



# Orthodox Christian Teaching on Eco-theology, Psychological and Legal Facets, and the Crisis of Microplastic Pollution in the World's Oceans

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## Abstract

Microplastic pollution constitutes one of the most inescapable and tenacious threats to marine ecosystems, with profound consequences for biodiversity, food security, and human health. Scientific research has established that microplastics are disseminated throughout ocean systems - from surface waters to deep-sea sediments - where they disturb ecological processes and bioaccumulate within marine food webs. Despite the growing body of empirical evidence, responses to microplastic pollution persist as inadequate, suggesting that the crisis is not simply technical but especially ethical and cultural in nature. This article employs an eco-theological framework to examine microplastic pollution as both an environmental and a moral and ethical failure. Drawing on contemporary marine science and theological ethics, the paper argues that microplastic pollution reflects a breakdown in humanity's understanding of creation, stewardship, and interconnectedness. Eco-theology offers a normative lens that affirms the intrinsic value of creation, highlights environmental justice concerns, and motivates transformative action. Ocean pollution is significant and poses serious threats to human health and well-being and is distressful to most people causing psychological disturbance in some cases. Marine pollution in South Africa raises serious legal issues despite a strong regulatory framework. From a legal perspective, using South Africa as an example, the country is party to international instruments. Domestic laws are however fragmented and lead to jurisdictional gaps and blurred institutional accountability. Proving liability and obtaining compensation is problematic. Marine pollution also threatens constitutional environmental rights under section 24 of the Constitution. From a legal perspective, this study argues that South African law and Orthodox Christianity embody corresponding forms of social capital. The former being institutional and rights-based, the latter relational and ecclesial. Collectively, they offer different but intersecting responses to notions of societal care. When viewed through the lens of social capital, South African law and Orthodox Christianity emerge as individual yet complementary reactions to societal care. The law seeks to institutionalize dignity and inclusion through rights-based mechanisms, while Orthodox ecclesial life fosters relational



networks of care grounded in faith and communion. In a society such as South Africa, marked by disparity and social division, the interaction between these frameworks propositions a richer and more holistic reaction to social strain than either could supply alone.

By integrating scientific analysis, psychological impacts, legal stances and theological reflection, this interdisciplinary study contributes to environmental ethics scholarship and underscores the relevance of eco-theology in addressing the global crisis of ocean degradation. The Eastern Orthodox Church approaches ecological concerns not as a secular afterthought, but as an integral expression of its faith, worship, and understanding of creation. For Orthodoxy, ecology is grounded in theology, the liturgical life, and a holistic Christian vision of humanity's vocation within God's Creation. According to the Church's teaching, care for the natural world is rooted in Creation as a gift from God, the Eucharistic and ascetic ethos of the Church, and the moral transformation of the human heart. This article also explores these themes, showing how the Orthodox Church tradition situates ecological responsibility within its core doctrine and spiritual practices.

**Keywords:** Theology; eco-theology; pollution; microplastic contamination; marine ecosystems; environmental ethics; ocean stewardship.

## Introduction

The world's oceans comprise one of Earth's most vital life-support systems. They control climate, produce almost half of the planet's oxygen through phytoplankton activity, and sustain the multifaceted food webs that sustain billions of people. Yet, these massive and lively ecosystems are progressively threatened by anthropogenic pollution, predominantly plastic waste. Among the most sinister forms of this pollution are microplastics, the plastic particles smaller than five mms which now permeate virtually all marine environments (Rodríguez-Barreras & López-Nieves, 2024). Beyond the conventional <5 mm definition, the microplastic size spectrum is increasingly treated as a continuum that overlaps with nanoplastics (<1 µm), which may display different transport dynamics, tissue translocation potential, and toxicological mechanisms (Muñiz & Rahman, 2025). Contemporary reviews emphasise that particle behaviour in seawater depends not only on size but also on polymer density, shape (fibres vs fragments), ageing state, and surface chemistry, all of which influence sinking, resuspension, and biological encounter rates across pelagic and benthic habitats (Chubarenko et al., 2016; Shamskhany et al., 2021). These distinctions matter because studies reporting "microplastic effects" may be comparing fundamentally different particle classes and exposure scenarios, complicating cross-study synthesis and also risk inferences.

Marine scientists have documented the omnipresence of microplastics across oceanic areas, including surface waters, coastal zones, polar seas, and also in deep-sea sediments (The Abundance of Microplastics in the World's Oceans, 2024). These findings contest long-held assumptions about the oceans' ability to absorb human waste without causing permanent damage. While scientific research has been instrumental in recognizing the scale, sources, and impacts of microplastic pollution, technical knowledge alone has not translated into adequate behavioural transformation or policy improvement. Plastic production endures to rise, and waste management systems continue to be inadequate in many regions (Geyer et al., 2017).

The ongoing crisis of microplastic pollution cannot be addressed exclusively through scientific or technological means. Rather, it points to a far deeper ethical and cultural failure that fashions how societies relate to the natural world. This article contends that microplastic pollution characterizes not only an ecological crisis but also a deep theological one. Eco-



theology is an interdisciplinary field that brings theological reflection into the discourse with ecological realities and it offers a critical framework for investigating the moral and ethical magnitude of ocean pollution and for articulating more accountable methods of human engagement with fragile marine ecosystems. Ojeifo (2025) asserts that we need to be “thinking about integral ecology in terms of the theology and ethics of place. The conviction is that integral ecology is not a speculative task, but a form of engagement and a praxis. It is an invitation to enter into a specific location, to be rooted in a place, to touch and feel the energies of life present in the place, and to make that place the centre of one’s way of being in the world”.

