

Reconciliation Ecology: A New Paradigm for Advancing Creation Care

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Current global environmental challenges – species loss, overconsumption, climate change, and others – have not been countered in the faith community with a response worthy of their significance. While the prevailing faith-based creation-care paradigm, environmental stewardship, has been invaluable in moving us beyond the utilitarian notion of “dominion,” the stewardship concept does not sufficiently emphasize our embedded, dependent relationship with the creation. To better represent our creation-care responsibilities, we propose a new paradigm based on a model of servanthood and informed by the concept of reconciliation ecology, which focuses on mending broken relationships between human beings and nonhuman creation. Drawing from the faith-based concept of reconciliation (as it has been applied to the God-human relationship and human-human relationships), we offer five steps that are critical in moving us to a more shalomic relationship with creation: (1) recognizing the wrong we have done; (2) lamenting personal complicity; (3) minimizing further harm and working to fix the wrong that was done; (4) accepting forgiveness; and (5) moving forward in a new relationship marked by mutual flourishing.

We understand and describe reconciliation ecology as the most recent manifestation of how nonindigenous North Americans have historically understood their responsibility toward nonhuman creation. We also discuss how reconciliation ecology is different from Christian environmental stewardship. To highlight the process of reconciliation ecology, we present a case study involving our work in the Plaster Creek Watershed, work that has contributed greatly to our understanding of the concepts we present here. We believe that reconciliation ecology’s emphasis on examining and changing our relationship with the creation – the way we think about it and interact with it (i.e., the way we live) – can help people of faith better comprehend and embrace the relevance of creation care to their daily living.

Most of those reading this article have likely chosen to align themselves with Joshua in regard to the challenge he presents in Joshua 24:15:

... choose for yourselves this day whom you will serve ...

But as for me and my household, we will serve the Lord.

But what does it really mean that we have chosen to “serve the Lord”? To serve (“*abad*” in Hebrew) conveys an intention to relegate our own interests to secondary status in lieu of the interests of whom we serve. Service is a prevalent and critical theme in Christianity. Christ himself is described as having taken on the very nature of a servant, humbling himself in the act of crucifixion (Phil. 2:7-8). As the ultimate servant, Jesus



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set aside his own interests and welfare for the sake of those he was serving. And those he was serving includes us human beings, but not only us human beings. Jesus gave his life for all of creation—so that all things could be reconciled (put back into their proper relationships) once again (Col. 1:15–20).¹

This notion of serving is fundamental to our identity as Christians. We are quite literally “Christ’s ones,” and since we identify ourselves as followers of the ultimate servant and profess to have been created in his image, an integral part of our faith journey is to keep developing into better and better servants. Choosing to serve the Lord means that we look after the welfare of those we serve. And the model of servanthood Jesus provides is expansive—encompassing all of creation.² It should come as no surprise, then, that one of the directives Adam was given in how to interact with the creation Jesus himself helped create (John 1:1–5) was to serve it (Gen. 2:15). Yet most of us would probably confess that much of our daily living does not reflect this kind of compassionate commitment to the creation—one in which our own interests are set aside for the sake of creation’s well-being.³ In fact, quite the opposite has transpired: by serving ourselves and by taking more than we give, we have been increasingly degrading the rest of creation.

For the most part, at least ecologically, we in North America have been able to get away with this one-sided relationship for quite some time. Until perhaps as recently as the industrial revolution, we could pretty much live as we wanted to live without encountering significant, wide-scale ecological consequences. Creation was vast, with enormous buffering capacity, and our impact seemed relatively small and innocuous. These past conditions led to an unfortunate assumption that resources are inexhaustible and creation has limitless resilience. Within the past few decades, this myth has proven undeniably flawed, and today we find ourselves perched at a very interesting point in history, with the fall-out from this myth accumulating rapidly. Human population growth, the mounting consequences of our fossil-fuel dependency, and our reckless consumptive behavior provide compelling evidence that our existence occurs within fixed planetary boundaries.⁴ We are beginning to understand that, like all other species—from bacteria to blue whales—we too are subject to ecological and evolutionary limits,

including the availability of space, food, and water; and to our ability to adapt in the face of an unstable and unpredictable environment.⁵

