

TSSF Website Discussion Paper.
Environment
Biodiversity: Caring for Creation and the Sixth Extinction
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Franciscans as part of their tradition respect the natural world, as Francis did, and seek to foster and understand the processes of life of God's creation. Humanity must now recognise that although we have developed a moral teaching regarding humanity such as homicide, suicide and genocide we have not yet developed a moral teaching affecting biocide, that is the killing of the life systems, or geocide, the killing of the Earth herself. A recent study at Yale University found that the more extensively people participate in religious activities the less likely they are to be concerned with the natural world. Yet currently it is estimated that currently human activity is extinguishing ten thousand species annually. We have to ask ourselves whether our concern for human rights should be expanded to or balanced with rights for the whole of creation or even the Earth herself. We regard democracy as a valuable process of government, yet ignore the need for a biocracy, sensitive to the needs of the wider earth community. The good health of humanity depends on the good health of the biosphere which depends on the good health of the planet. The three cannot be separated. Yet much of the indifference to God's creation would seem to stem from Christianity. Is humanity to dominate, be stewards, co-creators be priests or to share, as Christ did, in God's creation? Francis was different in that he saw that creation and creativity, two parts of the same whole were more than physical, but also spiritual. For all life connects with our Mother Earth, including our calling to be the consciousness of the planet. We take our knowledge, our healing and our spirituality from a whole planet and universe. Our education is material, mental and spiritual and also genetic through our DNA, where it begins.

Over the eons the Earth has suffered five extinction events. The cause of these, all shown in the geologic record, is being researched. The last, 65 million years ago, was caused by a meteorite hitting the Earth at the Yucatan Peninsula. The consequent 'nuclear winter' lasted for many years and over sixty per cent of all life became extinct, mostly the dinosaurs. Not all dinosaurs were killed off as crocodiles and alligators still survive and it is thought that all birds are descendants of the flying reptiles of that era. After ten million years the Earth's biodiversity was restored in the current age of mammals, the Holocene. There have been many close meteorite passes since then as in 2004 a meteorite, 3 miles in diameter, came within a million miles of the earth and in 11 years a huge meteorite will miss the Earth by only 800,000 miles. That is close.

The other extinction events are the end-Ordovician, 440 million years ago, the Late-Devonian, 365 million years ago, the most severe, when 95% of all life was lost, the end-Permian 291 million years ago and the end Triassic 210 million years ago. The final one was the end-Cretaceous above.

The Permian extinction was possibly caused by a huge series of volcanic eruptions in what is known as the Siberian Traps which sucked oxygen from the atmosphere and replaced it with carbon dioxide. The resultant climate change; global warming and global cooling destroyed plants and species which are temperature dependant as they are today. 95% of all life was lost.

Homo-sapiens are the most dominant species on the Earth today. We draw and suck our sustenance in an exploitation of the Earth never before seen on this planet which reduces its bounty as our ravaging grows. We are now at a point in history when humanity has become an environmental abnormality to the Earth as we no longer live sustainably as all other life does and must do to survive.

At the moment scientists are predicting that the Earth could be experiencing the beginning of a 6th great extinction event. This is unique in that it is not being caused by meteors or geologic events, but

by the greedy actions of one single species, humanity or homo-sapiens. Some humans are realising the quandary and huge efforts are being made by conservation groups to sustain tigers, elephants, condors, buffaloes, bears etc what one biologist calls the sexy species. But so much is being lost that whatever we do our impact on our fellow creatures is even now reducing the biodiversity by 25% and that is seen as good news. Human beings may also be on the extinction list as our future is also questioned. We could create a nuclear winter anytime.