## **Methods**

The inquiry proceeded through a qualitative methodology grounded in a systematic literature review. This methodology was warranted by the topic's inherently conceptual, philosophical, and theological dimensions, which require rigorous engagement with older sources and contemporaneous scholarly discourse. A literature-centred approach allowed a critical examination, analysis, and synthesis of disparate texts, thereby permitting the construction of a comprehensive and firmly anchored set of arguments in the relevant study area. The investigation was in part grounded in foundational texts with an Orthodox Church theological slant. The study consulted various secondary data sources, principally scholarly publications—peer-reviewed journals, and topical articles—that engage with the theme of eco-theology and microplastic pollution. Prominence was placed on recent and authoritative works, specifically those addressing the issue of microplastic pollution. Data acquisition was thus conducted through a systematic literature review, surveying relevant works published up to the present. Content-analysis techniques, were employed during the ensuing analysis. This analytical procedure unfolded in a series of distinct but interconnected stages.

## **The Scientific Extent of Microplastic Pollution in Marine Environments**

### ***Sources and Pathways of Microplastics and the Distribution and Ecological Impacts***

Microplastics are found in primary and secondary sources. Primary microplastics are deliberately manufactured at microscopic sizes for use in industrial abrasives, some personal care products, and in synthetic textiles. Secondary microplastics result from the fragmentation of larger plastic debris as found in bottles, bags, and also fishing gear, mainly through exposure to ultraviolet radiation, mechanical abrasion, and chemical degradation (Maddison & Rellán, 2025). These particles go into marine environments through several pathways, including river discharges, wastewater effluent, urban runoffs, uncaring coastal tourism, unethical maritime industries, and atmospheric deposits (Environmental Science and Pollution Research, 2025). Once they are present in ocean systems, microplastics persevere for protracted periods due to their resistance to biodegradation. Their small size permits them to be transported across enormous distances by currents, winds, and a range of biological processes. This then results in worldwide distribution even in highly remote marine regions. In the South African context, recent synthesis work indicates that microplastics are documented across freshwater, terrestrial and marine compartments, including urban water systems and coastal sediments, with reported concentrations varying widely by matrix and method (Mokgalaka-Fleischmann et al., 2024). This national evidence base underscores that microplastic pollution is not only a distant “global ocean” issue but also a proximate governance and environmental justice challenge, particularly where infrastructure constraints, variable municipal performance, and uneven monitoring capacity shape exposure pathways and management outcomes.



Current systematic reviews confirm that microplastics are extant in all key ocean basins, though concentrations differ by region and depth (The Abundance of Microplastics in the World's Oceans, 2024). Microplastics have been detected not only at the ocean surface but also within deep-sea sediments and fragile coral reef structures, indicating that no marine habitat is resistant from any contamination. Coastal “blue carbon” systems can function as microplastic sinks, with mangroves in particular retaining plastics through complex root structures and reduced hydrodynamic flushing that promote particle trapping and sedimentation (Gonçalves et al., 2025). This has implications for ecosystem functioning because retained plastics can persist in depositional environments, interact with benthic biota, and potentially become remobilised during storms or disturbance events (Govender et al., 2020). Recognising these retention hotspots strengthens ecological interpretations of “where plastics accumulate” and helps connect pollution patterns to habitat structure and coastal management priorities. Marine organisms ingest microplastics either directly, mistaking them for prey, or indirectly through trophic transfer. Studies have documented ingestion across multiple trophic levels, including plankton, molluscs, fish, seabirds, and marine mammals (Barnes et al., 2009; Blue Biotechnology, 2024). Ingestion can lead to physical damage, reduced feeding efficacy, inflammation, and reduced reproduction. In addition, microplastics act as paths for toxic chemicals which are able to leach into organisms’ tissues and bioaccumulate through food webs (Thompson et al., 2009). Reliable microplastic identification requires polymer confirmation, commonly via spectroscopic techniques such as  $\mu$ FTIR and Raman spectroscopy, especially where particles are small, weathered, or pigment-rich. Raman approaches are valued for high spatial resolution and the ability to characterise very small particles, but recent reviews caution that pigments, additives, fluorescence and spectral interferences can bias interpretation unless reference libraries, spectral pre-processing, and confirmatory workflows are transparently reported (Umurhan et al., 2025). Incorporating these analytical considerations is essential when interpreting occurrence patterns, reported polymer profiles, and purported biological effects across the literature

### ***Inferences for Human Health***

The occurrence of microplastics in commercially important seafood species raises important concerns for human health. Recent human-health reviews converge on the conclusion that exposure is plausible via ingestion and inhalation, and that mechanistic pathways of harm may involve oxidative stress, inflammatory signalling and cellular dysfunction; however, they also emphasise that causal evidence in humans remains limited and heavily dependent on analytical certainty and exposure characterisation (Sadique et al., 2025). Accordingly, the most scientifically defensible framing is precautionary: the weight of evidence supports reducing exposure and emissions while research strengthens standardisation, toxicokinetics, and dose-response understanding across particle types (including nanoplastics) (Vogel et al., 2024). While research on long-term health effects is enduring, existing evidence advocates potential risks associated with chemical toxicity, oxidative stress, and inflammatory responses (Environmental Systems Research, 2024). These findings highlight the interrelation between ecological and human well-being and stress the ethical extents of environmental degradation.

### **Eco-theological Foundations - Creation as being Inherently Valuable**

Eco-theology arises from the acknowledgement that ecological crises advance fundamental theological questions about creation, the purpose of humans human, and moral accountability. Orthodox and all Christian theology has played a vital role in articulating ethical responses to environmental degradation (Chryssavgis, 2009). A core principle of eco-theology is the affirmation that creation possesses intrinsic value independent of its usefulness to humans. Biblical creation narratives continually pronounce the natural world as being “good,” accentuating its value separately from human manipulation. Such a theological pronouncement contests anthropocentric worldviews that diminish nature to a mere resource



for economic gain at any cost (Moltmann, 1985). When it is applied to marine ecosystems, this perspective insists that oceans and marine life have moral significance beyond their instrumental value for food, transport, or commercial purposes. The degradation of oceanic ecosystems through microplastic pollution represents a massive defilement of creation's intrinsic worth.

