



“That They May Be One”:

Biological, Ethical and Spiritual Significance in the Web of Life

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EXPERIENCE

It is no longer possible to deny that our planet is under enormous stress.

As Pope Francis lamented in 2015, the earth “cries out to us because of the harm we have inflicted on her by our irresponsible use and abuse of the goods with which God has endowed her. We have come to see ourselves as her lords and masters, entitled to plunder her at will. ... The earth herself, burdened and laid waste, is among the most abandoned and maltreated of our poor; she ‘groans in travail’” (*Laudato Si’*, 2). According to the World Wildlife Fund’s *Living Planet Report*, 1.5 planets would be needed to sustain the world’s average rate of consumption, and if U.S. levels of consumption were maintained globally, four planets would be required.¹

The harm our human tendency toward domination and consumption has imposed on the earth and its ecosystems is problematic not only because all creatures are intrinsically valuable, but also because all creatures are interconnected in a complex “web of life.” Biodiversity is the term given to “the variety of life on Earth, in all its forms and all its interactions. ... Biodiversity is the most complex feature of our planet and it is the most vital.”² Human beings, one part of this web of life, depend on thriving biodiversity for everything from food and fuel to medicines and climate stability.



As Damian Carrington, Environment Editor for *The Guardian*, puts it,

The air you breathe, the water you drink and the food you eat all ultimately rely on biodiversity. Some examples are obvious: without plants there would be no oxygen and without bees to pollinate there would be no fruit or nuts. Others are less obvious – coral reefs and mangrove swamps provide invaluable protection from cyclones and tsunamis for those living on coasts, while trees can absorb air pollution in urban areas. Others appear bizarre – tropical tortoises and spider monkeys seemingly have little to do with maintaining a stable climate. But the dense, hardwood trees that are most effective in removing carbon dioxide from the atmosphere rely on their

seeds being dispersed by these large fruit-eaters.³

Biodiversity offers medicinal resources (such as a cancer-fighting fungi that grows on the fur of sloths), economic benefits (services provided by ecosystems are estimated to be worth trillions of dollars), and, of course, aesthetic value.⁴



Sadly, the number of animals living on the planet has fallen by 40% since 1970.⁵ Human activity wreaks havoc on habitats and ecosystems, destroying the intricate balance of the web of life. In our quest for “progress and prosperity,” we pump millions of tons of carbon into the air annually,⁶ spill oil into waterways and oceans,⁷ and allow plastics to permeate the food chain.⁸ Air pollution causes 7 million premature human deaths each year;⁹ at least 1000 species every year become extinct (compared to the 1-5 species annually that would become extinct naturally);¹⁰ and human-made structures such as border walls, highways, and oil and natural gas extraction systems destroy ecosystems and inhibit animal migration flows.¹¹ The omnipresent use of plastic is also problematic since 79% of the 6.3 billion tons of plastic waste generated annually by human beings is not recycled and ends up cluttering the earth and our oceans, harming wildlife and ecosystems.¹²

ANALYSIS

According to the National Center for Biotechnology Information (NCBI), “The proximate causes of biodiversity loss are biological, but the root causes of the problem include sociological and economic processes that operate on a global scale. A thorough understanding of the phenomenon will require the investigation and elucidation of both biological and social components.”¹³ For example, children in low-income urban neighborhoods contract asthma at much higher rates than their wealthy counterparts because permits for factories with high emission levels often are reserved for “unsightly” areas;¹⁴ droughts and floods resulting from climate change destroy the livelihoods of subsistence farmers in underdeveloped nations, although developed nations are responsible for the vast majority of emissions;¹⁵ and, finally, low-income, developing nations have experienced the sharpest decline in animal populations.¹⁶

This illuminates the importance of Pope Francis’s message: “It is essential to seek comprehensive solutions which consider the interactions within natural systems themselves and with social systems. We are faced not with two separate crises, one environmental and the other social, but rather with one complex crisis which is both social and environmental. Strategies for a solution demand an integrated approach to combating poverty, restoring dignity to the excluded, and at the same time protecting nature.”¹⁷

