustainable Australian society would have a stable population and would produce no waste by recycling all its outputs. Its carbon emissions would be about 10 per cent of current levels, and its cities would be designed to provide accessibility to services in ways that were not dependent on the mobility currently offered by cars and road systems.. Better urban planning would provide accessibility without requiring mobility,*" Professor Lowe said.

In devising strategies, it is all too easy to focus on the desired endpoint and to neglect the other two essential components of the process, the starting point and the resources (assets and liabilities) available.

WA now:
There is evidence that **population of Western Australia**, at its present level and present lifestyle, **is not currently sustainable**. Repair costs for the environmental degradation outlined in the Environment Western Australia 1998 report are mounting. The marginal costs for infrastructure services are increasing and natural resources such as water supplies and fisheries are at or close to the limit for sustainable use. (Australia imported 50% of its fish consumption in 2000 according to SOE 2001, This has since increased to about 70% (Fisheries Dept personal communication). Western Australia has reached the situation of **further growth actually increasing costs faster than earnings,** as population growth is diverting capital from development to provision of infrastructure needed to accommodate the increased numbers.

The **current population of over 1.9 million is projected to reach 2.6 million by 2021** with 28% of this growth being natural increase (births – deaths), 15% from interstate migration and 57% from direct overseas migration ("Western Australia Tomorrow", Population Report No.4, October 2000, Ministry of Planning, WA). With the current immigration policy the bulk of overseas immigrants come under the skills based category of migrants (Department of Immigration and Multicultural Affairs, 2002 – 2003 Migration and Humanitarian Programs – a discussion paper, p13 – 19). When Australia has about 600,000 unemployed, the need to import skilled workers can only be the result of deficiencies in our labour force planning and education and training programs. The need for better planning and integration of training with proposed development is obvious.

While the West Australian government does not itself control immigration, it is not without influence, particularly at the present time on the eve of the national meeting in Sydney on the issue of population growth and immigration.

The recent commitment from the Premier, Dr Geoff Gallop, to an ecologically sustainable population for WA should be supported by the government representatives attending the annual consultation meetings with the federal Minister for Immigration, to determine Australia's immigration settings for 2003/2004.

In the meantime, devising **a Sustainability Strategy is a matter of urgency** to reduce the mounting environmental costs (water supply, salinity, toxic sites etc), particularly if the government is to proceed with the projects proposed for Burrup Peninsular.

Western Australia, already one of the highest per capita greenhouse polluters, will increase its greenhouse gas emissions by at least 17.42 million tonnes a year, if the industries now proposed at Burrup and elsewhere in the State go ahead. These will increase greenhouse emissions from WA by around 30% (Conservation Council of Western Australia, Press Release, <www.conservationwa.asn.au>).

WA already consumes considerably more energy per capita than the more populous states, exceeded only by the Northern Territory. (NSW - 207.8 GigaJoules/capita; WA - 362.0 GJ/capita 1997 –1998).

WA is increasing energy related emissions at a greater rate than all other States except Queensland. (1990 to1995 increase excluding land clearing: WA - 6.8 Megatonnes CO_2 equivalent emissions, 0.2 in NSW and ACT, 4.3 in Victoria and 0.9 in SA). Stationary energy emissions made up the majority of the increase accounting for 5.9 Mt, primarily due to an increase in emissions from electricity generation.

To stabilize climate change, scientists estimate that we must reduce our greenhouse gas emissions by 60-90%, Until this challenge is met, WA should not accept energy intensive industries that will add significantly to its greenhouse gas output without first achieving an appropriate reduction to accommodate this addition.

The major greenhouse polluting industries proposed for WA include:

On the Burrup Peninsula**:**
Methanex - claimed to be the world's biggest methanol plant, a subsidiary of Methanex Corporation of Canada.

- **Greenhouse impact 2.5 Mt CO_2 pa**

Japanese consortium DiMethylEther (DME) plant (Mitsubishi Gas Chemical Company. Inc., JGC Corporation, ITOCHU Corporation and Mitsubishi Heavy Industries Ltd.). producing 4000-7000 tonnes of DME per day, to be exported to Japan and other Asian countries.