Within their lifespan, today’s college students will see the end of cheap oil, an increasingly unstable climate, precipitous loss of biodiversity, severe shortages of fresh water, rising food costs, and a global population surging past ten billion, resulting in expanding numbers of malnourished, desperate people.⁶ It is difficult to imagine another time in all of history when creation was groaning more loudly than it groans today. And God’s groaning creation is eagerly and expectantly waiting for the children of God to be revealed—waiting for the children of God to show up (Romans 8). Today we find ourselves in relationship with a wounded creation, embedded within a largely untended, eroding garden. And the groaning Earth of which we are a part is precisely the one God has called us to help him care for—there is no “Planet B” should this Earth become uninhabitable.

The call to step up and reveal our stewardly selves at this point in time is particularly compelling for North American Christians because it has become clear that rich nations are disproportionately degrading creation, and poor nations are disproportionately affected by the degradation.⁷ Matters of social and environmental justice intertwine.⁸ If one manifestation of loving our neighbors is to make room for them and help them flourish,⁹ then we are certainly falling short of this basic biblical directive as we despoil creation and brush off the ecological consequences onto the most marginalized and disenfranchised peoples of the world.¹⁰ By choosing to live in ways that serve ourselves and thereby degrade creation, we are disregarding God’s command to love our neighbor.

From this interesting historical perch, we can look back and see how the one-sided relationship has developed and the problems it has elicited. We can also look forward to an uncertain future, a future that, philosopher Michael Nelson reminds us, we will undoubtedly destroy if we simply continue living as we have lived in the past and as we currently are living today.¹¹ But we do not have to continue on this track—we have the capacity to make choices that benefit others: other people, other species, and future generations of both.¹² The great question of today is how do we assist with the necessary and

radical transition from our present environmentally costly, self-serving existence to one that models true servanthood? How do we begin working to heal the significant wounds we have inflicted?

Thesis Statement

Given the growing urgency of Earth's mounting environmental crises, we suggest that a new paradigm is needed—one that moves us beyond the rather detached role of "steward," to one that more emphatically highlights humanity as *being in relationship with creation*.¹³ While Christian environmental stewardship has aptly emphasized our responsibility to care for the earth, we believe that it needs to be enhanced and strengthened such that a new governing metaphor can emerge. And we believe that the recently articulated concept of reconciliation ecology can help orient us in such a new and hopeful direction, one that provides fresh and necessary inspiration to help people of faith better understand creation care as a vital component of their daily living and spiritual development.

Historical Context

Reconciliation ecology can be understood as the most recent manifestation in an ongoing developmental progression of how nonindigenous North Americans think about themselves in the context of their natural environment. Our earliest immigrant ancestors understood the landscape primarily as an exploitable pool of resources for improving their existence by meeting basic needs, and later, by turning a financial profit. For example, while many ships from Europe arrived with people, most of them returned to Europe with marketable products, not least of which were trees—towering 250-foot white pines—that were a boon to the British Navy's shipbuilding efforts of the sixteenth and seventeenth centuries.¹⁴

But already in the 1790s, proposals for establishing preserves of the few remaining old-growth New England forests were offered.¹⁵ However, no serious preservation attempts were undertaken until one hundred years later, in response to pleas by the impassioned naturalist John Muir. Muir's success, as evidenced by the establishment of some of our most cherished National Parks such as Yosemite, Grand

Canyon, and Sequoia, reflected a growing awareness that unchecked resource extraction was unhealthy both for the land and its people.¹⁶ In *The Yosemite*, Muir writes: "Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul alike."¹⁷

Before long, however, land managers came to realize that simply preserving sections of the landscape was an insufficient model for protecting the integrity of both the preserved areas themselves and the whole of earth's biodiversity. It was recognized that even seemingly pristine areas have been directly and indirectly disrupted by human beings through the removal of top predators, suppression of natural wildfire, introduction of nonnative species, and by a variety of interventions in natural processes and cycles.¹⁸ Furthermore, ever since the creation of these protected areas, there have existed political pressures to extract resources from within them.¹⁹ As we began to understand more about the interconnectedness of preserved areas, human-dominated spaces, and the broader landscape, scientists and land managers began studying how best to maintain and manage the landscape to promote biodiversity. This field of study, conservation biology, was also informed by the realization that human beings were causing other species to go extinct. Today, more scientifically informed conservation practices (reintroducing species, conducting controlled burns, removing invasive species, etc.) protect and maintain the biodiversity that had been previously protected via preserves, by setting aside and staying out of the way.