### **Stewardship and Moral Obligation – the Interconnectedness of Life**

The notion of stewardship is fundamental to eco-theological ethics. Stewardship highlights humanity's part as caretaker rather than as an owner of the Earth. This role requires accountability and limits for the long-term consequences of human actions (Hitzhusen, 2007). Microplastic pollution discloses a failure of stewardship at both the individual and systemic levels. Plastics intended for short-term convenience persist in ecosystems for many centuries, bringing with them immense ecological costs on future generations and non-human species. From an eco-theological standpoint, such practices challenge the moral and ethical obligations implied by stewardship. Eco-theology stresses the interrelationship of all life forms. Ecological science similarly describes oceans as coupled physical–biological systems in which pollutants propagate through transport processes (currents, resuspension, settling) and biological pathways (selective feeding, trophic transfer, habitat-mediated retention) (Muñiz & Rahman, 2025). Microplastics make this interdependence visible: particles introduced through everyday consumption can move from catchments to coasts, accumulate in sediments and structured habitats, and enter food webs at multiple trophic levels, linking human behaviour to ecosystem function in measurable ways. This scientific account of connectivity strengthens the theological claim that harm to creation is never isolated but relational and cascading. This theological insight reverberates strongly with ecological sciences, which all establish the complex interdependence of marine species and fragile ecosystems. Microplastic pollution illustrates how outwardly minor actions—such as disposing of plastic waste—can have cascading effects throughout ecological systems (Rodríguez-Barreras & López-Nieves, 2024). This relational understanding challenges ethical frameworks that detach human interests from broader ecological concerns. Harm inflicted upon the oceans naturally and inevitably reverberates through human communities, predominantly those contingent on marine resources for subsistence and livelihoods.

### **Microplastic Pollution as Moral and Theological Failure**

Viewed from an eco-theological stance, microplastic pollution characterizes more than an inadvertent environmental side-effect; it clearly reflects far deeper moral failures entrenched within our contemporary ill-managed socio-economic systems. The speedy development of plastic production since the mid-twentieth century has been motivated by economic models that prioritize efficiency, convenience, and profit at all and any costs, over ecological sustainability (Geyer et al., 2017; Nicolaidis, 2025). Theological ethics often employs the concept of structural or communal sin to designate harmful practices rooted within social and economic systems that are defective. Microplastic pollution typifies such systemic harm. Individual consumers may contribute unknowingly to pollution, yet the cumulative effects are devastating and multi-generationally long-lasting. Eco-theology construes this as a moral fiasco that transcends individual resolve and incriminates institutional structures and cultural norms that are defective.

### **Environmental Justice and Vulnerability, Ecological Conversion, Praxis in Education and Community Formation**

The issue of continuous microplastic pollution advances substantial apprehensions regarding environmental justice. Coastal and island communities with often very limited responsibility for plastic production, recurrently bear disproportionate ecological and economic burdens due to



polluted waters and decreasing fisheries (Marine Microplastic Pollution and Misinformation, 2024). Eco-theological ethics accentuate anxiety for the susceptible environments and peoples, and call our consideration to the unequal distribution of environmental problems faced in many communities globally. Harakas (1992: 216) states that “The creation itself speaks of God to those who will listen”.

In all theological traditions, an act of true repentance comprises more than mere remorse; it necessitates a fundamental redirection of values and ethical conduct. Eco-theology frames ecological penitence as a progression of ecological conversion—transformative change in how societies produce, consume, and dispose of their material goods. Addressing the pressing issue of microplastic pollution consequently necessitates both personal moral transformation and more importantly, needed systemic reform. Eco-theology insists that ethical reflection must always lead to sound praxis. All faith communities have substantial potential to inspire positive environmental attitudes and behaviours through carefully crafted education, support, and total community engagement. All religious institutions can foster ecological knowledge by assimilating environmental education into their theological training, sermons, and in community programmes. By framing microplastic pollution as a moral and ethical issue, faith communities would be able to nurture a sense of accountability and cohesion with affected ecosystems and their inhabitants.

### **Sustainable Practices and Policy Advocacy**

When viewed from a practical level, eco-theological praxis supports reducing plastic consumption drastically, promoting the use of reusable resources, and encouraging crafting of novel policies that control plastic manufacture and improve waste management initiatives. All religious organizations, not on Christian one’s can and must model sustainable practices and partake in the public discourse on environmental governance (Francis, 2015). By integrating scientific understanding with ethical accountability, eco-theology offers an all-inclusive method to addressing the severe microplastic pollution threat posed. Such an method must recognise that any technological solutions must be accompanied by sound ethical transformation and moral praxis, if truly meaningful and permanent change is going to transpire.

### **The Psychological effect of Ocean Pollution on Mental Health**

Imagine strolling along a beautiful beach, the sound of waves soothing your mind, and the fresh sea breeze lifting your spirits. Now, picture the same beach littered with plastic waste and the water tainted with pollutants. If one were to take a walk on a polluted beach with a 12 years old child, seeing the filthy beach can have a significant psychological impact on the child, who is at a stage of developing moral consciousness and abstract thinking. The child may experience revulsion, sadness, or even anger, especially if the beach was expected to be a safe and pleasurable place to visit. Such exposure can challenge their trust in adults and society, as they begin to question why the environment is not protected. Repeated exposure without explanation may lead to eco-anxiety, hopelessness, or normalization of pollution. However, with calm adult guidance, the experience can foster environmental awareness, empathy, and a sense of responsibility. Validation of emotions and truthful explanations help regulate distress. Providing opportunities for positive action also supports resilience and offer at least a sense of some control. Overall, adult framing determines whether the experience is psychologically harmful or developmentally constructive.

Equally, for an older person, seeing a filthy beach can also have immense psychological effects, though shaped by life experience and established beliefs. It may induce sadness, frustration, or anger linked to apparent social decline or environmental abandonment. Older



individuals may experience moral outrage or grief for lost natural beauty, sometimes accompanied by a sense of helplessness if they feel change is beyond their control. Unlike children, they are less likely to feel fear, but repeated exposure can lead to greater cynicism or even emotional numbing. Past memories of cleaner environments can intensify the sense of loss. These are examples to be avoided through all sharing in caring for nature. Environmental factors can thus also affect our mental health in how they impact us psychologically. One's environment might raise or lower one's stress levels, for instance.