- **Greenhouse impact 2.5 Mt CO_2 pa (CCWA estimate)**

Burrup Fertilisers Pty Ltd's Ammonia Plant, owned by Indian fertiliser, petrochemicals and agri-products company, the Oswal Group. To be the world's biggest ammonia plant.

- **Greenhouse impact: 1.44 MtCO_2 pa**

Extensions to the existing Woodside facility.

- **Greenhouse impact: (Not known)**

Syntroleum of USA: processing natural gas into products such as lubricants, industrial fluids and paraffins, as well as synthetic transportation fuels.

- **Greenhouse impact: : 1.6 Mt CO_2 pa**

Plenty River Ammonia / Urea project for development of a 'world scale' ammonia/urea project using feedstock gas supplied by the North West Shelf Gas participants.

- **Greenhouse impact 2.0 Mt CO_2 pa (CCWA estimate).**

Other major developments under consideration in WA
Rio Tinto's Hismelt.

- **Greenhouse impact - 3.00 Mt of CO_2 pa**

Boddington Gold Mines.

- **Greenhouse impact - 3.73 Mt of CO_2 pa**

Hope Downs iron mine

- **Greenhouse impact - 0.65 Mt of CO_2 pa**

Australia is committed to meeting a greenhouse gas target level of not more than 8% above our 1990 level by 2010 and is already at 17% above 1990 levels. It is imperative that alternative clean energy supplies be instituted urgently if these projects are to proceed.

Another issue with these projects concerns the population growth they will generate. If they follow the pattern of the North West Shelf gas development, WA could face increased overseas immigration stimulated by the companies involved demanding importation of overseas skills. And thus produce **further Greenhouse gas as a result of the increased population.** In the past, development projects in WA have resulted in increased inter-state migration (Professor Reg. Appleyard, personal communication). If labour force planning and training is instituted now, the bulk of the labour force can be drawn from within WA or from other states thus avoiding an additional population-driven increase in greenhouse gas production by Australia.

The lessons from the development of the North West Gas Shelf should be well known by now from the two Parliamentary reports outlining how little the gas projects benefited Australian workers and Australian industry. But there is little indication that these proposed projects which largely constitute the third, industrialisation, phase of the gas development, are being handled any differently. A labour force plan and appropriate training should be initiated now if these projects are to go ahead.

Recommendation 3.1 of the 'Sea of Indifference', 1998 report says:-

"*The Committee recommends that the Minister for Primary Industries and Energy direct his Department to require those seeking exploration permits or licences if their project proceeds to production to commit themselves to:*

* *Maximising opportunities for local industry involvement and providing details of how this will be achieved.*

* *Providing data which will allow analysis of value added in Australia.*

* *Maximising the transfer of skill and technology and design in Australia;*

* *Undertaking research, development and design in Australia to the maximum extent possible".*

Also Recommendation 3.2
"The Committee recommends that the Federal Government use information gathered as part of permit processing to ensure Australian industry is aware of forthcoming major oil and gas project requirements."

Assets and opportunities for WA;

1, Highly diverse biota as yet largely unexplored for commercial utilisation. This is an opportunity for expansion of the limited bioexploration and oil extraction industry that exists today. Biodiversity is a potential resource for horticulture, plant breeding, new foods, pharmaceuticals, oils and fragrances etc Also tourism.

Aboriginal culture has already utilised many plant and animal species so involvement of indigenous people could prove useful to both the companies involved and to local communities.

Australia and Western Australia in particular, is an ancient, weathered land that largely escaped the last great ice age glaciation. As a result, its soils are among the poorest in the world. It has the lowest and most, unreliable rainfall of any continent., The wildlife is highly specialized with most major plant families having special adaptations such as specific mycorrhizal systems and extensive and specialized root systems (eg. Proteoid roots in Proteaceae and endomycorrhiza in Epacridaceae). The animals have unusually small brains to reduce energy consumption by this most energy demanding organ (Tim Flannery, Inaugral meeting WA branch SPA).

