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Climate Change and Its Effects: Theological Reflections

1. Climate Change – 2. Theology – 3. Catholic Teaching on the Environment – 4. Ecological Conversion – 5. Conclusion.

Two-time Pulitzer Prize winner for his books on the dire threat of climate change, Harvard Professor of Biology, Edward Wilson, judges that “for the first time in history a conviction has developed among those who can actually think more than a decade ahead that we are playing a global end game”¹. In a commentary on his monumental *Insight*, theologian Bernard Lonergan judges that “the practicality of common sense engenders and maintains enormous structures of technology, economics, politics, and culture that separate man from Nature”². In this essay, we seek to show that the global end game to which Wilson refers and which we will name ecological crisis demonstrate that man and Nature are not separated, indeed cannot be separated, and that it is the human attempt to separate them that has

¹ Edward O. Wilson. 2016. *Half earth: Our planet's fight for life*. New York. Liveright Publishing, back cover.

² Bernard J. F. Lonergan. 1992. *Insight: Study of human understanding*. In *Collected works of Bernard Lonergan*. Ed. Frederick E. Crowe, Robert M. Doran, Vol. 3, 242. Toronto: University of Toronto Press.

generated the ecological crisis³. We first lay out the details of climate change and then offer some theological suggestions to alter the end game and reverse and heal climate change.

1. Climate Change

There have been five major global catastrophes since the earth came into being in the “Big Bang” some 14 billion years ago. These events have occurred at roughly one hundred thousand-year intervals, and each of them has caused widespread global destruction and the extinction of thousands of plants and animals. The last one caused the extinction of the dinosaurs, whose existence we know only from fossil remains (and children’s plastic toys). As America’s prime science writer, Elizabeth Kolbert, describes it, planet earth and all its inhabitants are now living on the edge of a sixth extinction⁴ that will have been caused by its only rational inhabitant, *homo sapiens*, humans, whose planes, trains, automobiles, and cattle are now producing more greenhouse gases than any volcano ever did or does. Those gases, primarily carbon dioxide, nitrous oxide, and methane are producing by-products that are causing global or, better, atmospheric warming which, in turn, is causing ocean warming with subsequent ocean rise and coastal erosion, ocean acidification as the gases interact with the oceans to produce acids with the extinction of ocean biodiversity, ice melt with yet more ocean rise, and geographical desertification. The influence of *homo sapiens* on these climatic outcomes is so obvious and pervasive that geologists and biologists are now suggesting that we are living in a new geological era, the *Anthropocene* era, from the Greek *anthropos*, humankind⁵. This era is all about and for one species alone, *homo sapiens*, with everything else subsidiary or ignored. Wilson, therefore, chooses to call it the *Eremocene* era, from the Greek *eremos*, solitary or desolate, or simply the Age of Loneliness⁶.

Climate scientists agree that the rise of the annual surface temperature caused by pollution should not be allowed to exceed 2°C above that prior to the birth of the

³ See Reinhard Cardinal Marx. 2016. “Everything is connected: On the relevance of an integral understanding of reality in *Laudato si*”. *Theological Studies* 77: 295–307.

⁴ Elizabeth Kolbert. 2014. *The sixth extinction: An unnatural history*. New York: Henry Holt.

⁵ Kolbert. 2014. *The sixth extinction*, 107–110.

⁶ Edward O. Wilson. 2014. *The meaning of human existence*. New York: Liveright Publishing, 123. On loneliness in the United States, see Olivia Laing. 2016. *The lonely city: Adventures in the art of being alone*. London: Picador Press; Jillian Richardson. 2019. *Un-lonely planet: How healthy congregations can change the world*. Potomac, MD: New Degree Press.

Industrial Revolution in the mid-eighteenth century. That rise, Wilson points out, “has already [in 2016] reached nearly half of the 2°C threshold”⁷. If, in the present situation, probably when global atmospheric warming is allowed to exceed the 2°C increase level, earth’s weather will be severely destabilized. Historic heat records will become routine, and so will severe storms and other weather anomalies. If the melting of the Greenland and Antarctic ice fields, already well under way, is allowed to accelerate, earth will acquire new landmasses, a new geography, and a new climate. Sea level is already rising three millimeters a year and, with the addition of melted water from icefields and by expansion of the sea volume due to increased atmospheric warming, it is predicted to eventually exceed nine meters. The expansion of the sea will lead to the extinction of coastal land masses and the moving of their populations, as it has already led to the extinction of some Pacific coral islands and the moving of their populations.

We think of the chaos caused by the flooding of Boston, New York, Florida, Louisiana, Tokyo, Liverpool, the Netherlands, and a host of other endangered oceanside metropolises with large populations. In the present and foreseeable future of the planet the submergence, or at least the serious erosion of the land hosting them, is not an altogether unimaginable situation, except perhaps for those unable to think more than a decade ahead. Just last night we watched on our televisions the further erosion of the California coastline by unprecedented rainfall and flooding, leaving multiple expensive homes teetering insecurely over what just last week were their backyards. The possible extinction of these coastal regions will fit into the pattern of the five major extinctions that have already been recorded in the history of the planet.

In her *The Sixth Extinction*, Kolbert documents the species that are already extinct or facing extinction. She leads off with an amphibian, the poisonous Panamanian golden frog that once abounded in the forests of central Panama and then, alarmingly quickly, went extinct. It turned out that they had all been killed by a fungus which was assigned a formidable name, *Batrachochytrium dendrobatidis* (*batrachos* is the Greek for frog). Not surprisingly, it is known in scientific circles simply as Bd. Then comes every child’s favorite toy, the tiny plastic dinosaur they quickly learn represents a very large animal that died off thousands of years ago. Though they are a different species, we include here the mastodon, bones of which were discovered in 1873 near Cincinnati. No mastodon has ever been seen by any modern eyes. It and the dinosaurs were wiped out, it is now believed, some thirteen thousand years ago. Their demise, Kolbert notes, “was part of a wave of disappear-

⁷ Wilson. 2016. *Half earth*, 65–66.

ances that has come to be known as the megafauna extinction. This wave coincided with the spread of modern humans and, increasingly, is understood to have been a result of it”⁸. The dire results of the human killing of animals, both defensive and food seeking killing, were already becoming evident.

Kolbert moves on to deal with the extinction of the great auk that she dubs the “original penguin”, even though adult auks grew to about two and a half feet tall. In its heyday, the great auk flourished in the thousands from northern Europe to north America. That was before humans discovered that it could not fly and so was easily caught and made good eating, and that its feathers made great stuffing for mattresses. In 1785, an English trader, George Cartwright, observed that the destruction human feather-pluckers and food-seekers caused to the huge population of auks on the Isle of Birds northeast of Newfoundland was so great that the great auk would soon “be diminished to almost nothing”⁹. He could have omitted the “almost”, for the great auk was soon driven by human predatory activity into extinction. From its original thousands flourishing across the Atlantic only the odd one can now be seen in the odd museum.