Our oceans are essential for our planet's health and our mental wellbeing. Ocean pollution not only harms marine life but also affects our mental health, causing anxiety, stress, and a sense of loss. We can work together to protect our oceans and nurture a healthier, happier world for everyone by understanding the connection between a healthy ocean and our mental state. Ocean pollution is a growing issue that affects every part of our seas. Various sources contribute to this problem, including plastic waste, chemicals, and oil spills. These pollutants harm marine life, disrupt ecosystems, and degrade the natural beauty of our beaches and oceans. The sight of litter-strewn shores and polluted waters is not just an environmental concern but also a significant emotional burden for many people. Landrigan, et al., (2020) assert that "Ocean pollution is a global problem. It arises from multiple sources and crosses national boundaries. It is worsening and in most countries poorly controlled. More than 80% arises from land-based sources."

The impact of ocean pollution extends beyond environmental damage. People living near polluted waters often experience anxiety, stress, and a sense of hopelessness. Seeing a once-pristine beach covered in rubbish can be deeply distressing. For those who depend on the ocean for their livelihood, such as fishermen and tourism workers, pollution adds economic strain, leading to increased stress and anxiety. The psychological effects can be profound, affecting both mental health and community well-being (Carasso et al. 2025).

The spaces where you live and work have a profound impact on your mental wellness, from your stress levels to your overall mood. How, exactly? The environment-mental health connection is complex, but in many cases, environmental factors impact mental wellness by changing brain structure and function.

Exposure to different environments can physically affect the neural pathways in the brain that are related to cognitive function, mood regulation, and stress. Seeing familiar coastal areas covered in waste can evoke feelings of sadness and frustration. The degradation of these natural spaces often leads to a sense of loss and mourning. Many find solace by the sea, so when these areas are polluted, it increases stress and anxiety. The sight of wildlife harmed by pollution, like sea turtles entangled in plastic, adds to this distress.

Pollution poses a direct threat to the economic stability of fishermen and tourism operators. Declining fish populations due to contaminated waters lead to reduced catches, affecting income and food security. Polluted beaches deter tourists, causing economic downturns in communities reliant on tourism. This economic strain translates into heightened stress and anxiety about the future. Fleming et al., (2019) state that our oceans are indispensable to human health and a sense of well-being and in essence they are essential for the very survival of vulnerable populations who are even more contingent on the health of the seas.

In many coastal communities, the ocean is integral to cultural practices and identity. Pollution disrupts traditional activities like fishing and beach ceremonies, leading to a loss of cultural heritage and identity. The younger generation may feel disconnected from their cultural roots, contributing to feelings of alienation and sadness. In a study entitled "A systematic review of the mental health risks and resilience among pollution-exposed adolescents", conducted by



Theron et al., (2021), the review outcomes submit that any air and water pollution exposure is harmful to adolescents' mental health, and is connected with the presence of elevated symptoms of depression, general anxiety, psychosis, and/or disruptive impulse control and conduct disorders (ScienceDirect, 2022).

Pollution affects livelihoods and cultural practices, leading to social tensions and reduced cohesion. Communities once closely knit around shared activities may experience increased conflict and fragmentation. This breakdown in social cohesion can exacerbate feelings of isolation and stress. Contaminated water causes health problems like skin irritations and respiratory issues. These physical health issues increase stress and anxiety, creating a cycle where physical and mental health problems reinforce each other (Carasso et al. 2025; Steg, et al., 2014). Concern for health further adds to the mental burden on individuals and communities. Emotional distress also results when people see polluted waterways or pollution in general, their feelings may include shame, embarrassment, anger, discontent, desperateness and promote a sense of helplessness (Mayer & Frantz, 2004; Sharma & Navita, 2025; Landrigan, et al., 2020).

Concepts like environmental identity (seeing nature as part of oneself) and moral responsibility play crucial roles in inspiring ocean care. Education that balances awareness with hope decreases eco-anxiety and increases pro-environmental deeds. Social norms and role modelling are also influential and when communities visibly care for the ocean, individuals are more likely to do the same. In due course, effective ocean conservation depends not only on laws and technology, but on deep understanding and the shaping of human psychology (Steg, et al., 2014).

People tend to protect what they feel connected to, so what is needed are experiences that create wonder, empathy, and personal attachment to the ocean (through inter alia, storytelling, first-hand experiences, visuals of recovery, not just damage) and this strengthens environmental identity. People must know that their actions matter and that social norms require caring – thus stressing that most people care and act responsibly in beach clean-ups, reduced plastic use, etc. (Sharma & Navita, 2025). There must be care, fairness, and responsibility towards future generations, rather than inducing embarrassment, which often causes defensiveness or repudiation of a wrong that has been perpetrated. Lowering psychological barriers is central and can be done through simple acts such as waste sorting, placing anti-litter beach signage and of course, an increase in follow-through and reinforcement of positive habits (Kerse & Kerse, 2025).

We should remember that early experiences shape one's lifelong attitudes. Age-appropriate education that emphasizes care, problem-solving, and stewardship tends to build long-term pro-ocean behaviour. Adults must role-model desired behaviours and influence and strengthen social learning and a sense of collective responsibility. Revelling in clean beaches, wildlife recovery, and community success all strengthen motivation and counter a sense of helplessness. People tend to change behaviour when they feel a sense of belonging and connection and are capable and supported—not when they feel responsible or overawed. (Sharma & Navita, 2025). Shaping human psychology around marine pollution is in the end about transforming concern about marine pollution into collective accountability and continuous positive action.