Haiti: A Case Study

Haiti was once a French colony with a thriving economy – although that measure is deceptive since its economy was built on the backs of slaves. By the end of the 18th century, French plantation owners had imported nearly 800,000 Africans to Haiti to provide labor for their coffee and sugar export industries.¹⁸ The system of slavery in Haiti was violent and deadly, and it was considered one of the cruelest in the Americas.¹⁹

In 1791, a successful slave uprising set the colony on the path to independence, which it achieved totally

in 1804. When the leaders of Haiti announced their nation's hard-won independence, however, the rest of the world "was largely unprepared to accept it."²⁰ The United States, for example, refused to recognize Haiti's autonomy for sixty years, due largely to its own economy's dependence on slave labor and fear that the Haitian people's example might inspire slaves in the U.S.²¹

This isolation started Haiti on a downward trajectory. Subsequent trade and financial agreements were heavily weighted against Haiti and placed it at a detriment, with no diplomatic recourse since Haiti was not recognized as an independent trade partner.²² For example, in the 1824 Franco-Haitian Agreement, France required Haiti to pay approximately \$22 billion (adjusted) in reparations to its former colonizer, in exchange for France's recognition of independence. Approximately 80% of Haiti's revenues over the next century went toward this debt,²³ rather than toward development initiatives such as industrialization, education, and political institutions.²⁴

Currently, Haiti is the financially poorest country in the Western Hemisphere, with a poverty rate of nearly 60%.²⁵ It is, however, one of the biologically richest nations in the West Indies: "There are nearly 6,000 plant species, some of which can only be found in Haiti. There are also nine life zones, including deserts, cloud forests, mountain ranges, rivers, and streams."²⁶ Haiti is also one of the most vulnerable countries in the world to climate change. Unfortunately, political instability, poverty, and environmental degradation exacerbate each other in a cyclical effect. Environmental degradation has far-reaching and dire consequences for the nation,²⁷ and programs meant to mitigate these consequences are largely unsuccessful without a strong government.²⁸

Many Haitians turn to subsistence farming or engage in the woodfuel industry, both of which require clearing trees. To date, 42 of Haiti's 50 largest mountains have lost all of their primary forest.²⁹ Deforestation is the main threat to species globally, and the majority of earth's biodiversity is found in tropical forests like Haiti's.³⁰

With widespread deforestation comes the loss of myriad animal species, along with "flooding, dramatic rates of soil erosion, and subsequent declines in agricultural productivity."³¹ Deforestation also "reduces the country's ability to absorb the effects of extreme weather events and manifestations of climate change, which is expected to result in reduced water resources, increased soil erosion and the intensification of coastal erosion and coastal ecosystem degradation."³² Natural disasters, to which Haiti is more susceptible than most Caribbean nations,³³ wreak havoc on the land and communities that are not equipped to respond to the challenges, thus intensifying food and water shortages, destroying social systems and structures, and decimating the ecology of Haiti.³⁴ It is estimated that "during the next few decades, many Haitian species of plants and animals will become extinct because the forests where they live, which originally covered the entire country, are nearly gone."³⁵



For Haiti to respond to these crises, there must be an approach that "reconciles Haitian people with their environment and satisfies their present needs without compromising the well-being of future generations" or exacerbating present struggles.³⁶ This approach also should include a commitment to dialogue and sustainable, asset-building assistance from the developed nations that bear much responsibility for Haiti's underdevelopment. However, we always must remember and affirm that, in the words of Ben Edwards of USAID, "perhaps the strongest asset is the country's people. It is the Haitians themselves who are making progress toward reconstruction. Despite the daunting challenges ... Haitians may, in fact, prove to be the most resilient people on earth."³⁷ Without

such an approach, the biological riches of Haiti will continue to be exploited as a repercussion of its legacy of human exploitation.



REFLECTION

It should not surprise us that in this web of life, environmental abuse is tied to social injustice. In Genesis, we read that the original sin was motivated by the urge to “be like gods” and a desire to possess what God had not given to human beings (*Gen. 3*). In other words, as Saint Augustine would say, a lust for domination is at the root of all sin.³⁸ We can see this clearly in the maltreatment of our earth and its vulnerable inhabitants – human and non-human, alike.