Yet, these notions of preserving some of nature and managing and extracting resources from the rest of it were also seen as insufficient by themselves. In the late 1900s, it became well documented that biodiversity steadily erodes as habitat fragmentation increases.²⁰ Scientists and others recognized that it was essential to protect larger areas and create connecting habitat corridors between them to maintain biodiversity.²¹ In response to this awareness, the field of restoration ecology emerged—the study and practice of assisting the recovery of degraded ecosystems to help them regain some of their former functionality, beauty, and biodiversity. To summarize, here in North America, attitudes toward the natural world have progressed from resource extraction to preservation, conservation, and restoration.

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A similar awareness has also been developing in North American Christendom, albeit with numerous impasses and permutations. The church historically perceived creation as a palette of resources given by God to support human life; “dominion” emphasized humanity’s special administrative responsibility *over* creation.²² These ideas supported the notion that we can do with nature as we please. Muir himself, having been raised in the Christian faith, had much to say to the church that questioned this narrow perspective. Over time, some Christians began understanding creation as holding inherent value beyond its usefulness to humankind. The Calvin Center for Christian Scholarship book, *Earthkeeping*, was instrumental in articulating a clear vision for Christian environmental stewardship, emphasizing that God entrusts human beings to care for his beloved creation in ways that ensure its continued fruitfulness and integrity.²³

The developments described above are steps toward a fuller understanding of potential human relationships with the creation. However, each of these perspectives (including Christian environmental stewardship) is an articulation of how we should think about and act toward nature. Nature is the object; how we perceive it and what we do to it are the questions. What is not acknowledged (or at least emphasized) is that we, too, are part of creation, and its degradation is occurring because of how we have been living within it. Furthermore, climate change is an ongoing illustration of how the effects of degradation caused by certain people in certain places often make life more difficult for other people in other places.²⁴ The way we interact with creation, while itself worthy of candid consideration, must also be recognized as a vector through which we influence other people in other places.

Reconciliation Ecology: A New Paradigm for Moving Forward

Reconciliation ecology has emerged in response to scientific assessments that approximately 15% of Earth’s productive land surface today remains in a condition approximating its natural, prehuman state. The other 85% has been transformed for (or at least bent in the direction of) serving humanity. Estimates for oceanic ecosystems are similar.²⁵ One species, *Homo sapiens*, now commands 85% of Earth’s eco-

systems, leaving 15% (and declining each year) for the rest of the 30 million or so species that make up Earth’s biodiversity. It is no wonder, then, that our planetary extinction rate is estimated to be in the range of 10,000–40,000 species per year and rising (roughly 25–100 species lost each day).²⁶ The solution to this devastating loss of diversity is not to more securely protect the 15% that has yet to be seriously altered; Earth’s 30 million species will never be able to exist on only 15% of the planet. Instead, we must turn our attention to the 85% and figure out how we can reside in and use these areas in ways that do not eliminate, but rather encourage other elements of creation’s web of life to coexist along with us. In more direct language, we need to learn how to reconcile our current human existence with the rest of creation.

Reconciliation ecology has been described as the science of restoring, creating, and maintaining new habitats, and conserving biodiversity in places where people live, work, or play.²⁷ This approach turns the focus back onto humanity and asks a fundamental question: How can we reconfigure our own existence so that it is more a blessing than a curse to the broader landscape within which we reside? It is a concept that is gaining recognition as increasing attention is being placed on learning how to live more sustainably. Indeed, if reconciliation ecology is done well, sustainable living will result.