The wildlife is largely endemic and has great biological diversity, Many WA species do not occur elsewhere in Australia, thus giving this state **a truly unique resource** This should be recognized as valuable in both in its natural state for tourism and as a potential source of organically based products ranging from new Australian foods, gums, adhesives, oils and fragrances to drugs and pharmaceuticals. The potential for the genetic diversity within this biota to be used in breeding improvement for commercially grown species (eg, the new lime variety developed from a Queensland rainforest species) should also be recognized.

A large proportion of this diversity is not even adequately documented, let alone examined for potential uses.

It should be noted that **south western Western Australia is one of the few biodiversity hotspots in developed nations**. As such, we have a **global responsibility for stewardship of this area** and also for the high biodiversity marine reefs in the same region. Western Australia should participate actively in international measures to ensure adequate returns to the nations (largely third world countries) that are the source of plants and animals used as a source species for development of commercial products,

Export of native plants and seed for horticultural purposes should be examined closely to ensure that this state gets appropriate benefits. More new horticultural varieties of the West Australian floral emblem, the Kangaroo Paw have been

produced in California and Israel than in this state. The profits from sale of these plants and their flowers is considerable. Eucalypts are used for timber and firewood and for land repair around the world and could be more profitable for the state.

The recent national Fungimap conference in Denmark, demonstrated clearly the appalling lack of knowledge regarding Australian fungi and their distribution. These species have potential use as foods, eg Australia truffles and edible mushroom species, Fungal cultures are used in commercial production of organic acids and other chemicals. The potential of Australian species has not been examined as very few have ever been cultured. In fact the conference was told that only two qualified mycologists carry out fieldwork in Western Australia,

We should give top priority to protecting this biodiversity, including support for better Australian Quarantine and Inspection Services.

Control of diseases, weeds and pest species that threaten native organisms should be given much higher priority, with non agricultural weeds afforded the same priority as agricultural weeds.

Research into our biota and into development of commercial products should be strongly supported by the Government. New, profitable and sustainable industries could result. With careful stewardship, this **biodiversity may be the most valuable resource we can leave to future generations**.

The value of natural ecosystem services also deserves a mention. Governments have in the past ignored the value of ecosystem services. It is only when an ecosystem breaks down, for example when overclearing results in huge costs in loss of agricultural land and in damage to roads and buildings through salinization, that the ecosystem value begins to be appreciated, Almost everyone in the community is guilty of this oversight.

2 Largely disease free land

The isolation of the continent prior to European settlement has resulted in the absence of many disease species that could affect introduced crops, agricultural animals and our native species. This low incidence of diseases allows Australia to produce export breeding stock and biologically based products that are acceptable as ‘disease free’ in purchasing countries. Queen Bee exports are one example that illustrates the scope of this advantage. The Government should adopt a much more active and aggressive stance in opposing the forces of globalization, such as the World Trade Organization, that seek to destroy this disease free environment in the name of free trade. It should exert the utmost pressure on the Federal Government to do likewise.

3 High potential for generation of "green" energy from wind, tidal, solar and wave power sources.

Australia as a whole has taken little advantage of its potential for clean energy production. Even when new technology is developed in this country, it often ends up being manufactured overseas. An example is the photovoltaic cell developed at the University of NSW but now manufactured in Spain.

The Danish Government's support for the development of wind energy generation dates back to 1990. It now is the country's fourth biggest export earner and directly employs 24,000 people. The German government supported all clean energy industry in the early 1990s and similarly has in the process developed a profitable export industry.

There may still be opportunities for WA in this market especially as the state has the opportunity to use a diverse range of clean energy sources itself.