We also read in Genesis that human beings, whose bodies are formed from the same earth as plants and animals, are made in God’s image (*Gen. 1-2*); and in the Gospels, Jesus prays “that they may all be one, just as you, Father, are in me, and I in you, that they also may be in us” (*John 17:21*). We are made in the image of the Triune God, who is, simply, Love. Therefore, human beings are fundamentally relational. It is not only humans who reflect this Trinitarian relationality, however; the whole of creation is a function of God’s love. Biodiversity is thus not simply a fact of nature, but a beautiful expression of God’s unity-in-diversity. All of creation is interconnected – the diverse elements intimately related to one another in a unified whole that witnesses to the Creator, is incarnated by Christ, and is imbued with the Spirit’s love. As Pope Francis

writes, “The divine Persons are subsistent relations, and the world, created according to the divine model, is a web of relationships. Creatures tend towards God, and in turn it is proper to every living being to tend towards other things, so that throughout the universe we can find any number of constant and secretly interwoven relationships. This leads us not only to marvel at the manifold connections existing among creatures, but also to discover a key to our own fulfilment.”³⁹

Our faith thus describes justice as *shalom*, or right relations, and calls us to eschew our tendency to dominate by embracing our interdependency. True justice must come from humility that acknowledges the dependent nature of human beings on others and on Christ, and takes that dependency to be part of the essential dignity of human beings.⁴⁰ We are always dependent upon God and others, and to facilitate authentic justice – to participate in “the Kingdom Come” – we must embrace our own dependency and respond appropriately to the awareness that others are dependent upon us in this web of life. Augustine scholar Jean Bethke Elshtain explains this well when she writes, “One’s dependence on others is not a diminution but an enrichment of self. ... That is what the ethic of *caritas* is about – not moralistic self-abnegation but an abundant overflowing of the fullness of life.”⁴¹ Christ is incarnate so that we “may have life, and have it to the full” (*John 10:10*), but this fullness of life can be experienced only when we recognize the ties of dependency and work to strengthen those bonds in humility.

Let us, then, develop a commitment to solidarity with all of creation – from plundered forests, to endangered species, to vulnerable people – recognizing that our own dignity is wrapped up in the fulfillment of theirs, for everything is interconnected by the Spirit in the web of life. In the words of Pope Francis, “Everything is interconnected, and this invites us to develop a spirituality of that global solidarity which flows from the mystery of the Trinity.”⁴²

**"We are called to be instruments of God ... so that our planet might be what [God] desired when [God] created it and correspond with [God's] plan for peace, beauty and fullness."
– *Laudato Si'*, 53**

ACTION

Please join the School Sisters of Notre Dame by participating in some of the following actions, as we "educate, advocate, and act, in collaboration with others, for the dignity of life and the care of all creation."⁴³

1. Celebrate the Season of Creation, September 1 – October 4. The AMSSND Water Committee invites you to use their reflection resource to become more attuned to God in all of creation. Make a commitment to live more sustainably – eat less meat, walk or ride your bike when possible, and refuse single-use plastics like plastic bags and straws. Visit <http://seasonofcreation.org> for more Season of Creation resources; visit <https://www.un.org/sustainabledevelopment/takeaction/> for ideas on sustainable living.
 - a. As we watch [wildfires blaze through the Amazon rainforests](#), which produce 20% of Earth's oxygen, we should remember that "one of the many ecological challenges facing the Amazon is the destruction of the rainforest to provide land for animal grazing. This is fueled by the growing demand for meat" (Sisters of Mercy). Participating in [Mercy Meatless Mondays](#) is a way to act on our belief that we are all connected.
2. Please consider [supporting the AMSSND Haiti Water Initiative](#), which provides water catchment systems to Haitian families in desperate need of a clean and sustainable water source. Learn more by visiting <https://atlanticmidwest.org/posts/haiti-water-initiative-program>.
3. View and reflect on this photo essay in *The Guardian*: "[Wildlife numbers plunge by 50% since 1970](#)."
4. Contact your representatives and the White House to protest [the current administration's widespread rollbacks of environmental protections](#), including [its weakening of the Endangered Species Act](#). Encourage them to enact policies that protect the earth and vulnerable species and people.
5. Pray for the exploited earth and its vulnerable creatures. Recommended: "[A prayer for our earth](#)" (Pope Francis, *Laudato Si'*).