Instead of working to take care of a creation that resides “out there” some place, reconciliation ecology emphasizes that we are part of creation—our bodies, our buildings, our cars, our yards, et cetera—and it challenges people everywhere to live in their own places in ecologically affirming ways that enhance biodiversity and restore ecological functionality to their own local places. It strives to reinvent the human presence to better accommodate and affirm the other creatures with whom we live. Reconciliation ecology is a hopeful paradigm—it raises the possibility that the human presence has the capacity to be more a blessing than a strain on the land. It aims to provide answers to important questions about the future of biodiversity and the environmental integrity of our planet: How do we build buildings that generate more energy than they use? How do we change the way we grow food so that our agricultural systems accumulate, rather than erode, healthy topsoil? How do we change the way

we live so that native biodiversity is attracted back to our urban and suburban areas?

A compelling example of reconciliation ecology is given by Douglas Tallamy from the University of Delaware. He studies how native plants used in urban landscaping significantly increase the presence and health of native insects and birds.²⁸ Another fine illustration of reconciliation ecology in practice is exhibited by the Menominee Nation in central Wisconsin who have maintained high biodiversity and ecological health on their land in spite of the annual, ongoing timber harvesting that has occurred for many decades.²⁹ New ways of thinking about and interacting with the creation can result in new outcomes. Human beings do not have to live in ways that always degrade. An additional, more detailed example of reconciliation ecology is provided below in the case study of Plaster Creek Stewards.

We believe that reconciliation ecology has the potential to breathe new life into how the faith community understands and engages creation care.³⁰ Reconciliation of broken relationships is a fundamental tenet of Christian faith; Christ is understood to have come so that we can be reconciled in our relationship with God. The need for reconciliation, for example, “racial reconciliation,” is also raised by the church when people have significantly wronged one another.³¹ Reconciling people to the creation offers a natural extension of this tenet and a very useful and appropriate means for advancing God’s expansive Kingdom of shalom here on Earth.

Faith-Infused Reconciliation Ecology

Reconciliation is a rich term that can be applied in many situations and has been defined in multiple ways, in both secular and faith contexts. Yet all definitions of this term involve the same basic principle: the bringing back together again of things that had been at odds. It involves the restoration of harmony, getting two things to correspond again, and restoring friendly relations. Reconciliation is also the Roman Catholic sacrament of penance, a reminder that apology and regret are critical elements. Reconciling humanity to God is often referenced as the reason why Christ came and died. Our relationship with God had been distorted by sin, but Christ’s

sacrifice re-established that relationship by bringing us back together again with God. Reconciliation is the beautiful outcome of redemption. Second Corinthians 5:17b–20 is a seminal text:

Therefore, if anyone is in Christ, he is a new creation. The old has passed away; behold, the new has come. All this is from God, who through Christ reconciled us to himself and gave us the ministry of reconciliation; that is, in Christ God was reconciling the world to himself, not counting their trespasses against them, and entrusting to us the message of reconciliation. Therefore, we are ambassadors for Christ, God making his appeal through us. We implore you on behalf of Christ, be reconciled to God.

Paul emphasizes that reconciliation truly changes things. Old things are in the past, new things appear, former offenses are forgiven and new relationships emerge. This passage also describes humanity as being given the ministry or the message of reconciliation. Thus, because of Christ, we have had our relationship with God reconciled, and because of Christ, we have also been designated as reconcilers ourselves.

One way that human beings can actualize this message of reconciliation is in our interactions with each other. By forgiving past wrongs and healing social hurts, we engage in reconciliation with one another.³² When such restoration of a relationship is determined to be impossible, for example, in a divorce, the reason given for permanent severance is often “irreconcilable differences.” Probably the most public venue and most significant example of reconciliation between people has been the South African Truth and Reconciliation Commission (TRC).³³ This group was set up to begin healing the rift between South African blacks and whites in the aftermath of apartheid. Many painful yet powerfully hopeful stories and interactions have been brought to light through the work of the TRC.³⁴ This work is related to justice, yet it goes beyond justice. Justice can be legislated, forcing offenders to pay for the wrong they have done. Reconciliation attempts to change hearts, and, in so doing, to change the relationships that have been damaged by the wrong that was done (in “justice” terms, Wolterstorff describes reconciliation as essential to “restorative justice”³⁵).