4 Centres of excellence in health, environmental and natural resource management and education.

,According to John Schubert, the chairman of G2 Therapies, a recently established medical biotechnology company intending to develop and market the medical research findings of the Garvan Medical Institute, Australia has a competitive advantage in **medical biotechnology** but, so far, has failed to capitalise on this by commercialising its discoveries ('Institute spawns biotech start-up',Tony Boyd, Australian Financial Review, Apr 8 2002).

"Australia is probably one of the most cost-effective places in the world capable of doing this research," he said.

"Compared with Europe or the US the cost advantage is not by a factor of one or two, but by a factor of four or five or more. As well, the business and legal framework in Australia is much more conducive to certainty with respect to the intellectual capital."

In Australia, clinical trials of a drug are approved by the ethics committees of institutions, whereas in the US, the Food and Drug Administration approves trials.

The Government should do everything possible to encourage development of research initiatives to marketable products especially where the products are small. Mineral and agricultural exports are bulky and heavy, which will be increasingly disadvantageous as world oil supplies become limited and thus more costly. For the same reason secondary processing of mining and agricultural products should be encouraged.

Salinity and limited fresh water supplies are two problems for the state at this time. Serious government encouragement and support of research in this area could lead to an economic edge in providing marketable expertise in remediating two world wide environmental problems.

5 Natural gas reserves

Although the use of fossil fuels will become less attractive as restrictions on greenhouse gas production tighten, it should not be forgotten that petrochemicals are the feedstock for synthesising many other products such as plastics and drugs. Western Australia should not be too eager to dispose of its reserves as a need for these materials will continue and development of alternative feedstock may not be rapid.

6 Wide range of climatic conditions for Agriculture and Horticulture

Australian agriculture is highly efficient but very energy demanding. Most farming is broad scale and dependent on heavy machinery. With the extremely poor soils in WA, the use of fertilizer is high. Fertilizers and many herbicides and pesticides have a high energy requirement in their manufacture. In addition the export of our current agricultural products is highly energy demanding.

7 WA has almost every climatic zone possible and within this range should be able to grow a very wide range of plants within the state. Yet many easily grown products are imported at least at some season of the year, eg garlic. Agriculture WA should encourage the growth of alternative crops, particularly those imported for local consumption or which have a high export price and low bulk. Organically grown vegetables, fruits and derived products such as wines, at present command high prices internationally and have the advantage of lower energy inputs. Australian foods derived from native plants is another market worth developing.

Many of the pastoral leases in WA are not productive and as the leases are coming up for renewal in the near future should not be leased again unless clear sustainability of production can be established. Alternative sustainable uses of this land are likely in the future but not if the land is already committed.

8 Time zone similar or close to Asia's

This favours electronically based industries such as computer programming. However with the heavy focus India has placed on the IT industry it is unlikely that there will be many opportunities in the Asian region unless a higher quality or some other advantage can be established.

There may however be opportunities for expertise based projects such as on line education or even on line medical diagnosis.

9 Multicultural population with links to neighbouring regions
This can be advantageous in many commercial situations but also could advantage on line education or similar projects.

All of the above provide a situation in which sustainable industries could be established. In contrast the rich mineral deposits on which WA is currently so dependent are likely to lose this importance since mining and extraction is so dependent on fossil fuels. Alternative approaches such as bacterial mining should be researched further at the Universities, CSIRO and the School of Mines.

Liabilities:
1 The major liability facing WA in striving for sustainability is its existing **dependence on fossil fuels** in the three major industries, mining and extraction, tourism and agriculture. Development of alternative energy sources is a matter of urgency to meet greenhouse requirements.

2 Existing **environmental degradation**, eg salinity, depleted rivers and surface water, diminishing ground water supplies, degrading estuaries, rivers and land will require costly repair.

3 **Climate change** conditions will severely reduce rainfall (up to 40% in some south west areas according to CSIRO) and increase extremes of weather. This will add to existing water supply problems and to the cost of water.

4 Naturally **poor and fragile soils** in WA are subject to degradation and probably will in future not be able to be as intensivley farmed.