The name *Anthropocene* was coined by Dutch chemist, Paul Crutzen, winner of the Nobel Prize for his discovery of ozone-depleting compounds threatening to extend worldwide the Antarctic ozone hole that opens up every spring. Such an extension would probably mean the end of planet earth and its inhabitants. In 2002, Crutzen published a short, very influential article in the online journal *Nature*¹⁰, in which he pointed out two things that have greatly increased in the past three hundred years: first, the human population has increased tenfold and predicted it would reach ten billion by 2024 and, second, the effects of humans on the global environment. Among the human-produced effects he noted the following. First, human activity has transformed between a third and a half of the land surface of the planet, with the loss of habitat and species extinction. Second, the increase of carbon dioxide in the atmosphere is leading to the disappearance of tropical forests and to the disappearance and extinction of species that depend on them. Third, the damming and redirecting of rivers has become commonplace with the destruction of wildlife habitat, again causing species extinction. Fourth, the burning of fossil fuels, coal, oil, and natural gas, and agricultural practice have caused substantial increase in greenhouse gases, carbon dioxide by 30 percent and the more dangerous cattle-produced methane by 100 percent, their highest known levels in the past four

⁸ Kolbert. 2014. *The sixth extinction*, 46.

⁹ See Kolbert. 2014. *The sixth extinction*, 61.

¹⁰ Paul Crutzen. 2002. “Geology of mankind”. *Nature* 415, 23.

hundred thousand years. Fifth, modern fisheries remove more than a third of the fish from coastal waters with the threatened extinction of many of them. These human- and cattle-produced effects have created atmospheric warming, ice melt, ocean warming and rise, acid precipitation, causing the acidification of rivers and oceans, causing in turn the destruction of marine life.

The marine life getting the most media attention as being not only threatened but actually destroyed by ocean acidification is the coral of coral reefs. Coral is a living organism with two constituents. The constituent you see, waving in the sea swell when you dive by a coral reef, is a plantlike animal whose solid substance is composed of calcium carbonate or lime. This animal lives in symbiosis with single-cell microorganisms called zooxanthellae, which give the bright colors to the coral. The zooxanthellae are very important to the coral, for they produce by photosynthesis the calcium carbonate from which the plantlike animal gets its shell. The host animal, in other words, needs the zooxanthellae to exist. With a little warming of the ocean, as little as 1° C., or its little acidification, the zooxanthellae leave their symbiotic animal, taking their photosynthesis activity with them, leading to the destruction of the coral. Wilson reports that the warming of the sea has already been catastrophic for coral, that “nineteen percent of the world’s coral reefs are dead” and that thirty-eight percent are “vulnerable or endangered”. It is suggested by recent analyses that twenty-five percent of the world’s coral will be extinct via ocean warming and acidification by the year 2050¹¹. Both ocean warming and acidification are caused by the actions of humans burning fossil fuels that pollute the atmosphere with carbon dioxide that combines with sea water to form the acids that turn it acidic.

“This year alone [2014]”, Kolbert reports, “the oceans will absorb two and a half billion tons of carbon, and next year [2015] it is expected that they will absorb another two and a half billion tons”¹². The addition of all this carbon and the acid that it forms with sea water will seriously affect the acidity of the ocean. Ocean pH, which measures ocean alkalinity/acidity, has already dropped from an average of 8.2 to an average of 8.1. That apparently small drop means that the oceans are now on average thirty percent more acidic than they were at the start of the industrial revolution at the beginning of the nineteenth century. If humans continue to pour the same amount of carbon dioxide into the atmosphere and oceans, by the end of the present century the oceans will be on average one hundred and fifty percent more acidic than they were at the start of the industrial revolution. That

¹¹ Wilson. 2016. *Half earth*, 68–69.

¹² Kolbert. 2014. *The sixth extinction*, 114.

level of acidity will be devastating for marine life and, allied to the predicted rise in ocean level from glacier melt, devastating also for coastal regions and their plant and animal, including human, life.

The foregoing evidence, and much more that space does not permit us to detail here, leads Edward Wilson to two conclusions: “first, the Sixth Extinction is under way; and, second, human activity is its driving force”¹³. Human-induced causes of endangerment to or extinction of other species are easily identified. Habitat destruction caused by the logging of forests, which reduces the number of trees to absorb the carbon dioxide produced, as we have already seen, by human activity. Pollution produced by human waste of all kinds that gets into the atmosphere and the waters of rivers and seas, killing many of the species that live in them. Overhunting and overfishing to fill human pots and stomachs that eventually drives the target species to be endangered, like the cod that once teemed in Atlantic fishing grounds and is now reduced by ninety percent, and the great auk that has, as we have seen, been hunted to extinction. The agricultural use of pesticides that kill more than noxious weeds, and the breeding of cattle whose production of methane gas pollutes more than the atmosphere are prime contributors to the sixth extinction.

We cite a notable example now known to every Midwestern American gardener, the eighty percent decline in monarch butterflies, a decline that can be attributed to a sixty percent decline in the milkweed that is the exclusive food of monarch caterpillars. The milkweed is killed by the glyphosate weed killer spread in the abundant corn and soybean fields. Having been genetically modified to withstand the glyphosate, the corn and soybeans flourish, but the unmodified milkweed declines, and so do the monarch caterpillars who feed on it and, eventually, so do the monarch butterflies. This is an example of an unintended negative outcome of an intended positive one. The agriculturalist intends to feed the human population and his action causes the decline and even extinction of other life forms. The same can be said about hunting and fishing. Such unintended species endangerment or extinction can be predicted to increase as the need for food increases as the human population increases to its predicted ten billion by the end of the century.

In 2024, at a conference on climate change at Loyola University of Chicago, Amanda Little, author of an award-winning book on the effects of climate change¹⁴,

¹³ Wilson. 2016. *Half earth*, 55.

¹⁴ Amanda Little. 2021. *The fate of food: What we'll eat in a bigger, hotter, smarter world*. Bourbon, IN: Harmony Press.

reported on a particularly and more personally troubling effect of climate change. “The impacts of climate change on food production”, she said, “are evident everywhere. There are no regions of the world, no types of crops unaffected, and the pressures themselves are inordinately varied”¹⁵. Examples of the effects of climate change on food production are to be seen worldwide. Hotter, drier conditions have wiped out citrus fruits in Florida and peaches in Georgia, and have seriously stressed the avocado and almond crops in California. Drought and wildfires have stressed and threatened the hops in northwest America that are crucial for the production of beer. Extreme weather conditions have led to a decline in the production of olive oil in both Italy and Spain and have also affected their important wine production economies. Global warming has stressed the cocoa bean, crucial in the production of chocolate. We are writing this essay just before Easter and *The Economist* just reported that the price of chocolate Easter eggs has soared due to the doubled price of the scarce cocoa bean, severely stressed by unusually high temperatures and heavy rains in its west African growing area¹⁶.