### **Legal Issues and Considerations on South African Law on Societal Care**

The nation's legal agenda for addressing pollution is anchored in section 24 of the Constitution of the Republic of South Africa, 1996. Section 24 particularly pledges the right to an environment that is not harmful to human health and positively mandates the state to adorn



itself with reasonable legislative and other measures to avert pollution and severe ecological degradation. This constitutionally entrenched obligation is of utmost importance with specific regard to the maritime and marine environmental context, considering that South Africa boasts a coastline of over 3000km with a huge exclusive economic zone. This coastline is fundamental to not only food security but to biodiversity protection and economic development.

The provisions of the National Environmental Management Act 107 of 1998 (NEMA) give further efficacy to this fundamental human right. NEMA advocates for environmental principles pertaining to sustainable development, such principles include the precautionary and polluter-pays principles. Section 28 of imposes a generalised duty of care on any person whose activities directly cause or possibly could cause pollution and subsequent environmental degradation. Such a duty is highly relevant especially in attempting to reduce the various forms of pollution in the natural environment especially microplastic pollution. These various forms of pollution have arisen, not overnight, but due to continual and systemic failures in waste control and maritime regulation.

Microplastic pollution, particularly, has appeared as a noteworthy global environmental concern. In South Africa especially factors such as, exponential population growth, rapid urbanization, economic mismanagement, and poor or the complete lack of infrastructure aggravate the issue. This threatens terrestrial, aquatic ecosystems and marginalised communities as a whole (Yakubu et al., 2024).

South Africa's constitutional democracy is firmly grounded in a commitment to social justice, dignity, and the protection of susceptible persons through legally enforceable socio-economic rights. Orthodox Christianity, by contrast, considers societal care through ecclesial characteristics, highlighting *diakonia* (service), philanthropy, and communal obligation as illustrations of faith. When assessed through the lens of social capital theory, these two frameworks reveal convergence and also conflict on the issue of how societies react to social tension.

When speaking of social capital this generally refers to the associations, norms, and relationships that permit collaboration for mutual advantage. Bourdieu (1986) conceptualizes social capital as resources entrenched in robust social networks, while Putnam (2000) differentiates between bonding social capital, which reinforces internal group solidarity, and bridging social capital, which links diverse social groups. Such a difference is specifically useful when comparing legal and ecclesial responses to social tension. South African law principally seeks to build bridging social capital through inclusive institutions and universal rights, whereas Orthodox Christianity principally generates bonding social capital through adherence to a liturgical life, a parish community solidarity, and communal moral commitments.

The South African Constitution embeds socio-economic rights such as access to basic housing, healthcare provision, food, water, and social security. These rights force positive obligations on the state to address issues of poverty and inequality through acceptable legislative and policy actions (Heyns & Brand, 1998; Liebenberg, 2002). Courts have established that these rights are necessary to rebuild dignity in a profoundly unequal society designed by apartheid. There are intellectuals who refer to South Africa's constitutional framework as being transformative, seeking not only to avoid harm but to vigorously restructure society (Liebenberg, 2014). In this sense, the law functions as an instrument for producing institutional social capital with trust in public institutions, shared norms of citizenship, and collective accountability for social welfare. Judicial decisions such as the decision in *Government of the Republic of South Africa and Others v Grootboom and Others* (2000) demonstrate how the state is anticipated to give precedence to those in desperate need, thus strengthening social cohesion through legal accountability.



Nonetheless, there are certain critics note that legal frameworks alone cannot secure effective care. Weak performance, resource limitations, and bureaucratic gaps can weaken trust, limiting the law's capacity to generate significant social capital at the community level (de Beer & Vettori, 2017). This gap stresses the importance of complementary social institutions.

Orthodox Christianity approaches societal care issues through a theological vision focussed on communion, devotion, and caring service. *Diakonia* is understood not merely as benevolent activity, but as involvement in the life of Jesus Christ and the renewal of human relationships (Vantsos & Kiroudi, 2007). Care for the poor and marginalized is therefore deeply attached to Orthodox ecclesial identity. Unlike legal systems in place, Orthodox social teachings do not express a comprehensive policy doctrine. Instead, it underscores a need for personal transformation and communal responsibility, promoted through worship, fasting, almsgiving, and pastoral care. Modern Orthodox reflection, as communicated in *For the Life of the World*, establishes the Church's commitment to respond to injustice and social suffering while challenging ideological reductionism (Morariu, 2021).

From a social capital vantage point, Orthodox ecclesial life creates strong bonding social capital. Parish networks engender trust, communal aid, and mutual moral norms, often allowing rapid and personal reactions to need. In the African setting, including Southern Africa, diaconal practice demonstrates that it plays a substantial role in focusing on poverty and social weakness at the basic level (Tetty & Nel, 2020).

Despite their contrasts, South African law and Orthodox Christianity come together in their underlying unease regarding human dignity and communal responsibility. Both reject radical individualism and acknowledge that care for the helpless is a joint obligation. Where the law stresses enforceable rights and institutional delivery, Orthodoxy highlights a need for moral duty and social commitment. Seen together, these approaches correspond as complementary approaches when it comes to social capital. Legal frameworks give bridging capital, confirming inclusion and at least the bare minimum standards of care across society. Ecclesial communities present bonding capital, sustaining trust, cohesion, and moral incentive at the local level. The interface between these characteristics can improve societal strength in settings of deep social tension. South African law functions through forced authority and public accountability, while Orthodox Christianity is dependent on unpaid obligation and spiritual development. Furthermore, the Church's averseness to suggest specific policy solutions can limit its influence in public discourse, even as it addresses needs directly (Nordstokke, n.d.). However, these distinctions need not indicate disagreement. Significantly, they highlight the value of diverse reactions to social strain, where the legal systems and religious communities tackle individual components of human need.

