

The Death of Life: A Challenge to Christians

By Sean McDonagh SSC

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Gradually environmentalists and even political commentators are becoming aware of the fact that the election of President George Bush was bad news for the poor of the world and for the environment. Since his arrival at the White House he has been busy rolling back environmental legislation. He plans to encourage oil and gas exploration in the protected areas, like the Alaskan National Wildlife Arctic Refuge. He is promoting nuclear power and has delayed a demand that utilities reduce the amount of arsenic in drinking water. (1) Mining corporations will no longer have to post bonds to pay for clean up operations should they pollute the environment. Finally, in March he walked away from the Kyoto Protocol on greenhouse gases, because he deemed it not to be in the best interest of corporate America. The fact that other nations were appalled at this decision did not seem to bother him or encourage him to change his mind. John Gummer, the form British Environment Secretary put it very succinctly when he wrote that "green campaigners see the biggest kid on the block turning from a protector to a bully". (2)

It is a major tragedy for our earth that someone like President Bush, who is so insensitive on environmental issues, should now be in charge of the most powerful and in many ways most polluting country on Earth. Though only five percent of the global population live in the U.S. it is responsible for 25 percent of greenhouse gases.

While the extinction of tens or even hundreds of thousands of species across the globe, does not receive the same media coverage as global warming, sterilising the Earth will impoverish all future generations. The renowned biologist, Edward Wilson of Harvard University signed A Letter to President Bush Time (April 9, 2001) pleading with him to "reduce U.S. production of greenhouse gases". He is obviously concerned about global warming but he considers that the "quenching of life's exuberance will be more consequential to humanity than all of present-day global warming, ozone depletion and pollution combined". (3)

In the course of a documentary on the extinction of species entitled, State of the

Planet, screened on BBC 1 on November 29th, 2000, David Attenborough said that unless major protective measures are taken now we could lose up to half of the species of our world in the next 50 to 100 hundred years. The possibility that human activity could sterilise the planet in such a short period should have sent shock waves registering about eight on the Richter scale right around the world. It should have rallied governments, corporations, religions and citizens to protect the delicate web of life, since each strand pulled from the closely knit fabric of life endangers the survival of other species, including humans. In fact, I did not see a single comment in the newspapers or hear a word on the electronic media during the following days.

I became aware of the massive destruction of species when I went to live and work among the T'boli people on the island of Mindanao in the Philippines in the late 1970s. Tropical forests teem with a rich variety of plants, animals, reptiles, birds, insects and fish species; almost half the species on the earth according to many biologists. In a single hectare of rainforest one might find over 100 different species of trees with countless other species as well. With the destruction of rainforests in Asia, Africa, Central and Latin America and New Guinea tens of thousands of species have already been lost. While living in the mountains of South Cotabato in Mindanao I saw one of the last remaining Philippine eagles. The destruction of the rainforest in the Philippines has take a huge toll on these birds. Today less than 500 bird remain in the wild. With its habitat destroyed this magnificent bird faces extinction.

Professor Wilson, author of, *The Diversity of Life*, estimated in the beginning of the 1990s that 27,000 species were being lost each year. (4) Many experts now consider this to be a conservative estimate. Wilson warned, however, that the destruction of species would soar as the last remaining areas of tropical forests are exploited and destroyed. For example, it is estimated that one in eight of the world's bird species are facing extinction. (5) The British scientist, Sir Robert May, believes that species are now perishing at 1,000, or even 10,000 times, the 'background' extinction over the past 600 million years. (6)

Species extinction is not just a Third World problem. In Britain and Ireland intensive, petrochemical agriculture and building programmes has taken a huge toll on the environment. Three species of wild flowers -corn cockle, corn chamomile and shepherd's needle -have become extinct in recent years. When I was growing up in the 1950s clumps of cowslips, buttercups, blue bells and primroses decorated most fields. They have almost all vanished and have been replaced by ubiquitous, monotonous ryegrass.