Global warming has stressed much more than the cocoa bean and has threatened food much more crucial than chocolate. In Ireland, excessive rains have disrupted the harvesting of potatoes, so crucial to the diets of local populations and to the income of local farmers. The situation has raised the specter of the (in)famous nineteenth century Irish potato famine and the starvation and emigration that were its results. These are but a few of the impacts of climate change on food production, which will seriously threaten diets, especially the meager diets of millions of poor throughout the world.

This dire situation has finally garnered international, national, and local attention, though sadly not yet enough concerted action. We have amply shown how very destructive humans are to the ecosystems in which they live. They are, however, also egotistical and self-serving enough, we suggest, to foresee what is to their own benefit, and action on climate change and global warming is certainly to their own benefit and survival and to the benefit and survival of their descendants. Many can be, and have been, altruistic enough to foresee and seek the benefit and survival of the other life-forms that share the planet with them and on which they depend for their own survival. In 2015, representatives of one hundred and seventy

¹⁵ Cited in Brian Roewe. 2024. “Loyola Chicago conference notes gen z’s role in securing food on warming planet”. *National Catholic Reporter Earthbeat*, March 16, <https://www.ncronline.org/earthbeat/loyola-chicago-conference-notes-gen-zs-role-securing-food-warming-planet> (20.09.2024).

¹⁶ *The Economist*. 2024. “Why chocolate is becoming much more expensive”. February 28, <https://www.economist.com/graphic-detail/2024/02/28/why-chocolate-is-becoming-much-more-expensive> (20.09.2024).

five countries met in Paris to discuss climate change and to plan for the financing of the mitigation of its human-produced effects on the planet and its inhabitants. They signed a Paris Climate Agreement, which focuses on the pending disaster that climate change poses for planet earth and its populations. In the same year, 2015, Pope Francis published an important encyclical *Laudato si'*: *On Care for Our Common Home*¹⁷, which leading economist Jeffery Sachs describes as “magnificent—absolutely magnificent. It inspires in its profundity and it speaks to our urgent needs in a very direct way”¹⁸. This encyclical will provide the substance of our reflections in the next section. In 2018, there followed at the Woods Hole Research Center in the United States a meeting of more than five hundred scientists and religious leaders who agreed that climate change “is an ecological and moral emergency that impacts all other aspects of our shared lives and requires us to work together to protect our common home”¹⁹. They urged action to reverse its effects.

2. Theology

We preface our theological reflections on the climate crisis with two facts. The first fact is that Catholic theological reflection on the crisis is most clearly enshrined in Pope Francis’ encyclical *Laudato si'*, and his encyclical will provide the substance of our reflections in this section. The second fact is that there are two widespread and quite distinct theories for the existence of what is called “Nature” in the present scientific world. The first is the ancient Jewish biblical one, namely, that “Nature” and all reality was created by an infinite intelligent craftsman called God; in this theory, “Nature” is called Creation. The second theory is the post-Enlightenment, post-Darwinian scientific one, which teaches that “the craftsman who assembled [Nature] was natural selection, acting upon mutations and recombination of genes, through vast numbers of steps over long periods of time”²⁰. Either “Nature” was created by God in the beginning so that it can also be called God’s Creation, or it evolved naturally over millions of years so that it is a creature of evolution and can

¹⁷ Francis. 2015. *Laudato si'*. https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html (20.09.2024).

¹⁸ Jeffrey Sachs. 2018. “Jeffrey Sachs: on *Laudato si'*”. June 30, <https://www.jeffsachs.org/interviewsandmedia/acmkamck8kafcp4ltft58y9g6d9ab> (20.09.2024).

¹⁹ Brian Roewe. 2018. “Religious leaders, scientists of Massachusetts together declare climate change an emergency”. May 23, <https://www.ncronline.org/earthbeat/religious-leaders-scientists-massachusetts-together-declare-climate-change-emergency> (20.09.2024).

²⁰ Edward O. Wilson. 2002. *The Future of Life*. New York: Knopf, 131.

be called “Nature”. We agree with Wilson that both scientists and theologians are humanists. His humanism is based on science and ours is based on religion, but we both share, and are bound to share, “the earthborn, yet transcendental, obligation”²¹ to care for the planet, whether we name it Creation or Nature. We differ from him, however, in that we have an added layer of meaning in our humanism, a religious layer that holds that Nature is God’s Creation and believes that various convictions of Christian faith enrich and enable today’s ecological conversion. To the consideration of that added layer of meaning we now turn.

Theology, in Anselm’s classic definition, is religious faith seeking understanding. Catholic theology begins with faith in the revelation of God made known in Jesus the Christ and, drawing on the data of four sources, scripture, tradition, science and human experience, it seeks to plumb the depths and understanding of that revelation. A prime ingredient of Catholic faith is that the sacred “scriptures together with sacred tradition [is] the supreme rule of faith”²², and so we begin our reflection on the connection of faith, theology, and climate change with a scriptural consideration. The Book of Genesis gives us an account of a day-by-day creation. On the first day, God created light, on the second day the firmament, on the third day the waters and the dry land, and “called the dry land Earth, and the waters that were gathered together God called Seas” (Gen 1:10). On the fourth day, God created two great lights in the firmament, the sun and the moon, and on the fifth day God created the fish in the waters and the birds in the air, and “the beasts of the earth according to their kind, and the cattle according to their kinds, and everything that creeps upon the ground” (Gen 1:24-25). Finally, on the sixth day, from ‘*adham*’, the dust of the earth, “God created ‘*adham* in [God’s] own image...male and female [humans] he created them” (Gen 1:27). His work finished, God saw everything that God had created, “and behold, it was very good” (Gen 1:31). On the seventh day God rested, *shabat*, giving us both the Sabbath and the biblical requirement to rest on the Sabbath as did God in the beginning.

This scriptural account presents metaphorically Nature that God created as a beautiful garden, in which God put ‘*adham*’, human beings, male and female, and gave them a command: “You may eat freely of every tree of the garden, but of the tree of the knowledge of good and evil you shall not eat” (Gen 2:18). The knowledge of good and evil is essentially God’s knowledge, not to be coveted or usurped by God’s creature ‘*adham*. To every human child, however, both in the beginning

²¹ Edward O. Wilson. 2006. *The Creation: An Appeal to Save Life on Earth*. New York: Norton, 168.

²² Second Vatican Council. 1965. *Dei verbum*, 21. https://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_const_19651118_dei-verbum_en.html (20.09.2024).

and today, the prohibition given them established the forbidden tree as both a fascination and a challenge, and driven by their desire to know as God knows, the first humans succumbed to the challenge and “ate” of the tree of the knowledge of good and evil (Gen 3:6). When God asked our first ancestors why they had eaten the forbidden fruit, they blamed someone else: “The serpent beguiled me and I ate” (Gen 3:13). In the modern world, the excuse is more commonly “The devil made me do it!” In the Catholic theological tradition, the original humans’ “eating” of the fruit of the tree of the knowledge of good and evil, presumed in the myth that grew up around the story to be an apple, is interpreted as the beginning of sin, the original sin, which led to their estrangement from God, from the good and beautiful garden of Creation (Gen 3:24), and ultimately from their own good, both in the beginning and today.