From reviewing the work of South Africa’s TRC, as well as similar commissions set up in other countries

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including Sierra Leone, Canada, Liberia, Australia, Chile, and others (note that no explicit commissions of this type have been undertaken in the US), we have identified five critical steps in the process of reconciliation that occur between people or groups of people, all of which require humility as a prerequisite:

1. Recognizing the wrong that was done (Awareness)
2. Lamenting personal complicity (Repentance)
3. Minimizing further harm and working to fix the wrong that was done (Restoration)
4. Accepting forgiveness extended by the agent that was wronged (Acceptance)
5. Moving forward in a new relationship marked by mutual flourishing (Renewal)

As mentioned above, this process can only work when the perpetrators of injustice come to the process with humility, and display a sincere desire to address the wrongs that were done. Refusing to recognize complicity in the pain that was inflicted will assure the relationship will remain unreconciled.

We believe that much can be gained by applying these principles to the relationship between humanity and the rest of creation. Our relationship with the land, as in our relationship with God and with each other, has been distorted through sin (figures 1–3). We do not think about and interact with the surrounding creation in ways that God intended. God did not create mountains so that we could blow their tops off, the Gulf of Mexico was not meant to be a dumping ground for agricultural effluents, and God’s amazing tapestry of diversity was not set in place for our cavalier unraveling. When presented with examples of creation’s groaning, we need to come to the humble recognition that these groans are not just happening; they are a direct outcome of our distorted relationship with creation. They emanate from misguided human agency. We have wronged the creation, and our relationship with it needs healing.

The five steps of reconciliation enumerated above can help inform a Christian response to this distorted relationship. Out of regret and lament for our personal complicity in the degradation, we commit ourselves to minimize further harm and become ded-

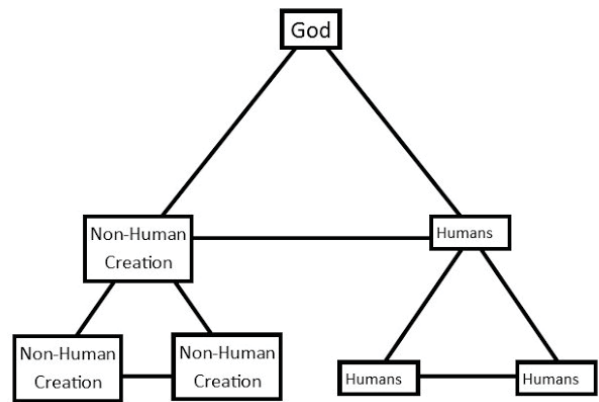


Figure 1. Shalomic Relationships

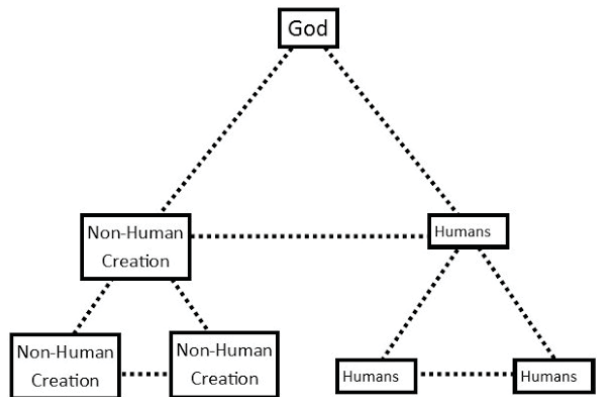


Figure 2. Broken Relationships

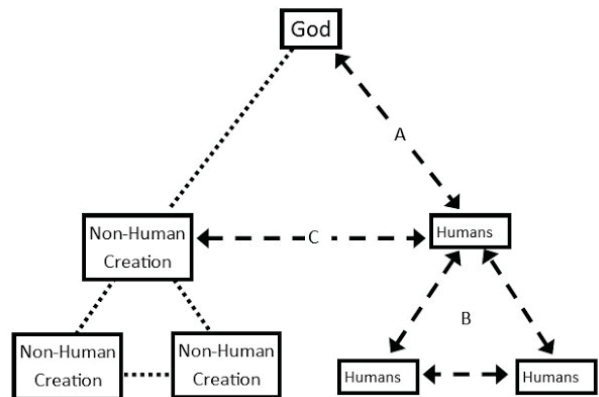


Figure 3. Reconciliation

Figures 1–3. The lines connecting different elements of these diagrams represent relationships between those elements. Shalomic relationships within creation as God intended (fig. 1), are marred by brokenness and sin (fig. 2). Reconciliation (fig. 3) can be thought of as working to restore shalom where brokenness exists in those relationships: reconciliation between God and humans (3A); between people or among groups of people (3B); and between humans and nonhuman creation (3C), which is what we refer to as “Reconciliation Ecology.”