### **The Orthodox Ecumenical Patriarch Bartholomew on Pollution - Creation viewed as a Sacred Gift**

Inseparable from Divine Providence is the preservation of all Creation (Frangpoulos, 1999). Holy Scripture and also Holy Tradition proclaim the Truth in Orthodoxy, according to which God the Creator intervenes to sustain the world, which does not remove the power of the laws of nature. Also nature pursues the intervention of the Creator so that it does not fall into disorder (*ataxia*) or extinction (Lampadarios, 2006). The Universe is not a mere mechanical artwork but rather a living organism receiving life form God, but a branch that is cut off from a tree invariably withers and then dies and in the same manner the earth cannot exist without Divine Providence (Lampadarios, 2006; Engleman, 1995; Cavarnos, 1975).

Orthodox theology sustains the idea that the world was created and this was "very good" (Genesis 1:31) and it should not be recklessly exploited, but rather be viewed as a sacramental truth that reveals the presence of the Creator. In Orthodoxy, creation replicates the exquisiteness and goodness of God, and this goodness has ethical inferences as to the



manner in which humans relate to the natural world (Sereti, 2018; Patton, 2007). The fear of the Lord is the beginning of wisdom (Proverbs 9:10). Thus, a person's first step in his or her spiritual growth is know where they stand in the grand scheme of Creation. Man is not his own Creator or the source of his very being, and is definitely not self-sufficient. God created man to be the crown of creation and gave him huge honour, and man is created in God's image to live with Him throughout eternity. Man is called to live a life in which he seeks the attainment of the likeness of the Holy Trinity and to be in a relationship of love with fellow human beings- this is what he was created for. He must also be in a relationship of love with the natural world and not love it as an end in itself, but as part of his relationship with God (Lossky, 1976; Yannaras, 1984). Man is created to be the crown and glory of Creation. Consequently, he is never to abuse it and consider it to be a disposable commodity. Nature was created to serve mankind and man must respect it in a sacramental relationship.

St. Gregory Palamas informs us that:

Man was deemed worthy by God of such honour and providential care that before him this entire sensible world came into being for his sake, and before him right from the foundation of the world the kingdom of heaven was prepared for his sake, and counsel concerning him was taken beforehand, and he was formed by the hand of God and according to the image of God (St. Gregory Palamas, One hundred and Fifty Chapters).

The Ecumenical Patriarch Bartholomew has recurrently expressed the view that the ecological crisis has its origins not chiefly in economics or politics, but rather in the human heart where a deep spiritual and moral crisis is unfolding (Bartholomew quoted in Basilica.ro, 2016). In addition Orthodoxy's Eucharistic theology accentuates that Creation is offered back to God in the Divine Liturgy, which signifies that the world is meant to be thankfully received by those who inhabit it, and not egotistically exploited (Basilica.ro, 2018; Patriarch Bartholomew, 2006). Importantly, Patriarch Bartholomew was the primary foremost Christian leader to describe the devastation of the natural environment as a "sin" (Chryssavgis, 2009). He also contends that attacking the natural environment is a reflection of an inner spiritual and moral turmoil and it is basically a "denial of society" (Iliina, 2022). The Patriarch endorses the need for an all-inclusive integral ecology that underscores the interconnectedness between caring for the natural environment and the promotion of a needed social justice in a world plagued by a lack of serious attention to either (Patriarch Bartholomew, 2006). He also commonly highlights that the ecological crisis unreasonably distresses the poor and vulnerable in society (Iliev, 2023). We should note that the earth "is never fully place without God as co-inhabitant" (Bartholomew, C.G., 2011). Ethically speaking, neither this nor any other has the right to exploit the natural environment without restriction- and there is a level of use which soon becomes abuse if not checked and humanity has an obligation to continually care for the earth and protect and conserve it (Harakas, 1992; Nicolaidis, 2025).

The Patriarch's vision is entrenched in sound Orthodox spiritual practices, explicitly in one demonstrating an abstemious attitude of self-control and a sound eucharistic character. He propositions that an appropriate eucharistic theology must encompass sharing God's gifts and it must provoke action against any and all exploitative practices, and is often described as the "liturgy after the Liturgy" (Patriarch Bartholomew, 2006; 2012; Patton, 2007). He also stresses that individuals are called to be astute stewards and ministers of Creation, not only its owners or unprincipled abusers. The fundamental message he spreads is that the environmental crisis is primarily one brought about by a deep spiritual and moral calamity, necessitating a "radical change in our mentality and values" and not only some token technological or political resolutions (Iliev, 2023; Chryssavgis, 2009; Patton, 2007).



Our ecological apprehensions are not something new supplementing the Orthodox faith, but instead they are and should be a natural extension of the Church's life as an "applied ecology." (Patriarch Bartholomew, 2006). In his message for the Day of Protection of the Environment, he noted that the Church's liturgical and sacramental life exemplifies an idea of a creation of care (Chryssavgis, 2009). Essentially, "The life of the Orthodox Church is applied ecology, a tangible and inviolable respect for the natural environment." (Basilica.ro, 2018). One of the Orthodox Church's most extensively quoted documents on marine care is the *Declaration by Ecumenical Patriarch Bartholomew* issued on the eve of World Oceans Day. He correctly associated the health of the oceans with human existence and climatic equilibrium, noting that the oceans provide us with oxygen, absorb carbon dioxide, and sustain biodiversity and so far they are continually endangered by mindless human activities.

He has explicitly stated that humans continually pollute and overfish the seas, impairing their life and yield. He has made numerous calls on humanity to "stop pollution so that the seas can recover from poisoning and from life-choking nutrients produced by our cities and farms and industries." He also argues that protecting the fragile oceans is undertaking God's work and harming them is in fact diminishing God's creation and highly destructive for humanity and all life forms (Patton, 2007) At the 9th International "Our Ocean" Conference (which focused on issues of marine waste and policy), Patriarch Bartholomew underlined the importance of averting more ocean pollution and degradation and he stressed the vital role of having healthy oceans – for needed oxygen production, climate stability, and biodiversity protection (Chryssavgis, 2009). He stated it is mandatory to have well-crafted and effective environmental policy and regulations to protect increasingly fragile marine ecosystems. The Any environmental destruction, including marine pollution, as both immoral and demonstrates a distressing spiritual failure.