Sin might be the beginning of the human story, but it is not the end of the story of the Creator-God’s relationship to God’s human creatures, for the good news or gospel is that the Creator created yet one more fully human creature by incarnating or enfleshing his own Son. That Son, enfleshed as the man Jesus of Nazareth, Christians believe, is the Messiah or Christ who would heal the estrangement caused by original sin and every modern sin and reconcile God and all God’s human creatures who would believe in him. Jesus, as his earliest followers proclaimed, would “reconcile to himself all things, whether on earth or in heaven, making peace by the blood of his cross” (Col 1:20). That making of peace today in the making of peace between God’s human creatures and God’s Creation-Nature. That peace established by Jesus results ultimately from the conversion of human creatures from exploiting Creation-Nature to loving and caring for it.

‘*Adham*’s “eating” the fruit of the forbidden tree and their banishment from the good garden of Creation-Nature, begins with a mistake God made, if we can be so bold as to talk thus. The charge God gave ‘*adham*’ was “Be fruitful and multiply, and fill the earth and subdue it; and have *radah* over the fish of the sea and over the birds of the air, and over every living thing that moves upon the earth” (Gen 1:28). Fifty years ago, in a now-classic and prophetic article, Lynn White already recognized the ecological crisis we have detailed and explored the interpretations of the Creation stories in Genesis that, he argued correctly, have in large part led to the crisis²³. The Hebrew word *radah* can be interpreted in two senses, a strong sense meaning “subdue, rule over”, and a weaker sense meaning “govern, care for”. The strong sense of *radah* emphasizes humans’ total dominion over creation and justi-

²³ Lynn White. 1967. “The historical roots of our ecological crisis”. *Science* 155/3767 (10 March): 1203–1207.

fies exploitation of it²⁴. This is the sense ‘*adham* has chosen to live by, and we see the consequences of this exploitation in environmental devastation and the current ecological crisis.

In *Laudato si’*, Pope Francis judges that the strong sense of *radah* “has encouraged the unbridled exploitation of nature by painting [humans] as domineering and destructive by nature”²⁵. He adds that the strong sense of *radah* is not its correct Catholic theological interpretation. “The biblical texts are to be read in their context”, he teaches, “with an appropriate hermeneutic, recognizing that they tell us to ‘till and keep’ the garden of the world (cf. *Gen* 2:15). Tilling is the act of ploughing and cultivating, keeping is the act of caring, protecting, and preserving, all of which implies a relationship of mutual responsibility between human beings, ‘*adham*, and Nature”²⁶. The weaker sense of *radah* interprets it as situating humans in relationship with and caring for Creation-Nature, emphasizing “responsible stewardship” over Creation²⁷, though throughout *Laudato si’* Francis prefers the term *care* to the term *stewardship*²⁸. Care is a broader concept than stewardship. It includes humans’ relationship with and care for both Creation-Nature and neighbors, for the vulnerable, for the poor, for health, and for the nobility of all human activity. The scientific evidence we have reviewed that makes clear the damage humans have done to Creation-Nature, the manifold experiences of manifold peoples, and the present calls for correcting past, and lessening future, damage, are calls for the acceptance in action of the weak rather than of the strong interpretation of *radah*. An integrated hermeneutic of the four sources of theological knowledge, scripture, tradition, science, and experience, has anthropological implications for defining human dignity and normative implications for human relationship with Creation-Nature, and it is such an integrated methodological approach that is reflected in *Laudato si’*.

Correctly following the charges of Genesis, humans are to be understood in theological relationship to, not as over above, Creation-Nature. Humans are called to recognize their essential connection to and dependence on Creation-Nature for their everyday life and survival, and they now face experientially the inevitable outcome of not living that dependence. Nothing better illustrates the importance of human na-

²⁴ Daniel J. Harrington, James F. Keenan. 2002. *Jesus and virtue ethics: building bridges between new testament studies and moral theology*. Lanham, MD: Sheed and Ward, 185.

²⁵ *Laudato si’*, 67.

²⁶ *Laudato si’*, 67.

²⁷ *Laudato si’*, 166.

²⁸ Kevin W. Irwin. 2016. *A commentary on laudato si’: examining the background, contributions, implementation, and future of Pope Francis’s encyclical*. New York: Paulist, 119–120.

ture in the crisis than the ancient fable of the scorpion and the frog. A wandering scorpion comes to a river he cannot cross because he cannot swim. He sees a frog basking by the river bank and asks the frog to ferry him across the river. The frog, knowing the venom of the scorpion, is unsure, telling the scorpion he is afraid the scorpion might sting and kill him. The scorpion replies that is not going to happen because, if it did, they would both be drowned. The frog eventually agrees and they start off across the river. When they reach the midpoint of the river, the scorpion stings the frog and they both sink. The frog asks the scorpion why he did such a terrible and foolish thing, and the scorpion replies “Because it is my nature”.

‘*Adham* sinned in the beginning by not heeding the charge not to eat of the tree of knowledge of good and evil, and they continue dangerously to sin by not heeding their own nature and their essential connection to Creation-Nature. Their penalty today is not to be banished from the garden; it is the very extinction of the garden they were charged to care for. What care for the garden of Creation-Nature means today is a concerted effort to address the climate crisis by reducing the greenhouse-gas emissions that are endangering the very survival of the garden and of all the humans that live in it and were charged to care for it. The dignity of all humans, we insist, is facilitated to the extent that they respond to the current climate crisis; it is frustrated to the extent that they do not respond to it²⁹.

Moral conversion, we insist, opens up a pathway also for ecological conversion. Conversion in general is a transformation of the human subject and his perspectives with a consequent change of his life direction³⁰. Ecological conversion is the change from the self-aggrandizement of humans and their dominance of Creation-Nature to their valuing and caring for it. This conversion enables them, first, to see their unjust actions towards Creation-Nature and, then, to change and act towards it justly, reasonably, and responsibly³¹. We emphasize three values that are necessary for the resolution of the ecological problems: the first is the acknowledgement of the common dignity of all persons, including the poor of Creation-Nature whose dignity and value are frequently unthinkingly trampled; the second is the value of all plants

²⁹ For theological reflections on environmental ethics, see Richard W. Miller. 2010. *God, Creation, and Climate Change*. Maryknoll, NY: Orbis; Christina L. H. Traina. 1996. Creating a global discourse in a pluralistic world: strategies from environmental ethics. In *Christian ethics: problems and prospects*. Ed. Lisa Sowle Cahill, James F. Childress, 250–264. Cleveland: Pilgrim Press; William C. French. 2008. “Natural law and ecological responsibility: drawing on the natural law tradition”. *University of St. Thomas Law Journal* 5/1: 12–36; With radical amazement: ecology and the recovery of creation. In *Without nature? A new condition for theology*. Ed. David Albertson, Cabell King, 54–79. New York: Fordham University Press.