Agricultural practices, massacring hedges and thoughtless building programmes have silenced birds in recent years. Since World War II much of Britain's ancient meadows, hedgerows and woodlands have been destroyed in an effort to create pairie-like environments much loved by the agri-business industry. In the period between 1948-1989, 109,000 miles of hedgerows were destroyed creating huge fields some as large as 500 acres. As land holding increased many small farmers

were forced out of farming. In 1964 there was still a quarter of a million small family farms. By 1989 this number had dropped by more than a half to 120,000 and more have sold out in the last decade.

Shocked by the experience of food scarcity during World War 11 successive governments in the post-war era devised schemes to boost agricultural production, so that Britain would never be vulnerable. This trend was further intensified after Britain entered the Common Market in 1973. Generous agricultural subsidies which, in the main, benefited large, well-off farmers led to even more intensive agricultural production. On the dairy side, for example, milk yields doubled. On the cereal front wheat production increased five-fold and barley six-fold. Such massive increases were not wrestled from the soil without massive social and ecological costs. Larger holding and increased mechanisation saw many farmers and their children leaving the land with a concomitant rundown in rural services. The ecological costs were also high. There was a dramatic increase in agricultural pollution, from slurry and silage. Nitrate levels and agricultural chemicals pollute the drinking water of many people.

The stark reality is that modern intensive agriculture has also totally transformed the countryside. Ninety-five percent of Britain's traditional hay meadows, have been destroyed . 99 percent of the lowland hearths have vanished, either ploughed up or planted with conifers. This intensive agriculture is akin to soil mining. Over 5 million acres are now threatened. (7)

The impact on wildlife is also heavy. Last year (2000) a survey for the Royal Society for the Protection of Birds (RSPB) and the British Trust for Ornithology found the population of birds like larks, corn buntings and grey partridges have fallen in number by over 50 percent during the past 25 years. The corncrake is almost completely gone it can only be heard in the western Scottish Isles. Changes in cropping patterns and the use of pesticides means that food for many farmland bird species is no longer available. This has lead to the decline in the cuckoo, skylark, corn bunting, yellowhammer, barn owl, curlew and even thrushes In August 2000 the British government promised to take appropriate steps to stabilise the population of many farmland bird species. What is needed now is concrete action programmes. (8)

Trees and plants have also suffered. A United Nations Report in 1992 found that over half the trees in Britain were sick or dying. Only six percent of the country's trees were found to be in good condition compared with 41 percent in 1989. The report blamed pollution, especially acid rain for the destruction, though the government preferred to believe the change is due to natural causes. (9) 19 species of wildflowers vanished during the 20th century and another 50 are on the endangered list.

The butterfly population is also under threat right across Britain. A report published by Butterfly Conservation, The Centre for Ecology and Hydrology and the Joint Nature Conservation Committee, in April 2001 found that of the 59 butterfly

species found in Britain, 15 species have declined by more than 50 percent and five species have become extinct. Once again the main cause of this collapse is the massive change in land usage that has taken place in recent years. Unless radical conservation steps are taken the delightful sight of watching a butterfly flitting across a meadow in summer may soon become a thing of the past. (10)

The peat bogs in Britain have been mined in recent years mainly for use by gardeners. During April 2001 a giant US-owned Scotts company will spend £2 million advertising their peat-based compost. The environmental organisation Friends of the Earth are opposed to the extraction and selling of peat. They maintain that such a practice is destroying the last remnant of the raised bogs in Britain. If the destruction of the bogs continues rare plants like the great sundew and rare birds like the short-eared owl will face extinction.

The situation in Ireland regarding peat bogs is even worse. Originally they covered one-fifth of the country. Now less than one quarter of that area remains and turf extraction for energy and garden centres is rapidly eating away at what is left. As the bogs shrink under the impact of giant turf extractors the creatures of the bogs are facing an uncertain future. These include two rare species of butterflies, nine different species of dragonflies and a very rare snail, a relic of the last ice-age, known as *saxifraga hirculus*. A recent survey of Irish bogs by the Irish Peatland Conservation Council (IPCC) revealed that the destruction of peatlands is much more serious than previously thought. (11)

Fish species are also beginning to appear on the extinction list. A study of the World Wide Fund for Nature found that "population levels of the Atlantic salmon in a third of the traditional salmon rivers of north America and Europe are endangered and that the "king of fish" has disappeared from more than 300 out of 2,000 river systems. (12) Factors generated by human activity are mainly responsible for the decline of the species. In May 2002 Minister Frank Fahey refused to take the advice of his own scientists and reduce the catch taken by the drift-net fishermen by 40 percent in order to save the north Atlantic salmon. (13) These include pollution, industrialized farming, acid rain, hormone disturbing chemicals, forestry and urbanisation. The disappearance of salmon should be a wake-up call about the health of the wider environment. To thrive salmon need clean and well oxygenated water. Once water quality declines that salmon begin to disappear also.