5 Low and erratic rainfall over much of the state. The recent NASA satellite composite world map illustrate that **Australia is a desert continent** and WA is a very dry part. (The NASA world map derived from satellite pictures gives clear evidence of this. – Sunday Times, March 3rd 2002, p13)

.6 Major aspects of **commercial operations** contribute to profitability of companies but **transfer cost to the community** and detract from achieving sustainability. They include:-

Packaging.
The present situation favours companies using the cheapest or most convenient packaging system without any regard to disposal costs. Return of packaging to the supplier is not a practical solution. The disposal cost should be paid by the supplier. This would encourage the use of recyclable packaging. Materials that are difficult to recycle and the combining of materials with incompatible recycling paths would be penalized under this system.

It should be noted that South Australia has for some time enforced a system of deposits on food and beverage containers to encourage recycling. Also that over 30 years ago, ACI, then the major manufacturer of glass beverage containers designed a number of standard containers with the aim of greater reuse being achieved if different companies all used the same containers. This initiative from the company was to encourage reuse and so reduce the environmental impact of beverage containers. The scheme failed miserably as marketing executives in the client companies claimed that company specific container design was a major marketing advantage.

Measures to promote packaging that meets community rather than producer needs should be implemented.

Disposal linked to production

The ultimate incentive to ensure maximum sustainability in our consumption is to ensure that those making the commercial decisions on the production and marketing of products consider disposal at the product design stage.

The best way to do this is to make the producer responsible for disposal or at least the cost of disposal. This approach is appropriate in a world working under the principles of rational economic theory. It is interesting to note that the European Union recently passed a proposal that manufacturers of white goods should be responsible for the disposal of their products.

It is even more important for products such as computers where components pose a risk to future generations if simply dumped and also to those dismantling them, today sadly often those in third world countries.

An alternative approach to encourage reuse and recycling of products such as white goods and computers is that of substituting lease for sale of the product. Products where improvement and advancing design is rapid would be more likely to be constructed on a modular basis if the manufacturer had outdated equipment returned. In computers for example, the case, screen and some other components could be retained and new components such as chips installed where needed.
Thus rather than discarding a whole system only a small part would be discarded. Both consumption and disposal would be reduced.

There is another point worth noting here. Often the energy efficiency of such products and also motor vehicles is only considered in terms of energy consumption during use. For some products the energy consumption in manufacture can be close to that of a lifetime's use.
Early model solar collectors actually used more energy in their production than they harvested in a lifetime of use.

Inbuilt obsolescence
for cars, white goods etc. Expected lifespan is programmed into many manufactured items today. Thus it is essential information for the consumer. Disincentives such as higher sales tax should be incurred by manufacturers or suppliers of short lifespan goods.to reduce per capita consumption.

Advertising
Generates excessive consumption and fails to provide information that encourages sustainable practices Information such as expected life span, toxicity of components etc. that allow informed choice and relate to community borne costs such as disposal is frequently not provided. Standards for advertising should be tightened and the advertising industry encouraged to participate in the sustainability campaign.

Carrot versus Stick approach
Current regulatory approaches in many areas encompass the big stick approach. As a result a lot of time and energy is spent in finding ways to avoid such penalties. The carrot approach is preferable in that ingenuity and effort is then directed to compliance. For instance, clearing of bushland in WA is currently subject to regulation and penalty. But there is no benefit offered to those who maintain bushland. If for instance land tax and council rates were halved for those with high quality native vegetation there would be much less incentive to over estimate the areas needing to be cleared and much more incentive to care for residual bush areas since these would have a perceived value. And according to the principles of rational economics bushland owners are providing a service to the community as a whole and could expect to be rewarded in some way.

Many of these approaches lie outside the direct control of the West Australian Government. Most are unlikely to be implemented overnight. However, it is important that our government **actively promote these concepts in its partnerships with industry.** Implementation of new approaches is likely to be more rapid and successful if driven by the sector ot the community that is most involved. To this end it is important that industry and commerce be informed as soon as possible if the zero waste and other targets for sustainability are to be met.

Suggested innovations under the sustainability program.