¹ WWF, "[Living Planet Report 2018: Aiming Higher](#)."

² Damian Carrington, "[What Is Biodiversity and Why Does It Matter to Us?](#)," *The Guardian*.

³ Ibid.

⁴ Ibid.

⁵ Damian Carrington, "[Earth Has Lost Half of Its Wildlife in the Past 40 Years, Says WWF](#)," *The Guardian*.

⁶ Center for Climate and Energy Solutions, "[Global Emissions](#)."

⁷ International Tanker Owners Pollution Federation Limited (ITOPF), "[Oil Tanker Spill Statistics 2018](#)."

⁸ Simon Reddy, "[Plastic Pollution Affects Sea Life Throughout the Ocean](#)," Pew Charitable Trusts.

⁹ World Health Organization, "[Air Pollution](#)."

¹⁰ Earth Day Network, "[Fact Sheet: Global Species Decline](#)."

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- ¹¹ Cf. Ibid.; Robert Peters, et. al, "[Nature Divided, Scientists United: US-Mexico Border Wall Threatens Biodiversity and Binational Conservation](#)," *BioScience*; WWF, "[Oil and Gas Development](#)."
- ¹² Earth Day Network, "[Plastic Pollution Primer and Action Toolkit: End Plastic Pollution, Earth Day 2018](#)."
- ¹³ National Center for Biotechnology Information (NCBI), U.S. National Library of Medicine, "[Conserving Biodiversity: A Research Agenda for Development Agencies](#)."
- ¹⁴ Cheryl Katz, "[People in Poor Neighborhoods Breathe More Hazardous Particles](#)," *Scientific American*.
- ¹⁵ Alejandra Borunda, "[Inequality is decreasing between countries—but climate change is slowing progress](#)," *National Geographic*.
- ¹⁶ Carrington, "[Earth Has Lost Half of Its Wildlife in the Past 40 Years, Says WWF](#)," *The Guardian*.
- ¹⁷ *Laudato Si'*, 139.
- ¹⁸ [UN Educational, Scientific and Cultural Organization](#)
- ¹⁹ Ibid.
- ²⁰ Ibid.
- ²¹ Ann Crawford-Roberts, "[A History of United States Policy Towards Haiti](#)," *Modern Latin America: Web Supplement for 8th Edition*, Brown University Library.
- ²² U.S. Department of State, Office of the Historian, "[U.S. Invasion and Occupation of Haiti, 1915–34](#)."
- ²³ Council on Foreign Relations, "[Haiti's Troubled Path to Development](#)."
- ²⁴ Ibid.
- ²⁵ Congressional Research Service, "[Haiti's Political and Economic Conditions](#)."
- ²⁶ Restavek Freedom, "[10 Animals Native to Haiti](#)."
- ²⁷ [USAID](#)
- ²⁸ William Wheeler, "[Cholera and Cooperation Play Into Haiti Reforestation](#)," *National Geographic*.
- ²⁹ *Science Daily*, "[Animal species becoming extinct in Haiti as deforestation nearly complete](#)."
- ³⁰ Ibid.
- ³¹ [USAID](#)
- ³² [Global Security](#)
- ³³ Council on Foreign Relations, "[Haiti's Troubled Path to Development](#)."
- ³⁴ [USAID](#)
- ³⁵ Bryan Walsh, "[Wildlife: Amid the Ruins of Haiti, Conservationists Find Endangered Frogs](#)," *TIME*.
- ³⁶ [Convention on Biological Diversity](#)
- ³⁷ Ben Edwards, "[The Most Resilient People on Earth: Haiti Still Standing After Trio of Disasters](#)," *USAID*.
- ³⁸ Augustine, *City of God*, XIV.13.
- ³⁹ *Laudato Si'*, 240.
- ⁴⁰ Augustine, *City of God*, XIV.13.
- ⁴¹ Elshtain, *Augustine and the Limits of Politics*, 36.
- ⁴² *Laudato Si'*, 240.
- ⁴³ [School Sisters of Notre Dame, 24th Directional Statement](#)