³⁰ See Bernard J. F. Lonergan. 1972. *Method in Theology*. New York: Herder, 237–244.

³¹ Robert M. Doran. 2011. “What does Bernard Lonergan mean by ‘conversion’?”. Lecture, University of St. Michael’s College. Toronto, Ontario, Canada, 14; see *Laudato si’*, 123.

and animals that have “value in themselves”³² as God’s Creation-Nature; the third is a healthy interrelationship between all God’s creatures on the planet. Humans, other animals, and plants, and their shared environment are all being negatively impacted by climate change that yields changes in weather patterns that, in turn, impact crop and food production and cause more frequent and more severe storms and rising sea levels that threaten coastal areas and their inhabitants. Mountains of toxic waste, that result from uncaring and uninhibited production and consumerism, are released into water systems, landfills, and seas, causing further environmental pollution. Much of this toxic waste is being shipped to developing countries whose poor citizens are most vulnerable to its devastating health and environmental effects.

“Both everyday experience and scientific research show”, the Bolivian Bishops correctly argue, “that the gravest effects of all attacks on the environment are suffered by the poorest”³³. Moral conversion calls for values and virtues that generate love and care for the dignity of every human being, for all of God’s creatures, for their responsible and healthy connection, and for corrective and preventive measures to protect their environments. We choose at this point to emphasize especially the gospel and theological values of love and care for all our fellow earth creatures, our neighbors (see Matt 22:37-40; Mark 12:30-31; Luke 10:27-28) and justice for all, for “our vital well-being is inextricably linked to the well-being of the whole planet”³⁴. “There is never a situation”, Australian theologian Neil Ormerod comments, “in which the human community can separate itself from the intelligible state of [N]ature”³⁵.

3. Catholic Teaching on the Environment

Two ethical misperceptions have led to the present ecological crisis according to Pope Francis. The first is relativism, a “disorder which drives one person to take advantage of another, to treat others as mere objects”³⁶. This relativism extends to the environment, which humans treat as a mere object to satisfy their own immedi-

³² *Laudato si'*, 33.

³³ Bolivian Bishops’ Conference. 2012. “Pastoral letter on the environment and human development in Bolivia *el universo, don de Dios para la vida*”. 23 March, 17; *Laudato si'*, 48.

³⁴ ³³ Neil Ormerod, Cristina Vanin. 2016. “Ecological conversion: What does it mean?”. *Theological Studies* 77 (3) : 337.

³⁵ 34. Neil Ormerod. 2023. “A hidden ecological dialectic: An oversight in *Insight*”. *Theological Studies* 84 (4) : 620.

³⁶ *Laudato si'*, 123.

ate needs, with no care or concern for the environment itself. Pope Francis emphatically underscores this disregard, declaring that “the earth herself, burdened and laid waste, is among the most abandoned and maltreated of our poor”³⁷. It “is beginning to look more and more like an immense pile of filth”³⁸. The second ethical misperception is a distorted anthropology, what Francis calls a “misguided anthropocentrism” that “leads to a misguided lifestyle”³⁹. For Francis, the distortion is an anthropology that places human beings, rather than Creation-Nature, as the center of reality. He declares that “when human beings place themselves at the center, they give absolute priority to immediate convenience and all else becomes relative”⁴⁰. Everything that does not serve immediate human needs, apparently including parts of Creation-Nature, becomes of secondary importance.

The distortion creates separation not only between humans and “sister earth”⁴¹ but also between humans themselves. In the economic disparities between developed and developing countries and between the rich and the poor; “some consider themselves more human than others, as if they had been born with greater rights”⁴². Such an anthropology violates proper relationships between humans and sister earth, between neighbors, between the rich and the poor, who suffer most from the devastating consequences of climate change. It also denies the proper relationship between humans and their Creator God, which denies that humans are not absolute but creatures created by God and, therefore, inevitably subject to God. The implications of relativism and misguided anthropocentrism lead to ethical norms that disregard the common good and human solidarity and focus only on fulfilling immediate personal desires and needs. To correct these ethical misperceptions, all humans must embrace an anthropology that recognizes that “there can be no [healthy] ecology without an adequate anthropology”⁴³ that embraces an “integral ecology”⁴⁴, and that recognizes that everyone and everything is interrelated and that if one suffers all suffer. In this essay we propose a two-fold approach for analyzing and evaluating the ecological crisis; first, the “see, judge, act” method of Catholic social ethics and, second, a virtuous perspective that begins with ecological conversion.

³⁷ *Laudato si'*, 2.

³⁸ *Laudato si'*, 21.

³⁹ *Laudato si'*, 122.

⁴⁰ *Laudato si'*, 122.

⁴¹ *Laudato si'*, 1, 2, 53.

⁴² *Laudato si'*, 90.

⁴³ *Laudato si'*, 118.

⁴⁴ *Laudato si'*, 137.

The perspective of a faith that sees the essential injustice of the ecological crisis and seeks to reestablish justice aligns well with the pastoral reflection initiated by Pope John XXIII. This perspective asks Christians first to *see* injustice at the root of the ecological crisis, to *judge* that injustice, and to *act* to reestablish justice in light of a solidary creaturehood. To guide us in this method, we propose “ecological virtues”, first and foremost the virtue of ecological conversion. Pope Francis notes that many otherwise prayerful Christians often ridicule concern for the environment and do nothing to change their habits in order to live out their Christian faith consistently. He calls all Christians to “ecological conversion, whereby the effects of encounters with Jesus Christ become evident in our relationship with Creation-Nature around us. Living as protectors of God’s handiwork is essential”, Francis suggests, “to a life of virtue; it is not an optional or a secondary aspect of our Christian experience”⁴⁵.

4. Ecological Conversion

Pope John Paul II introduced the term “ecological conversion” into official Church teaching, intending by the term increased sensitivity to the ecological disaster confronting the planet and its various inhabitants. Pope Francis also focuses on the need for ecological conversion in our relationship with and attitude towards our environment. To understand ecological conversion, we must first understand ecology. The term derives from the Greek *oikos*-home, as in *Laudato si*’s subtitle, *On Care for Our Common Home*, but it has both a narrow biological and a broader theological meaning. Biologically, it designates the interrelationship between all natural organisms, including humans, and their environments. Theologically, it acknowledges the environment as God’s Creation-Nature and calls for humans to care for it, guided by the ecological virtues of gratitude and love for creation, solidarity in and mutual responsibility for our common home, and justice for all who share it, especially for the poor and vulnerable who are always the most damaged when Creation-Nature is in anyway damaged. For Francis, ecological conversion demands a changed recognition that Creation-Nature, the good and beautiful garden of Genesis, is God’s loving gift to ‘*adham* and that ‘*adham* is called to be grateful for it and to imitate God’s generosity by caring for it. Ecological conversion entails an awareness that humans are not disconnected from the rest of creation but are inseparably linked to it in intimate communion. By developing our individual and

⁴⁵ *Laudato si*’, 217.

communal God-given capacities, ecological conversion can inspire us to greater enthusiasm for resolving climate problems.