* Requirement for government departments to examine **small scale alternatives** to current systems of power supply etc with a view to enhancing sustainability.

Sewage disposal and power supply are areas that currently have city or state wide supply networks. Alternatives exist particularly in regard to sewage that

offer sustainability advantages, but which experience delays and difficulty in gaining official approval. A requirement to give more emphasis on sustainability rating together with a requirement for departments to seek out such small scale systems could speed up adoption of these alternative systems.

* **Requirement for the Ministry of Planning and Local Government Authorities to only approve subdivisions whose orientation of housing lots is consistent with the construction of energy efficient housing.** The orientation of the housing lot is often the most critical determinant of energy efficiency of the building constructed.

* **Requirement for all building construction to meet basic energy conservation standards.** This is required in at least one other state and ensures that new buildings meet sustainability standards of energy efficiency. An amazing number of homes, office buildings and factories are constructed in this state that are almost unusable without an electricity supply to provide lighting or air -conditioning at particular seasons.

There are many more initiatives that could be suggested, particularly at the community level. But if sustainability is to be successful then it must be embraced from the top. The location of the Office of Sustainability in the Department of Premier and Cabinet is to be commended. It is to be hoped that this reflects a continuing acceptance of responsibility for the future. The model of the major international companies that embraced the target of zero industrial accidents is clear. Great progress was only made when the Chairman of the Board accepted responsibility and safety became the first item on the Board's agenda. So be it with Sustainability.

Attachment: Population Policy, Sustainable Population Australia Inc.

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Attachments:

SUSTAINABLE POPULATION AUSTRALIA Inc

POPULATION POLICY

Background

*** Australia's capacity to sustain a large population is limited because the continent is largely arid with old, nutrient-poor soils and a variable climate. Only six per cent of the continent is arable[1].**
Dryland salinity threatens to destroy up to 17 million hectares of agricultural land by 20502.[2a]

*** Our rivers show severe signs of degradation through extraction, regulation by dams and other forms of habitat destruction, and increasing salinity is likely to make the water in many of them undrinkable and unfit for irrigation within a matter of decades, further reducing the possibility of large settlements, particularly inland.[3,3a]**

*** Global climate change will lead to a deterioration of natural ecosystems through increased temperatures, extreme weather events and less rainfall in the southern part of the continent, thus reducing its capacity to sustain a large population even further.[4]**

*** Australia's population growth rate of 1.2 per cent is one of the highest of developed (OECD) countries, with annual natural increase (120,000 to June 2001) being slightly greater than net overseas migration (immigration minus emigration - 109,700 to June 2001).[5]**

*** According to the Australian Bureau of Statistics, Australia will have a population in 2051 of between 24.1 (fertility 1.6 births per woman and net overseas migration over 70,000 per year) and 28.2 million (fertility 1.75 and net overseas migration 110,000).[6]**

*** Australia's net overseas migration (immigration minus emigration) has averaged around 80,000 over the past ten years (nearly 90,000 over the past 50 years) but it has fluctuated significantly from year to year.[7]**

*** For Australia to achieve a population of 50 million by 2050, as some business leaders suggest is desirable, annual immigration would have to exceed 450,000, a level which would be totally disruptive and unaffordable since most migrants would be unskilled or without English**

and in need of training before being able to contribute to the Australian economy.[7]

*** Australia, one of the top 12 biodiverse countries in the world and the only one in the OECD, has signed an international agreement for the protection of its biodiversity.**

*** Australia has a very bad record with respect to extinction of species, particularly mammals.[7]**

*** Clearance of native vegetation for human settlement and agriculture is the single most significant threat to terrestrial biodiversity.[8]**

*** Australia is currently a net exporter of food but, unless land degradation is checked, could become a net importer within a generation.[9]**

*** Australians have one of the highest consumption rates and their greenhouse gas emissions per capita are the highest in the world.[10]**