Biodiversity or biological diversity is the full sweep of life or creation on the Earth. It includes all biological systems, local and global and all species from microbes and bacteria, insects, plants, fungi fishes, birds and animals and includes homo sapiens, the wise apes, human beings as part of creation. It also includes the feedback and systems of life where species depend upon each other and where all life is sustainable. It is the genetic systems that create all life. It is continually evolving to meet the changes of the planet driven by the Sun. Life sustains and co-evolves the biosphere which is the very thin layer of life found on every surface of the planet. Life can be found on the highest summits such as Everest and in the deepest trenches of the seas where light never penetrates and the temperature is 240°C, way beyond boiling point, yet life has managed to evolve to tolerate and evolve severe eco-systems as well as more benign atmospheres. Life, without catastrophe, evolves into ever more complex creatures and systems. As God saw it, His creation was good, or as Darwin sees it, creation is always leading to perfection. The more complex life is the better able it is to resist the natural disasters that are part of this living beautiful blue Earth.

The more complex life is the better able it is to resist the natural disasters that are part of the living Earth

Humanity has identified 1.75 million species. There are many others but we do not know whether the total could be two million or twenty million. Many are in isolated habitats which humanity is rapidly destroying and with them the biodiversity that lives within them. A square foot of earth can contain its own micro bio-system and thousands of species.

We have identified 1.75M species of life, but this could only be a small part of life on this planet.

In this New Age humanity is destroying species through five factors called HIPPO

- H= Habitat destruction, cutting down the rainforest, killing coral reefs through sea rises, global warming and climate changes, mono-cropping, large scale fishing. Species are often temperature , environment specific like the Panda and many will be killed off by rapid climate change and the current changes are very rapid.
- I= Invasive species, insects, animals (pigs, rats and grey squirrels) as well as plants, including trees that displace native species who often become extinct. This includes domesticated animals. The list of such invasions is huge, from squirrels to ladybirds to Japanese knotweed. This can also include genetically modified crops.
- P= Pollution, acid rain, rivers, seas, soil through contamination (DDT and raptors, chemicals, nitrogen as a fertilizer) sea pollution destroying coral reefs as well as salt pollution in fresh water,
- P= Population. More people increases the HIPPO effects. Human population has grown from 1.5 billion in 1900 to 6 billion in 2000, to 6.6 billion in 2006. Currently humanity is using the capital of three or four(UK) planets or more (USA) when we only have one. Suggestions are that human population should not exceed 2.5-3 billion.

- O= Over-harvesting the seas, the rivers and lakes, hunting to extinction. (Newfoundland cod, Scottish wolves, Dodo, etc.) Over-using the soils so that the fertility declines or becomes desert. Killing for the sake of killing or sport, tigers, buffalo, bears, fish of all kinds.

There are huge changes in biodiversity happening due to the action of humanity on the biosphere. Often for stupid reasons such as the ‘benefactor’ who decided to establish in N. America all the species mentioned in Shakespeare. Today there is a plague of unnatural Starlings across America. By 1993 over 4,500 alien species; animals, plants and microbes had become established in the USA. This is known as biological pollution. Many countries today are very careful about biological imports, even sandwiches.

In a recent study of UK’s biodiversity in the US journal ‘Science’ found that in the past 20 years about 70% of all butterfly species, 28% of plant species and 54% of all bird species have declined. This study involved 20,000 skilled naturalists over 40 years.

Humanity through the over-exploitation of the Earth, its wastes, consumption, action and destruction is causing a 6th extinction. This decline/extinction is accelerating.

The Solutions

Evidence exists in human nature of an instinct to behave ethically. The ethic we need is to lift a stabilized world to decent quality of human life whilst salvaging the and restoring the natural environment. This is being done in many places and nations. Religions and humanists are taking on the conservation ethic. There is also within human mental wiring an aesthetic sense that needs wilderness and wild places to sustain both humanity’s and the Earth’s health, its lands, seas and wild places. What we need to do are,

(P 161 Wilson, Future of Life)

- Keep intact the five remaining frontier forests, Amazon, Guianas, Congo, New Guinea, Canada and Alaska, Russia, Finland and Scandinavia.
- Cease all logging of old-growth forests. (list on *p95 Creation*)
- Conserve and concentrate on the hotspots especially the lakes and river systems
- Define the marine systems in a critical condition and protect them.
- Continue and complete the mapping of the earth’s biodiversity
- Develop a world conservation strategy
- Make conservation profitable
- Broaden our approach to benefit the world economy, new crops, cultivated foods, fish and timber especially pharmaceuticals.
- Initiate restoration projects
- Increase the capacity of zoos, botanical gardens, seed and spore banks, including reserves of frozen seed.
- Support population planning and learning about the environment. Limit humanity’s ecological footprint and numbers to half the current total and so make a secure human future with biodiversity flourishing around it.