Conversion, turning away from sin to God, including the sin of exploiting our God-given Creation-Nature garden, is at the very core of Christian theology. Religious conversion is essentially falling in love with God and, in the present ecological crisis, also with God's Creation-Nature, loving it, caring for it, and recognizing and repenting "our errors, sins, faults and failures" against it and the God who created it⁴⁶. Ecological conversion is conversion specifically to God the Creator and to God's Creation-Nature; it is a specific dimension of Christian faith. The ultimate goal, Francis teaches, is to be so converted that "we are not disconnected from the rest of creatures but joined [with them] in a splendid universal communion"⁴⁷. Conversion always reshapes how we see, judge, and act. In the present climate crisis, we must always be aware how easy it is to be distracted from the love of God and God's Creation gift to us by self-love, greed, and the selfish use of Creation-Nature for our own exclusive benefit.

The Catholic Church has an abysmal historical record of integrating scientific knowledge into its understanding of Creation-Nature. We need only look to its seventeenth-century condemnation of Galileo for defending Copernicus' heliocentric model of the solar system or to its nineteenth-century rejection of science in Pius IX's *Syllabus of Errors*⁴⁸. More recently, a greater respect for science has been promoted by Popes John Paul II and Francis. John Paul highlights the need for intense dialogue between science and theology. Theology and science, he teaches, must enter into a "common interactive relationship" in which each discipline is "open to the discoveries and insights of the other"⁴⁹. Francis advocates "an intense dialogue between science and religion"⁵⁰. *Laudato si*'s use of science in its exploration of environmental questions is unprecedented in Catholic Church documents. Specifically, drawing on the data of climate science, which we detailed in the opening section of this essay, it presents a harsh but accurate indictment of the current situation, which it describes as a "throwaway culture" that is turning the earth into a pile of "rubbish"⁵¹.

⁴⁶ *Laudato si*', 218.

⁴⁷ *Laudato si*', 220.

⁴⁸ Pius IX. 1864. *Syllabus of errors*, 57, <https://www.papalencyclicals.net/pius09/p9syll.htm> (20.09.2024).

⁴⁹ See John Paul II. 1988. "The relationship of science and theology: A letter to Jesuit father George Coyne". *Origins* 18 (23) : 375–378.

⁵⁰ *Laudato si*', 62.

⁵¹ *Laudato si*', 22.

The scientific evidence we considered for climate change, global warming, ice melt, ocean rise and acidification, is undeniable. Religious and ecological conversions, we suggest, give us the insight and courage to ask difficult questions about our relationship with our environment. When addressing environmental ethics in general, and climate change in specific, ethical method may select all four sources of ethical knowledge and prioritize them in the following order, science, experience, tradition, and scripture. This prioritization of the sources is not a general ranking of their importance but a ranking of their importance for the particular issue of ecological ethics.

Ethical method must consult science to reach a scientifically informed understanding of the actual and projected threat of climate change. There is indisputable scientific evidence that climate change is occurring, that the actions of humans significantly contribute to it, and that, if nothing is done to address it in the near future, the consequences for humanity, again especially for the poor, will be catastrophic. Extreme weather patterns, famine, geographical displacement, and national and international violence will all increase. Experience confirms the scientific evidence: widespread drought, famine, and starvation throughout Africa; drought, wildfires, and an increase in the number and severity of tornadoes and hurricanes in North America; more severe flooding in Europe and Asia. All these events point to climate change already occurring and its devastating impact on millions of people. Science, however, Pope Francis notes, cannot provide a complete explanation of life; it must be complemented with other sources of ethical knowledge⁵². Scientific evidence and widespread human experience both affirm the teaching of recent Popes that climate change and global warming are real and call for the international community, especially wealthier nations that can really make substantial reduction in greenhouse-gas emissions, to work towards reducing these emissions. The Pontifical Academy of Sciences called on all people to recognize the serious and potentially irreversible impacts of global warming caused by emissions of greenhouse gases and other pollutants, and by changes in forests, wetlands, and grasslands. It appealed to all nations to develop and implement, without delay, effective policies to reduce the causes and impacts of climate change on ecosystems and human communities. By acting now, the Academy said, in the spirit of shared responsibility, we accept our duty to one another and to the care of our planet.

Moral conversion opens a virtuous pathway for ecological conversion. The change from immoral greed and self-satisfaction to moral solidarity, objective val-

⁵² *Laudato si'*, 199.

ue, and care for all enables us, first, to see injustice in the present approach to climate change and, then, to act to redress it. A major value that must be in play in ecological conversion is the human dignity of each and every person created by God; a second is the value of each and every plant and animal created by God; all, Francis rightfully teaches, have “value in themselves”⁵³; a third, and presently needed value, is a healthy interrelationship between them all. Humans, other animals, plants, and their shared environments are all being negatively impacted by climate change that yields changes in weather patterns that, in turn, impact crop and food production and cause more frequent and more severe storms and rising sea levels. Both scientific research and everyday experience show that the direst effects on the environment are suffered by the world’s poorest. Moral conversion calls for virtues like love and care for every human being, especially the poor and vulnerable, for all of God’s creatures, for their responsible and healthy interrelationship, and for corrective and preventive measures to protect their environments. We choose at this point to highlight the gospel virtues of love and justice for all our neighbors, for it is experientially clear that the well-being of humans is inextricably linked to the well-being of the whole planet.

Focusing on the virtue of care, *Laudato si’* addresses the need to protect and preserve vital values, especially the human dignity of the poor who suffer the most from any environmental damage. The twin assaults on climate change and vital human values allied to the environmental pollution, cause numerous health hazards and millions of premature deaths across the world. They also cause, as we have seen, the extinction of millions of plants and large and small animals on which the entire ecosystem depends for life⁵⁴. “Because all creatures are connected, each must be cherished with love and respect, for all of us as living creatures are dependent on one another”⁵⁵. When this connection is threatened, as it is currently threatened by human greed and neglect that lead to global warming and climate change, humans can attempt to compensate for the imbalance through science and technology, but historical experience shows that these interventions often bring their own negative effects on climate. A just response to protect vital values must be two-fold. Humans must immediately cease their assault on the earth with pollution and toxic waste and they must allow it to heal with scientific solutions that do not further destabilize an already unstable ecosystem. This requires national and international cooperation and planning to address very complex issues.

⁵³ *Laudato si’*, 33.

⁵⁴ *Laudato si’*, 36

⁵⁵ *Laudato si’*, 42.