*** Greenhouse gas emissions are directly proportional to population growth, so as population grows, it is increasingly difficult to meet international targets with respect to climate change, whether in accordance with the Kyoto Protocol or its alternatives.[11]**

*** Global warming may cause the inundation of many neighbouring Pacific atolls such as Tuvalu, leading to the prospect of many more environmental refugees seeking refuge in Australia.[12]**

*** As immigrants come to Australia from less industrialised countries their consumption increases as they adapt to the Australian life-style.[11]**

*** Most environmental indicators (biodiversity, water quality, soil etc) are declining in Australia, meaning the current population is not living sustainably at the current standard of living.[13]**

*** Global population was three billion in 1960, six billion in 1999 and is expected to reach nine billion or more in the next 50 years with the extra growth almost all in the developing world.[14]**

*** Looming water and oil shortages may seriously affect the ability of some countries to feed themselves and there may be insufficient**

food on the world market for them to buy food as global population continues to grow.[15, 16]

*** Up to a billion hectares of natural ecosystems may need to be cleared to grow food for the three extra billion people, depriving the world of the ecosystem services they provide (absorption of carbon dioxide, purifying water etc) and hastening the extinction rate of other species.[17]**

*** Australia has an ageing population, though compared with most other developed nations, it has a comparatively young population.**

*** Ageing is caused by the transition from an expanding to a stable population and also from increased life expectancy as health care improves.**

Immigration will not alleviate ageing, except at very high and socially unacceptable levels.[18]

*** Several reputable studies have shown that the prospect of an ageing population is not a major problem for Australia and potential labour shortages can be off-set by keeping people in the workforce longer.[19,19a,19b,19c]**

*** Australia's current fertility rate of 1.7 is high enough not to lead to rapid ageing[20] but low enough to lead to stabilisation of the population, were net overseas migration to fall below 70,000 per annum (alternatively, if fertility were 1.65 and net migration of 75,000).[20a]**

*** Australia's official migration program is distorted by the large number of New Zealanders coming to Australia freely under the Trans-Tasman agreement (net gain of 30,000 in 1999-2000).[21]**

*** An increase in GDP generally results from an increase in population but does not necessarily translate into better GDP per capita, nor is it equally distributed.[22]**

*** In 2001, eleven of the 15 wealthiest nations, based on GDP per capita, had populations lower than Australia's.[23]**

*** Providing infrastructure and housing for an ever-growing population diverts money from investment in education, research and**

development, and in hi-tech industries that lead to real development rather than simply 'growth'.[24]

*** When the population of a country exceeds its natural resource base, that is, when it becomes unsustainable, the cost of providing infrastructure and basic services such as water supplies increases.[25]**

*** Poorer members of society (often new migrants themselves) bear the brunt of high immigration through the downward pressure on wages and through increased costs of housing and services.[26]**

*** Australia depends heavily on skilled migrants[27], often from poorer countries that cannot afford to lose them, because its educational and training institutions do not provide enough of the skills required for proper functioning of its economy.**

*** Australia falls far short of the UN-recommended 0.7 per cent of GDP for overseas development assistance yet well directed aid could alleviate many of the push factors that drive people from their own countries.[28]**

Principles

*** The size of any population must be kept within the limits of its natural resource base.**

*** For any given level of consumption, the more people there are, the greater the environmental impact.**

*** Social and economic sustainability is dependent on the protection of ecological processes and systems and the preservation of biological diversity.**

*** Australia has a responsibility to help people in impoverished developing nations.**

*** Australia has only a limited capacity to alleviate the social, economic or political problems of more populous countries through immigration, but can and should do more to help others through increased and better directed foreign aid.**

*** The benefit per dollar of foreign aid far exceeds the benefit from money spent in resettling people within Australia.**

*** The Federal Government has prime responsibility for determining who settles in Australia and not the would-be immigrants themselves.**

*** As a signatory to the 1951 Refugee Convention, Australia has an obligation to provide temporary refuge to those fleeing a genuine fear of persecution, but does not have an obligation to provide permanent residency for them.**