Treating any part of the natural environment badly and over-exploiting is a sin against God, including the incessant contamination of maritime waters and fragile ocean ecosystems (Chryssavgis, 2009). Such activities reinforce the message that *care for water and seas* isn't merely conceptual but involves real worldly action. In a World Council of Churches context, the Patriarch emphasized that water is sacred and not a private commodity. He stressed that the pollution of water — land, rivers, or sea — is both an *environmental and social justice problem*. Solutions must include avoiding waste and harmful practices (e.g., plastic pollution) (Patriarch Bartholomew, 2012; Morariu, 2021). Thus the idea is that the reckless pollution of oceans and waters is an ethically unacceptable act within Orthodox teaching which must be stopped.

### **Ecology as a Eucharistic and Ecclesial Space**

Eco-theology is a highly distinctive component of Orthodoxy in its profound Eucharistic alignment. The bread and wine offered during the Divine Liturgy which includes the fruits of the earth and human labour, essentially signifies the entire Cosmos being presented back to God the Creator. This liturgical presentation designates that Creation is not in any way external to the spiritual life but rather has its place at the very heart of the Orthodox Church's worship (OrthodoxResearchInstitute.org, 2025).

Orthodox instruction holds that there is no stringent contrast between spirit and matter. The material world partakes in salvation because Christ took on a human nature and consecrated matter through His glorious incarnation. St. John of Damascus sustains this argument in his writings, and he positions that matter itself was made worthy of veneration because "Christ became matter" (OrthodoxKorea.org, 2019). Such a profound sacramental assessment shapes Orthodox ecological ethics in which creation is not simply a resource but rather a partaker in God's divine economy. The Cosmos is thus a "cosmic liturgy" in which all of



humanity is invited to take part through praise, thanksgiving, and solid stewardship (Acton Institute summary, 2025).

### **Theological Anthropology and Human Calling**

It is dominant in Orthodox teaching that all humans are created in the *imago Dei* and likeness of God (Genesis 1:26–27). This indicates accountability for the well-being of God's Creation. This image-and-likeness of God theology forms the foundation of a healthy ecological ethic which sustains the notion that humans are neither controllers nor mere consumers of the goods of the earth bestowed to us by God, but they are rather overseers and custodians of Creation. The Orthodox Church understands that human dominion does not mean humans having abusive control of resources but rather that humans are called to be responsible stewards. According to Orthodox sources, to misuse creation is to commit an iniquity that echoes a profounder alienation from God and one's neighbours (OrthodoxTimes.com, 2025). The Church's official pronouncements on ecology echo that humanity is called to be a steward, not an landlord, of the material world bestowed by God. Such stewardship is derived from one following deep ascetic practices which foster moderation and self-control. In this endeavour participating in the liturgical life of the Orthodox Church is critical, as it offers thanksgiving for God's gifts (Orth-Transfiguration.org, 2024).

### **Ecological Depravity and Moral Conversion**

A dominant theme in Orthodox eco-theology is the notion that ecological destruction is indeed a dire moral failure. The Ecumenical Patriarch Bartholomew has highlighted that environmental ruin is indicative of humanity's distancing from God, which manifests in greed, uncontrolled and excessive capitalism, exploitation, and total indifference to the plight of our fragile planet – the main concern being greed and disregard for creation (OrthodoxTimes.com, 2025).

Throughout his many speeches and messages, the Ecumenical Patriarch has detailed that the ecological problem is in the end a matter of "metanoia" - meaning a radical change of one's mind and heart. He contends that many technologies, poor policies, and unchecked economics alone cannot address the immense ecological destruction we witness unless there is a conversion in human morals and behaviours (Basilica.ro, 2016). This assessment aligns with Orthodox anthropology, which clearly comprehends that sin is a shattering of relationships with the Creator God, with others, and with Creation itself. Sin is not just an individual wrongdoing but a great disturbance in the well-ordered harmony of the Cosmos. Ecological sin therefore encompasses actions that impair creation, damage other people and especially the most vulnerable in societies globally, and they undoubtedly reflect a profound estrangement from the Holy Trinity.

### **Self-discipline and Stewardship in Practice**

Orthodox spirituality places significant emphasis on asceticism, referring to a disciplined practice of self-control and moderation which play an important role in the spiritual life of a n Orthodox Christian. When applied to ecological concerns, asceticism inspires lifestyles that fight gross over-consumption, absolute wastefulness, and the horrific unrestricted exploitation of global natural resources. According to Orthodox teachings, an ascetic attitude that nurtures simplicity, temperance, and thankfulness to God for His grace, naturally fosters a needed deferential relationship with creation (Basilica.ro, 2018).

Church declarations on ecology often highpoint the linking of deep spiritual discipline and a concern for environmental ethics. For example, Orthodox declarations reiterate that an appropriate ecological bearing is closely linked to the Church's ascetic ethos, which imparts



need for curbs on behaviours and respect for the created order (Orth-Transfiguration.org, 2024).

### **The Patristic Origins of Orthodox Eco-theology**

Even though the term “eco-theology” is fairly contemporary, its origins in Orthodox tradition can be traced back to the Early Church Fathers’ who all in some way or other reflected on creation’s goodness and the critical role of humans therein. Theophilus of Antioch reminds us that God is called “*Pantocrator*, because He upholds and sustains everything.” (Theophilus of Antioch, 1 Autolyclus). St. John Damascene contended that reverencing matter is vital because it was assumed by Christ at the incarnation and reinforces the idea that the material world participates in salvific history and is not simply a setting to human history (OrthodoxKorea.org, 2019). While not all patristic writings address ecological issues openly, the fundamental theological principles in their many works deliver a robust foundation for ecological care concerning the goodness of God’s creation, the incarnational affirmation of matter, and the cosmic scope of salvation. (Zizioulas, 1985).