Social values, like the good order of whole communities, take precedence over any individualistic values of members within the community. This is the common good argument of Catholic social thought, “the sum of those conditions of social life which allow social groups and their individual members relatively thorough and ready access to their own fulfillment”⁵⁶. Francis declares climate to be “a common good, belonging to all and meant for all”⁵⁷. Shared and respected human dignity is foundational to the common good, but it can be realized fully only in relationships that put restraints on what any individual can demand of the community. The realization of social values requires the prioritization of community over individualistic values or desires. Too often, as for instance in the United States, individualism shapes culture and promotes a distorted prioritization of individual over community.

This distorted prioritization of individual over community, individual greed and profit over societal sustainability and preservation, is a major contribution to the ecological crisis we now face. The economy, and those who have the power to shape it, “accepts every advance in technology with a view to profit, without concern for its potentially negative impact on human beings”⁵⁸. The prioritization of profit, and those who benefit from profit, over the common good and the protection of the environment, demands moral conversion. Such conversion, in turn, demands “profound changes in lifestyles, models of production and consumption, and the established structures of power which today govern societies”⁵⁹. There must be moral conversion socially, politically, individually. Each individual human being is called to embrace a simpler lifestyle in the manner of St. Francis of Assisi, for whom “less is more”, or in the manner of Mahatma Ghandi, who famously invited women and men to “live simply so that others can simply live”. Every violation of solidarity and civic friendship harms the environment. In this sense, “social ecology is necessarily institutional, and gradually extends to the whole of society, from the primary social group, the family, to the wider local, national and international communities”⁶⁰.

The virtues guiding the common good include solidarity and justice, the “firm will to give their due to God and neighbor” and, we add, to God’s Creation-Nature in which all neighbors live. All are called to be in solidarity with both sister

⁵⁶ Second Vatican Council. 1965. *Gaudium et spes*, 26, https://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_const_19651207_gaudium-et-spes_en.html (20.09.2024); *Laudato si’*, 156.

⁵⁷ *Laudato si’*, 23.

⁵⁸ *Laudato si’*, 109.

⁵⁹ *Laudato si’*, 5.

⁶⁰ *Laudato si’*, 142.

earth, which Pope Francis rightly declares to be “among the most abandoned and maltreated of our poor”⁶¹, and the actual poor throughout the world who are suffering most from the devastating effects of climate change and who suffer the injustice of a prior unjust distribution of the world’s goods. Christians are all aware of their summons by Jesus’ great commandment to “love the Lord your God with all your heart, and with all your soul, and with all your mind, and with all your strength” and to “love your neighbor as yourself” (Mark 12:30-32). In the present climate situation, one way to love God concretely and effectively, we suggest, is to love and care for His Creation-Nature; and one way to love our neighbors as ourselves concretely is to love and care for our common *oikos*-home. The principle of subsidiarity prescribes that those of a higher order should allow those of a lower order their proper functions and that those who have should support those who have not, always with a view to the common good. The climate crisis we have been discussing is a clear case in which the less powerful societies among the nations of the earth are more helpless and desperately need the help and empowerment of the more powerful societies to resolve it. It is also a clear case for the conversion of the unjust social structures that are controlled by political and economic elites⁶².

Another way in which every individual can concretely and effectively exercise solidarity and subsidiarity is by pressuring institutions, like local, national, and international schools and businesses, to divest from technologies and fossil fuels that are known to harm the environment. Local, national, and international institutions can and must implement and support regulations that, first, protect and, then, heal our environment. Contrary to the obvious common good, Francis judges that “many of those who possess more resources and economic or political power seem mostly to be concerned with masking the problems or concealing their symptoms”⁶³. Virtuous leaders create virtuous communities. Jewish communities are created and sustained by virtuous prophets like Moses; Islamic communities are sustained by the virtuous Muhammad; Buddhist communities are created and sustained by the virtuous Buddha; Christian communities are created and sustained by the virtuous Jesus the Christ.

Modern culture tends towards the denial of the existence of any divine ground of being, meaning, and value. Christians who are religiously converted, however, who have fallen in love with God, believe divine meanings and values are incar-

⁶¹ *Laudato si'*, 2.

⁶² *Laudato si'*, 196.

⁶³ *Laudato si'*, 26.

nated in Jesus whom they confess to be the Christ and Son of God, and whom they profess to follow. The meanings and values embodied in him, they believe, are to be embodied also in them. For Christians, therefore, the search for meaning, value, and direction in life, and therefore for the protection and healing of Creation-Nature is simple: follow Jesus, “the way, the truth, and the life” (John 14:6). When human beings place themselves at the center of reality, Pope Francis teaches, “they give absolute priority to immediate convenience and all else becomes relative. Hence, we should not be surprised to find the rise of a relativism which sees everything as irrelevant unless it serves one’s own immediate interests”⁶⁴. When Christians, we teach, imitate the meanings and values embodied in Jesus, they are living by meanings and values more than sufficient to resolve every human crisis, anthropological, ecological, or ethical. A virtue “is a stable, character state, habit, or disposition that enables us to feel, understand, judge, and act” according to that habit⁶⁵. The virtue of justice is ordered to acts of justice, the virtue of love is ordered to acts of love, the virtue of solidarity is ordered to acts of interdependence and common good⁶⁶, ecological virtue is ordered to acts of respect for and care for our *oikos*-home. The one virtue that should characterize Christians, namely, faith in Jesus, leads to the conviction that following him in all things will enable them to resolve every human crisis. “Only by cultivating sound Christian virtues”, Francis asserts, “will people be able to make a selfless ecological commitment”⁶⁷. This is not to be interpreted as meaning that only Christians have virtues that can heal the climate crisis. Many people, religious and non-religious alike, share the virtues we have enumerated throughout this essay as helping to heal the present climate crisis.

Among the virtues that comprise a virtuous ecological perspective we name especially prudence, responsibility, courage, care, faith, hope, love, solidarity, subsidiarity, and reconciliation, all of which pervade *Laudato si’*. Though we have focused on ecological and religious conversions to address the ecological crisis, Pope Francis has recourse to other virtues that complement ecological conversion and highlight the radical response that individuals and local, national, and

⁶⁴ *Laudato si’*, 122.

⁶⁵ Todd A. Salzman, Michael G. Lawler. 2018. *Virtue and theological ethics: Toward a renewed ethical method*. Maryknoll, NY: Orbis Press, 7.

⁶⁶ See Pope John Paul II. 1987. *Sollicitudo rei socialis*, 26, 38–40, https://www.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_30121987_sollicitudo-rei-socialis.html (20.09.2024). In this encyclical, John Paul establishes the virtue of solidarity as an essential part of the Catholic social tradition; see also John Paul II. 1991. *Centesimus annus*. https://www.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_01051991_centesimus-annus.html (20.09.2024).