*** In the interests of intergenerational and intragenerational equity, Australians need to reduce their consumption rates and improve energy efficiency dramatically.**

Policy objectives:

*** To initially stabilise human population numbers, both nationally and internationally, as soon as possible.**

*** To determine what is an ecologically sustainable population at an acceptable level of material consumption, both nationally and internationally, and to seek to achieve that in a humane, non-coercive manner as soon as possible.**

Recommendations:

That the Federal Government:

*** includes a Minister for Population in Federal Cabinet, rather than a Minister for Immigration, recognising that immigration is but a sub-set of the broader issue of population.**

*** develops and implements an integrated population policy that encompasses immigrant intake, natural increase, aspirations of Aboriginal and Torres Strait Islanders, tourism, foreign aid, internal migration, and education.**

*** ratifies the 1994 UN International Conference on Population and Development (ICPD) Program of Action.**

*** adopts an integrated population, training and labour market strategy.**

*** establishes and funds a Bureau of Population Research that will address all environmental, social and economic aspects of population policy.**

*** maintains non-discriminatory immigration to Australia but at significantly lower levels than at present.**

*** gives higher priority to the Humanitarian Program within this overall reduced migration program.**

*** makes provision for the intake of some environmental refugees within the migration program, particularly those from the region and those affected by global climate change.**

*** ensures that Australia's educational and training institutions are adequately funded such that they provide all the skills needed for the functioning of the economy and for the welfare of its citizens.**

*** adopts social policies (eg maternity allowances) that allow couples to provide adequately for their children but at the same time discourages them from having more than two children.**

*** adopts economic and housing policies, such as encouraging more public housing, that discourage land speculators from reaping excessive profits from population growth.**

*** increases Australia's overseas development assistance (ODA) to the UN-recommended 0.7 per cent of GDP or more.**

*** ensures that the family planning component within ODA is at least 4 per cent, and that greater priority is given to other measures that reduce the birth rate, particularly primary health care and education of women.**

***ensures that Australia's treatment of asylum seekers is as humane as possible.**

*** retains measures that will deter others from trying to enter the country illegally.**

*** adopts a precautionary approach to tourism, recognising that temporary residents and visitors also place a burden on resources while travelling to and within Australia.**

*** adopts a consumption strategy that will encourage lower levels of resource use while retaining reasonable quality of life.**

*** provides incentives for energy efficiency to reduce Australia's total greenhouse gas emissions and ecological footprint.**

*** ensures that sex education programs in Australia are adequately funded and that a wide variety of contraceptive measures are available and affordable to all who need them.**

*** counts New Zealanders in the overall Migration Program, even if it means abandonment of the Trans Tasman Agreement.**

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Contact:
SUSTAINABLE POPULATION AUSTRALIA inc
PO Box 297, CIVIC SQUARE ACT 2608
Ph: 02 6235 5488
Fax: 02 6235 5499
email: info@population.org.au <mailto:natdir@population.org.au>
web-site: www.population.org.au <http://www.population.org.au>

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Tokenism

PARTICIPATION GENERAL PUBLIC

The isolation of the continent prior to European settlement has resulted in the absence of many disease species affecting both introduced crops and agricultural animals and our native species. This fact allows Australia to produce export breeding stock and biologically based products that are acceptable as 'disease free' in purchasing countries. The Government should adopt a much more active and aggressive stance in opposing the forces of globalization such as the World Trade Organization that seek to destroy this disease free environment in the name of free trade. It should exert the utmost pressure on the Federal Government to do likewise.

Biodiversity Hotspots National Geographic, January 2 p86 -89

About 1.5 million plants, animals and microorganisms have been identified by biologists but the total number on earth is believed to be much larger – between 3 million and 100 million

Biodiversity is not evenly distributed across the globe. A large part of it is concentrated in a relatively small number o f coral reefs, forests, savannas and other habitats scattered around different continents. The 25 richest of these hotspots occupy 1.4% of the planets surface yet combined contain 44% of the plant species and 35% of the vertebrate species.