There are now many conservation organisations with global influence. WWF, Nature Conservancy, etc. These are now very wealthy and are purchasing and establishing reserves, yet eventually this huge global responsibility will have to be taken over by National Governments.

Much conservation of rare species is being undertaken, such as the Californian Condor and the Panda. Often from rare zoo grown specimens. Low populations often lead to extinction, but small captive populations are often genetically sound.

Rights and Conventions

There are three positions that humans take.

- Humanity first, before all other life forms. This will lead to extinction. This we call anthropocentric
- Humanity and animal rights to be sustained. This is not enough for the survival of the planets biodiversity and may still threaten homo-sapiens with extinction.
- All life has a right to exist. There must be an equality in creation which humanity and the religious must observe and serve. This is ecocentric.

This last would be Francis's position. Humanity must live as if all of God's creation is equal. Humanity however has a specific calling in that the Earth was not made for humanity, but humanity for the Earth. We humans need wilderness and the Earth needs a species which recognises its beauty and understand its complexity.

In June 1992 the UK was one of 154 nations to sign the Convention on Biological Diversity in Rio Janeiro. In the UK, including Cumbria's local Biodiversity Action Plan, a National Biodiversity Network is being established.

Our Earth's is being destroyed by the greed of the First World and the desperation of the starving Third World. Therefore the central problem of the new century is to raise the poor to a decent standard of living, especially the 'developing countries'. In the end success or failure will come down to ethical decisions co-ordinated and made at the personal, local, national, regional and global levels. We know what these must be.

We all need to sustain the integrity of our planet, to live sustainably, not only that but also live well that our children's children will enjoy the beauty that blesses our beautiful blue living planet. Humanity, uniquely in the planet's history, can now choose our own evolution and with it the co-evolution of our species with our neighbours in healthy biodiversity. We humans could all live well if we restrained our greed. What we cannot achieve or sustain is for a rich First World living at the expense of a poor Third World. We need to find, as we did during the second world war an equality of comfortable austerity for all peoples and honour the right of all species. That will lead to a halving of the current total of the human population. This can be done. (see paper on population)

E. O Wilson suggests that the ethical goals of present day biologists should be... (*p106-7 Creation*) (Wilson is a humanist)

- Create life: complete the mapping of a species of simple bacteria at the molecular level, stimulate its processes by computers, then construct individual bacteria from the molecules, or show how it can be accomplished.
- Using this approach, combine with the chemistry of the early Earth, reconstruct the steps that led to life.
- Continue to advance the same molecular reduction and synthesis to human cells and use the information to cure diseases and repair injuries.
- Explain the mind with models of chemical and electrical transmission and the molecular basis of nerve cell growth and network formation; then simulate the mind with the combination of artificial intelligence and artificial emotion.
- Complete the mapping of the Earth's fauna and flora.
- Use the exponentially growing information about diversity to advance medicine, agriculture and public health.
- Create a Tree of Life for all species and for major gene ensembles within them, tracing the pathways of evolutionary histories. Combine this information with palaeontology and environmental history, establish the principles of the origin of biodiversity.
- Decipher how stable natural communities are assembled and regulated at the species level. Use this information to stabilise and protect the Earth's biodiversity
- Bridge, if not unify, the natural sciences, social sciences and humanities by the exploration of the biological foundation of mind and nature. Unveil the co-evolution of genes and culture.

The Cumbria Perspective.

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