⁶⁷ *Laudato si’*, 211.

international communities must take to address the climate crisis. Among them is “the recognition that God created the world, writing into it an order and a dynamism that human beings have no right to ignore”. We read in the Gospel, he continues, “that Jesus says of the birds of the air that ‘not one of them is forgotten before God’ (Lk 12:6). How then can we possibly mistreat them or cause them harm?” He concludes his encyclical with a heartfelt plea: “I ask all Christians to recognize and to live fully this dimension of their conversion. In this way, we will help nurture that sublime fraternity with all creation which Saint Francis of Assisi [his revered namesake] so radiantly embodied”⁶⁸. We ask not only all Christians but also all virtuous women and men of whatever persuasion to embrace this Creation-Nature fraternity to heal the devastating damage already done and foreseen yet to come to it.

Those of us who live in the United States have witnessed deliberate assaults on Creation-Nature and a serious lack of political protection for it. We have seen the deregulation of laws by the Environmental Protection Agency and Trump administration budget cuts to NASA’s Carbon Monitoring System, which seeks to improve the ability to monitor global carbon emissions. This exemplifies and verifies Pope Francis’ judgment that “politics and business have been slow to react in a way commensurate with the urgency of the challenges facing our world” and that the “post-industrial period may well be remembered as one of the most irresponsible in history”⁶⁹. President Trump’s unilateral withdrawal from the Paris Climate Agreement, making it during his administration the only country in the world not to adhere to the Agreement, indicates, we judge, a serious lack of commitment to address climate change and its world-wide impacts. Such willful and short-sighted disregard for the science that demonstrates the reality of climate change calls for not only intellectual conversion to see the overwhelming scientific evidence for humanly caused climate change but also, indeed even more so, for moral conversion and commitment to act responsibly on the evidence. The virtues of solidarity, justice, and neighborly love can all facilitate that process.

Reading the signs of the times, *Laudato si’* recognizes the ecological crisis, noting that an excessive anthropocentrism has created a distorted understanding of the relationship between humans and Creation-Nature. Pope Francis fundamentally challenges this distorted anthropology and the severed relationship between the anthropological and cosmological cultures. He posits a corrective to *dominion* as

⁶⁸ *Laudato si’*, 221.

⁶⁹ *Laudato si’*, 165.

control over and exploitation of the earth to *dominion* as responsible government of and loving care for Creation-Nature. Ecological conversion and care for our creation-home facilitate a recognition of the interdependence of humans and Creation-Nature and reestablish the severed connection between anthropological and cosmological cultures. Such revision creates a cultural and ecological perspective that provides “a distinctive way of looking at things, a way of thinking, policies, an educational program, a lifestyle and a spirituality which together generate resistance to the assault of the technocratic paradigm”⁷⁰. This revised perspective, we have suggested, is grounded in the virtues of prudence, humility, solidarity, responsibility, and care. “Only by cultivating sound virtues”, Francis asserts, “will people be able to make a selfless ecological commitment”⁷¹.

5. Conclusion

In this essay, we have laid out the evidence for climate change, its devastating effect on Creation-Nature and on all who dwell in it, human and non-human alike. The change includes global atmospheric warming, ice melting and rising seas, sea warming and acidification, and geographic erosion that can no longer be denied by any rational being. We have also laid out a variety of anthropological and ethical principles for the ecological conversion of humans, who are clearly a major cause of the climate crisis.

Though we have insisted that the followers and imitators of Jesus the Christ, Christians, are religiously and virtuously equipped to respond to and reverse the climate crisis, we are by no means to be understood as arguing that *only* Christians can contribute to ecological conversion and to the rescue of the planet from extinction. We are in complete agreement with Edward Wilson that humanists also can respond to the crisis and that both he and we and our respective colleagues are all humanists. His humanism is based on science and ours is based on religion, but we both share, indeed are bound to share, “the earthborn, yet transcendental, obligation”⁷² to care for the planet, whether we name it Creation or Nature. We have insisted, and will continue to insist, that various convictions of Christian faith enrich the meaning of ecological conversion. These include the awareness of the dignity of every human being, just recently reaffirmed strongly by the Dicastery for the Doctrine of the

⁷⁰ *Laudato si'*, 111.

⁷¹ *Laudato si'*, 211.

⁷² Wilson. 2006. *The creation*, 168.

Faith⁷³, and of the fact that every natural creature reflects something of the image of God and conveys to us the message that God is intimately present to it and in it. There is also the recognition that God created the entire world and all that is in it, writing into it an order and a dynamism that human beings have no right to ignore. The article challenges all humans of good will, be they Christians, Jews, Muslims, Atheists, or whatever, to a new paradigm of justice “which respects our unique place as human beings in this world and our relationship”⁷⁴ to all our co-creatures in the surrounding Creation-Nature.

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⁷³ Dicastery for the Doctrine of the Faith. 2024. *Dignitatis infinita: On human dignity*. Rome: Typis Polyglottis Vaticanis.

⁷⁴ *Laudato si'*, 15.

- John Paul II. 1987. *Sollicitudo rei socialis*, https://www.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_30121987_sollicitudo-rei-socialis.html (20.09.2024).
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Abstract: Two-time Pulitzer Prize winner for his books on the dire threat of climate change, Harvard Professor of Biology, Edward Wilson, judges that “for the first time in history a conviction has developed among those who can actually think more than a decade ahead that we are playing a global end game”. In this essay, we seek to show that the global end game to which Wilson refers and which we will name ecological crisis demonstrate that humans and Nature are not separated, indeed cannot be separated, and that it is the human attempt to separate them that has generated the ecological crisis. We first lay out the details of climate change and then offer some theological suggestions to alter the end game and reverse and heal climate change.

Keywords: Climate change, Conversion, Ecological crisis, Edward Wilson, *Laudato si'*, Pope Francis.

Streszczenie: Zmiany klimatyczne i jej skutki: refleksje teologiczne. Edward Wilson, dwukrotny zdobywca nagrody Pulitzera za swoje książki na temat tragicznego zagrożenia zmianami klimatycznymi, profesor biologii z Harvardu, ocenia, że „po raz pierwszy w historii wśród tych, którzy potrafią myśleć z wyprzedzeniem większym niż dekada, rozwinęło się przekonanie, że gramy w globalną grę końcową”. Autorzy niniejszego eseju wykazują, że globalna gra końcowa, do której odnosi się Wilson i którą nazywamy kryzysem ekologicznym, pokazuje, że ludzie i Natura nie są oddzieleni, a nawet nie mogą być oddzieleni, i że to ludzka próba ich rozdzielenia doprowadziła do kryzysu ekologicznego. Tekst najpierw przedstawia szczegóły zmian klimatycznych, a następnie proponuje kilka teologicznych sugestii, aby zmienić końcową grę oraz odwrócić i uzdrowić zmiany klimatyczne.

Słowa kluczowe: zmiany klimatyczne, nawrócenie, kryzys ekologiczny, Edward Wilson, *Laudato si'*, papież Franciszek.