The present "extinction spasm", is the seventh mass-extinction event in the past 600 million years of life on earth. It is according to the British biologist, Norman Myers, the greatest set back to life's abundance and diversity since the first flickerings of life emerged almost four billion years ago. On this occasion the destruction is not caused by outside factors, such as a meteor as happened at the end of the mesozoic era more than 60 million years ago when the dinosaurs became extinct. Rather it is human activity which is destroying the habitat of other creatures and changing global climate patterns.

Extinction on such a massive scale is so horrendous that it is difficult to grasp. Many species are being pushed beyond the precipice of extinction before scientists have been able to identify them and decide whether they might be useful as a food or health source for human beings now or in the future.

Other endangered species are well-known and closely related to humankind. Time Magazine (January 31st 2000) estimates that many of our close cousins among primates are on the brink of extinction. These include orangutans, mountain gorillas, golden bamboo lemur and Hainan gibbons. Big game hunters have decimated the rhino population. Today fewer than 12,000 survive in Asia and Asia. The demand for ivory has led to a precipitous decline in the African from 2 million in 1970 to under 500,000 today. Tigers are also facing extinction today. In 1996 it was estimated that the wild population was between 4,600-7,200. The largest cat in the world, the Siberian tiger is down to a mere 200 individuals. (14) No wonder the Time article concluded with a very pertinent question: "How long will Earth be a hospitable place for humanity when it is no longer a fit home for our next of kin?". (15)

Yet few of the people who make crucial economic or political decisions today have any grasp of how thoroughly we are tearing apart the web of life and what the consequence will be for all life, including human life. At the moment a mere three species of cereals -wheat, rice and maize -are the staple food for half the world's population. Potentially there are thousands of species that could be bred to meet human food demands. With rapid extinction they may be gone before their food value is discovered. The same is true for medicinal plants. Because of their long evolutionary journey there are million of plants that could conceivably be used as antibiotics, anticancer drugs or painkillers. A rare plant called the rose periwinkle found in Madagascar has brought hope and relief to many children who suffer from leukaemia. In June 2001, British scientists reported that they had dramatic success in developing the anti-cancer drug combretastatin which is made from the bark of an African tree. (16)

It would be sheer lunacy if this rich treasure chest was lost to future generations. A case in point is a frog species found in the Australian rainforest that swallowed her own eggs, incubated them in its stomach and gave birth through her mouth. On examination it was found that this species of frog had the ability to switch off her stomach acids while carrying her young. Discovering how this extraordinary feat was achieved would no doubt help pharmaceutical companies develop effective treatments for people who suffer from stomach complaints. The knowledge which was written in the genes of this creature may never be known as it became extinct in 1980.

Fr. Thomas Berry, a writer on environmental issues, believes that the destruction of life must be seen as one of the most serious moral issues of our times.

Extinction is an eternal concept. It is not at all like killing an individual life form that can be renewed by the moral process of reproduction ... nor is it something

that can be remedied...nor is it something that will affect only our generation. No! It is an absolute and final act for which there is no remedy on earth or in heaven. (17)

The extinction of species is not treated formally in the Scriptures. Yet appreciation for life, gratitude to God for the gift of life and a strong belief that God cares for life and wishes humans to emulate this care are central features of both the Hebrew and Christian Scriptures.

In Genesis 1: 11-12 the author focuses both on God's act of creating plants and on the self-propagating power with which he endowed all plant life. We are told that that God created "seed bearing plants, and fruit trees with their seeds inside". The verse ends with the affirmation that "God saw it was good". This concern for fruitfulness is also evident in the creation of aquatic life. "God saw it was good, God blessed them, saying "be fruitful, multiply and fill the waters of the sea and let the birds multiply on the earth" (Gen. 1:20-21).