St. Basil the Great’s influential *Hexaemeron* (commentary on the six days of creation) expands on the order and harmony of creation and it sustains that each element of creation is good and contributes to the cosmic order. Orthodoxy teaches, that when viewed historically, it is clear that creation is a manifestation of divine beauty, consequently advancing theological weight to pressing global ecological concerns. St. Basil also advises us that all of Creation divulges God to us and calls on all to have respect for nature and creation. He additionally advises that all of Creation establishes God’s wisdom in all its creatures and states: “Let us glorify the supreme Artificer for all that was wisely and skilfully made; by the beauty of visible things let us raise ourselves to Him who is above all beauty...” (St. Basil the Great, *Hexaemeron*, Homily 1.) He further argues that all Animals reflect God’s provision and order for His Creation: “What lesson do these animals teach man? They... show us in our Creator a care which extends to all beings...(St. Basil the Great, *Hexaemeron*, Homily IX).

When we look at nature and all of Creation we are driven to praise God and should be good stewards: “From the creation, learn to admire the Lord! ... glorify the Creator that the wisdom of His works surpasses your own understanding.” (St. John Chrysostom, Commentary on the Statutes, Homily XII.7). When humans were given dominion it was indeed with great accountability: “On the day God made Adam... in God’s image he made him... so too... he intended him to have control of all visible things.” (St. John Chrysostom, Commentary on the Statutes). St. Basil the Great (c. 329–379) also in the *Hexaemeron* (in Nine Homilies on Genesis 1) asserts that Creation rouses one to pay tribute of God the Father. “I want creation to penetrate you with so much admiration that wherever you go, the least plant may bring you the clear remembrance of the Creator... A single plant, a blade of grass is sufficient to occupy all your intelligence in contemplation of the skill which produced it.” (St. Basil the Great, *Hexaemeron*, Homily V; cited in St. Basil the Great (c.329–379), on creation and divine wisdom).

Importantly he says: “He [God] created heaven and earth... so that nature itself, in its visible order, might teach us of its Creator.” (St. Basil the Great, *Hexaemeron*, Homily I (on Genesis 1:1).

When it comes to animals he states: “The saints are exceedingly loving and gentle to mankind, and even to brute beasts... Surely we ought to show them [animals] great kindness and gentleness... because they are of the same origin as ourselves.” (St. John Chrysostom, Homily on Romans (often cited from Homily XXIX on Rom. 15, Nicene



and Post-Nicene Fathers, Vol. XI). Creation is indeed a doctrine “God... set before them a form of doctrine, which is the world; He gave them reason and an understanding capable of perceiving what was needful.” (St. John Chrysostom, Commentary on Romans 1, Nicene and Post-Nicene Fathers, Vol. XI).

St. Gregory of Nyssa teaches us that Creation reflects the wisdom of God and requires respect because in Creation we can surely detect divine wisdom and power. He tells us that the Cosmos “is a mirror that reflects the wisdom of its Creator, and through it, we ascend to the knowledge of God.” (Attributed to St. Gregory of Nyssa -patristic commentary). In addition, humans are to care ethically for others as also being images of God, which suggests humility and respect for life and the world God has created.

## **Church Practices**

The Orthodox Church has engaged deeply on the issue of maritime pollution and indeed all pollution. Numerous tangible steps have been taken to endorse ecological awareness within its life and mission. The Ecumenical Patriarchate for one, established September 1 as the Day of Prayer for the Protection of the Natural Environment, thus connecting ecological concerns with liturgical calendars and needed spiritual discipline. This communicates that the upkeep for creation belongs in the heart of Orthodox practices, and is not merely a peripheral issue (Basilica.ro, 2018). Church leadership also encourages positive eco-friendly initiatives in all countries where Orthodoxy is found, such as in educational programmes, youth formation, and parish-level ecological actions aimed at cultivating ecological awareness among the faithful (OrthodoxTimes.com, 2025). Such initiatives underpin the awareness that ecological responsibility is engrained in community life and in true discipleship, and it is not merely indicative of individual or communal good behaviour. God has delegated all human beings to share in His care for the physical environment. It is one’s duty to use Creation properly and a violation of human duty to abuse creation (Harakas, 1992).

## **Conclusion**

Microplastic pollution of the world’s oceans constitutes one of the most pressing environmental challenges of the contemporary era. Scientific research has revealed the scale, persistence, and ecological consequences of microplastics, demonstrating that marine ecosystems are deeply compromised by human activity. Yet scientific knowledge alone has proven insufficient to address the crisis.

This article has argued that microplastic pollution represents a theological and moral failure rooted in distorted relationships between humanity and creation. Eco-theology provides a critical framework for interpreting environmental degradation as an ethical issue, affirming the intrinsic value of creation, emphasizing stewardship and interconnectedness, and calling for transformative action.

Addressing microplastic pollution ultimately requires an integration of empirical science, ethical reflection, and communal commitment. By fostering dialogue between marine science and theology, eco-theology contributes to more comprehensive and just responses to ocean degradation and offers hope for ecological healing grounded in moral responsibility.

The Orthodox Church’s teaching on ecotheology situates ecological concern within the core of its theology, worship, and spiritual life. It affirms that creation is a sacred gift from God, that humanity’s vocation is stewardship and communion rather than exploitation, and that ecological crisis is ultimately a moral and spiritual issue that demands conversion of heart. Our trepidation for the protection of natural environment must exude integrity and



simultaneously serve as an instrumental value for the well-being of our neighbours and all fellow human beings created in the *Imago Dei*.

Orthodox eco-theology is distinctive because it frames environmental care not as a secular ethical obligation but as a Eucharistic and ascetic practice — a lived expression of gratitude for God’s creation and a moral transformation aligned with the Gospel. Through patristic roots, sacramental vision, and contemporary ecclesial teaching, the Church provides a robust theological foundation for understanding and responding to the ecological challenges of our time. We have an ecological responsibility to care for the earth and be concerned about marine and all other pollution - it is an ecological violation not to do so. We must fully develop our sense of responsibility towards the natural created world and care for it totally and honour it and God fully since the earth is the Lord’s and the fullness thereof.

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