It is crucial to stress at the outset that the Hebrew scriptures never discuss life in a philosophical, detached and abstract manner . Rather life is seen in an active, concrete and, usually, generative way. The Bible is absolutely clear that God is the author of Life. God shares His gift of life with humans and other creatures by breathing His living spirit (ruah) into creatures (Gen. 2:7). We see in a text like Psalm 104 that God cares for all creation, not merely human beings. "You set springs gushing in ravines, running down between the mountains, supplying water for wild animals, attracting the thirsty wild donkeys, near there the birds of the air make their nests" (Ps. 104: 10-11). God' loving care is summarised in verse 27/28. All creatures depend on you to feed them throughout the year; you provide the food they eat, with generous hand you satisfy their hunger".

In the Noah story God threatens to chastise humankind because of their sinfulness. "the earth is full of the violence of man's making, and I will efface them from the earth" (Gen. 1:13). The story contains a theme that recurs throughout the Bible, namely, that other creatures also suffer because of human greed and sinfulness. Genesis records that Noah was a good man (Gen 9:1) so God planned to save him and his family from the impending flood waters. God's instructions to Noah included not merely strategies to save himself and his family but detailed prescriptions on how to protect other species as well. Noah was told to bring male and female of all creatures, clean, unclean, birds and reptiles into the safety of the ark, "so that their lives may be saved" (Gen. 6:20). Certainly this care can be seen as a very deliberate act of protecting the integrity of all creation.

It is not surprising then that all the creatures of the earth are party to the covenant which God makes with Noah in the aftermath of the Flood. God promises that He will never in the future initiate a catastrophe like the Flood again. "See, I establish my Covenant with you and with your descendants after you: also with every living creature to be found with you, birds, cattle and every wild beast with you; everything that came out of the ark, everything that lives on the earth. I

establish my Covenant with you: no thing of flesh shall be swept away again by the waters of the flood. There shall be no flood to destroy the earth again" (Gen. 9: 7-11).

The deep respect for all life which runs through the Hebrew scriptures is underscored by the prohibition on eating "flesh with life, that is blood in it" (Gen. 9. 5). For the Hebrews blood was seen as the seat of life and therefore it was something special and sacred. Humans were not allowed to eat food that contains blood.

The speech by Moses towards the end of the book of Deuteronomy calls on the people of Israel to be faithful to the covenant they made with God on Mount Sinai. He assures them that if they are faithful they will experience blessings; if, on the other hand, they turn away and follow other gods they will be punished. Moses' injunction to "choose life, so that you and your descendants may live" (Dt. 30: 19) has a contemporary relevance given the rampant destruction of life through species extinction which is so common today.

Life is a recurring theme in the New Testament. The person of Christ is seen as central to all life, "through Him all things came to be" (Jn. 1:2). He is the "bread of life" (Jn. 6: 47). "Anyone who eats this bread will live forever; and the bread that I shall give is my flesh, for the life of the world" (Jn. 6: 50-51).

Jesus presents Himself as "the Way, the Truth and the Life" (Jn.14: 6). He insists "I have come that they have life and have it to the full" (Jn. 10:10). Jesus as the Word and Wisdom of God is active before the dawn of time bringing creation to birth out of the chaos. Through him the Universe, the Earth, and all life was created (Jn. 1:3-5). All the rich unfolding of the universe -from the initial glow of the fireball- through the shaping of the stars and the earth as the green planet of the universe, right up to the emergence of humans and their varied cultures and histories are centred on Jesus (Col.1:16-17).

Through his resurrection Christ is more deeply wedded to the life of the world. The preface for the Mass of Easter Day rejoices in the fact that the resurrection "renews all creation". In the context of extinction it is important to remember that every living creature on earth has a profound relationship with the resurrected Lord. His loving touch heals our broken-ness and fulfils all creation. So, to wantonly destroy any aspect of creation or to banish forever species from their place in the community of life is to deface the image of Christ which is radiated through-out our world. Christ still suffers, not only when people are denied their rights and exploited, but when seas, rivers, forests are desecrated and biocide is perpetrated. As the Australian theologian Norman Habel puts it "God is found in weakness, in suffering, and in servant earth". (18)

The Christian Churches, as the midwives of God's reign, must speak the truth about global environmental destruction in a much more forthright and unambiguous way. They must also encourage new possibilities of living which are

much less destructive. The theological pathways to achieve this reconciliation in the Christian tradition are through imitating the self-emptying and unselfishness of Christ. As is clear from Col 1.20 and Eph.2.26 this will often involve pain and the way of the cross. It will involve standing with victims, including the suffering earth and other species against the architects of destruction.

The Genesis text tells us that human sins destroys our relationship with God, severs human bonds and disfigures creation. The good news of the Gospel is about restoring all these fractured relationships. The 'groaning of creation' that Paul wrote about in Romans 8:22 is very clear when one examines the current massive extinction of species. Protecting and restoring creation must be at the heart of promoting the Reign of God in our contemporary world.

The Australian theologian, Denis Edwards, has written extensively about Trinitarian theology and ecology. He points out that in St. Bonaventure's theology of the Trinity God is seen as the source of life and goodness. The Father is seen as the "Fountain Fullness (*fontalis plenitudo*) expressing Himself in the one who is Image and Word and that this dynamic process reaches its consummation in the one who is the love between them, the Spirit". (19) The divine love-life or fecundity "explodes into a thousand forms' in the world of creation". For Bonaventure creatures are "nothing less than a representation of the wisdom of God, and a kind of sculpture.

Every creature is of its very nature a likeness and resemblance to eternal wisdom. Every species, each ecosystem, the earth's biosphere, the universe itself-all are the self expression of divine wisdom". (20) In the light of this theology the present mega-extinction phase is not alone sterilising the planet and undermining its diversity but is seriously compromising our ability to develop new insights into the nature of God. As one species after another is jostled over the abyss of extinction the unique way that each one has of reflecting the Divine is lost forever. Bonaventure used the image of the stain-glass window to capture this difference. "As a ray of light entering through a window is coloured in different ways according to the different colours of the various parts, so the divine ray shines forth in each and every creature in different ways and in different properties". (21)

St. Thomas had much the same thing in mind in the Summa, Part 1, Question 47, Article 1. He argued that God created a magnificent variety of creatures so that his goodness might be communicated to them and reflected by them.

Hence we must say that the distinction and multitude of things comes from the intention of the first agent, who is God. For He brought things into being in order that His goodness might be communicated to creatures and be represented by them; and because His goodness could not be adequately represented by one creature alone, He produced many and diverse creatures so that, what was wanting to one in the manifestation of the Divine goodness, might be supplied by another. For goodness, which in God is simple and uniform, in creatures is manifold and divided; and hence the whole universe together participates in the

divine goodness more perfectly and represents it better than any single creature whatsoever.

Our profound and wonderful sense of the Divine comes to us to a great extent from the beauty and diversity of the natural world. The Psalmist uses the image of the cedars of Lebanon, while the Book of Exodus compares God's love to that of an eagle who bears her young on her wings (Ex. 19:4). So when we extinguish species we destroy the possibilities those species had for representing in a unique way the mystery of God.

This is one of the reasons why I find it difficult to comprehend that the Churches, especially those that emphasise a pro-life ethos, have been so silent on extinction. The evil of species extinction does not appear, for example, in the encyclical *Veritatis Splendor* which was written by Pope John Paul II to restate Catholic moral teaching in the contemporary world. (22) I am saddened that Catholics, either at the individual or institutional level, have not been "people of life and for life" to quote the words of Pope John Paul II in *Evangelium Vitae*. (23) It is difficult to comprehend that, in a document named the Gospel of Life, the list does include murder, contraception, abortion and suicide but does not mention the enormity of biocide. This is despite the fact that Pontifical Academy of Sciences had reported in 1987 that some 35,000 species were facing extinction by the year 2000. The Pontifical Academy obviously underestimated the calamity but, at least, they raised the issue. (24)

I wonder is it possible that the Catholic position on birth control as enunciated in *Humanae Vitae* might be one of the reasons why the Catholic Church has been so slow to enter this debate and the wider ecological debate. One of the principal causes of environmental degradation and extinction is both the growth in level of human population and more specifically the growth in human demands on the planet. More and more one species, *homo sapiens*, is cornering all the resources of the planet and thereby denying these to other species. No wonder then that these are being pushed into oblivion. In 1986 a study by Vitousek et al. Estimated that humans have now captured 40 percent of terrestrial energy for their own exclusive use. If one includes the oceans the percentage drops to 25 percent. (25) This finding is extremely important as it sets the context for the optimum scale of human activity, including economic activity in relationship to the needs of other creatures on earth. The call for a five-fold increase in world-wide economic activity contained in the book *Our Common Future*, appears totally unrealistic if Vitousek and his collaborators are at all close to the mark.

We need to change radically and develop a new respect for all life before it is too late. Christians who believe that Jesus came so that all may "have life and have it to the full" (Jn. 10:10) should be in the forefront in the campaign to protect life locally and globally. The first steps may involve lending one's voice to the promotion of less intensive and destructive methods of agriculture. The Churches should also support every at national and international level by groups like the World Wide Fund For Nature (WWF) to protect endangered habitats like rainforests,

mangroves and coral reefs. Initiatives like the Forest Stewardship Council (FSC) that attempt to regulate trade in forest products deserve the wholehearted backing of Christians as does the work of the Convention on International Trade in Endangered Species (CITES).

During the past decade billions of pounds have been spent by corporations, universities and states researching and promoting recombinant DNA technologies. Some of the genetically engineered plants, animals and fish are already being marketed commercially. Many critics claim that these genetically-engineered organisms are harmful to human health, destructive towards the environment and socially divisive.

At the moment the jury is out on that debate, but it surely should not be out on the contention that much more political will and financial resources ought to be committed protecting habitats for species that are threatened with extinction. In a lecture delivered on May 2, 2001 at the National Science Foundation in Arlington, Virginia, USA Professor Edward Wilson stated that it would only take only \$28 billion to permanently save 70 percent of the known plant and animal species in the world. The money could be used in a variety of ways. One initiative would be to buy access to the World's most important and threatened areas, especially in the Congo, New Guinea, the Amazon and other biodiversity 'hotspots' around the world. (26)

Some of this money should also be made available to tribal people and those who lived in forest areas to manage their habitat in a sustainable way. Someone like myself who spent over a decade living close to tropical rainforests know that combating poverty and promoting fairness and equity is an essential ingredient in protect the natural habitat. When one thinks of the fact that global military budget reaches over £1,000 billion per year it beggars the imagination that it is so difficult to come by the paltry sum of \$28 billion is essential if we are to prevent the biological demise of the planet.

Some people might think that the World Bank would be the appropriate institution to manage such a fund. Unfortunately the Bank's record tropical forestry matters has been so dismal that they ought not to be the one to administer this fund. On the one hand the World Bank funded massive projects that directly destroyed huge areas of tropical forest. Two of these did massive damage in Brazil. One at Carajas in the state of Para which included developing mining complex and railway to transport high ore to the sea. The Polonoroeste project in the state of Rondonia involved massive road building programme and an agricultural colonization initiative. The Bank also funded the ecologically and culturally disastrous transmigration programme in Indonesia. Another black mark against the Bank is that in the 1980s and 1990s it seemed oblivious of the damage that its structural adjustment programmes was wrecking on global forests.

The World Bank, International Monetary Fund and other multilateral financial institutions should make a huge contribution to the Forest Survival Fund and

request First World governments to do likewise. This survival fund might linked to an agency to the United Nations Environment and Development Agency (UNDP).

The Churches should support such an initiative and spearhead an awareness programme in order to educate the public, and especially the political and commercial leadership so that the required funds are made available immediately. Church related development agencies like Trocaire and Cafod need to take much more pro-active approach in campaigning to protect biodiversity in countries where they work in partnership with local Church-based non-government organisations. Money, educational opportunities, and communications technologies need to be made available, especially in Third World countries, to train competent people, among them botanists and biologists, to form the nucleus of task forces designed to stem the haemorrhage of extinction before it is too late. Catholic universities and colleges ought to be in the forefront of such endeavours and regular bulletins should be available in the Catholic media tracking endangered species and supporting a variety of remedial strategies.

Irish citizens should rally behind the recent call by a coalition of environmental organisations like VOICE, An Taisce, BirdWatch Ireland and CoastWatch to Minister DeValera to speed up the process of preparing Ireland's National Biodiversity Plan. These groups have also called on the Department of Arts, Heritage, the Gaeltacht and the Islands and to work more openly and more closely with environmental and local groups in developing this plan. Initiatives by environmental groups like VOICE, BirdWatch Ireland, and the Irish Peatland Conservation Council.

A special word of appreciation and support is due to a small non-government organisation situated in Scariff, Co. Clare called the Irish Seed Association. This organisation is involved in locating and preserving traditional varieties of fruit and vegetable. They pass traditional seeds on to members so that the Irish cultural and genetic heritage may continue to flourish. May their tribe increase.

Sean McDonagh is a Columban Missionary, a Director of VOICE and author of Greening the Christian Millennium.

1. Freedland, Jonathan, "Presidency of Dunces", The Guardian, April 25, 2001, page 19. 2. Gummer, John, "Don't let Bush bully us" The Tablet, April 7, 2001, page 478. 3. Wilson, Edward. O. "Vanishing Before Our Eyes", Time Special Edition, April/May 2000, page 30. 4. Wilson, Edward, O, The Diversity of Life, Penguin, London, page 268. 5. Nick Nutaal, "Hundreds of birds on 'extinction' list" The Times, October 16, 1999, page 9. 6. Radford, Tim "Creatures are becoming extinct at a frightening rate. So who cares?" The Guardian April 7th 2000. 7. Lean, Geoffrey, "Green and Ruined Land", The Observer Magazine, June 4, 1989. 8. Allison, Rebecca, "Threat of extinction stalks farmland bird species", The Guardian November 20th 2000. Page 12. 9. Lean Geoffrey, "Half of Britain's trees are sick or dying, says UN report", The Observer, 27 September, 1992, page 3. 10. Butterflies across Britain threatened by shrinking habitats" The Guardian, April 25, 2001, page 13. 11. Hall, Denise, "Sod's Law", The Guardian (June 14, 2000) page 4 of the

supplement. 12. Vidal, John, "Stocks of wild Atlantic Salmon at record low", The Guardian, June 1, 2001, page 6. 13. Jack Power, "Now, it's our turn to be the lepers of Europe", The Irish Examiner, May 15th 2002, page 21 14. McGreal, Chris "Lions face new threat; they're rich, American and they've got guns". The Guardian, April 27, 2001, page 3. 15. Charles, P. Alexander, "Death Row", Time, January 31, 2000, page 62-65. 16. Meek, James, "Cancer drug made from bark", The Guardian, June 15, 2001. 17. Berry, Thomas, Riverdale Papers, Vol 8, unpublished. 18. Norman Habel 1998, "Key Ecojustice Principles" in Ecotheology, Sheffield Academic Press Limited, page 120. 19. Denis Edwards, 1998, "Theological Foundations for Ecological Praxis", in Ecotheology, Sheffield Academic Press, page 130. 20. Ibid 130 21. Denis Edwards, 1998, "Theological Foundations for Ecological Praxis", in Ecotheology, Sheffield Academic Press, page 130. 22. Veritatis Splendor, The Catholic Truth Society, London, 1993. 23. Evangelium Vitae, No 6, 1995, Veritas Publications, Dublin. 24. Thavis, John, "Environmental concerns go beyond Vatican's borders", The Pittsburg Catholic, November 11, 1988, page 4. 25. Vitousek, P.M. Ehrlich, P. R. Ehrlich, A.H. Matson "Human Appropriation of the Products of Photosynthesis" Bioscience, Vol. 34, No.6 pp 368-373. 26. Forest Conservation News Today, Biodiversity Endgame: Buy Conservation of Endangered Ecosystems, Forest Network a Project of Forest.org, Inc. date May 5, 2001. END

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