icated to correcting harms that have been inflicted. Once this new commitment is made, and efforts are extended toward healing past wrongs, creation will respond. We will not be directly granted forgiveness by creation, but when we work to restore degraded streams, replace lawn areas with native habitat, or advocate for preserving tracts of forest, creation will respond. New life will return to the stream, butterflies and birds will find the native plants, and the preserved forest will be able to supply environmental and aesthetic services that will benefit all kinds of creatures once again, human beings included. In these and so many other ways, nature's resiliency, while not inexhaustible, is lying in wait, eagerly anticipating our conciliatory offerings of hope toward a future marked by humanity and creation existing in a renewed, reconciled relationship.³⁶

While not addressing these five steps directly, Michael Nelson illustrates the process rather well:

We often hear that people only change their ideas, and therefore their behavior, in the face of crisis. But we forget that a crisis can be a moral crisis as well, a sense of revulsion for a life that we are living, a commitment to live differently and to be a different kind of person. We need The Great "yuck!" Yuck, what we are doing is repulsive. Yuck, this is not the way a responsible person lives. The Great "yuck!" can be followed by The Great "no!" No, I will not live this way. No, I will not be this kind of a person, this kind of an agent in the world. Finally, The Great "no!" will give way to The Great "yes!" Yes, I will live a life of respect, of humility, empathy, care, and attentiveness. Yes, I will choose to live with dignity and grace, no matter what.³⁷

One of the elements of truly good news in such a re-orientation is that there are so many ways we can begin living in this new relationship. Small daily turnings that lessen our environmental footprint can accumulate and build into the kind of significant shift that is necessary for truly sustainable living. As reconciliation becomes a model for creation care, we will come to better understand how our lives never take place in a vacuum but instead result in reverberations throughout God's world. And the good news is that these reverberations need not be negative. The wounds God's groaning creation exhibits today can be salved through the use of more appropriate technology, renewable energy, alternative agricultural practices, heightened biodiversity conservation, sustainable development, urban renewal, ecologi-

cal restoration, and so forth. The good news is that our relationship with creation, while broken, is not irreconcilable. We are an adaptable species, we can change our ways. And the creation waits eagerly and expectantly for the children of God to be revealed as ministers of reconciliation.

How Reconciliation Ecology Differs from Christian Environmental Stewardship

For Christians working in the area of creation care, the prevailing paradigm over the past few decades has been environmental stewardship. Stewardship calls attention to our peculiar calling as caretakers of creation—watching over something that does not belong to us, but rather belongs to God. The Christian stewardship model has provided a significant and critical advancement over the concept of dominion, which had been used by some to justify rampant use and domination.³⁸ Stewardship principles expanded the notion of dominion to an approach of caregiving, as evidenced in this description by Cornelius Plantinga that bridges the two concepts:

In the kingdom of God, to have dominion is to care for the well-being of others. To have dominion is to act like the mediator of creation. This means that a human steward of God's good creation will never exploit or pillage; instead, she will give creation room to be itself. She will respect it, care for it, empower it. Her goal is to live in healthy interdependence with it.³⁹

The concept of Christian environmental stewardship has promoted human responsibility as guardian over creation, and in so doing has advanced traditional notions of dominion. However, there are limits to this way of thinking as well. While a focused critique of the stewardship concept will not be undertaken in this article, a few shortcomings should be noted.

First, stewardship generally underemphasizes our embedded relationship with the creation, our dependency upon it, and our involvement in its desecration.⁴⁰ Stewardship is something we human beings do to the creation. It illustrates an "I - it" relationship, promoting the notion that we are somehow separate from the rest of creation.⁴¹ Conceptually distancing ourselves from creation's degradation (an action similar to geographical distancing) makes

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it easier to absolve ourselves of complicity. For example, being a good steward might simply mean cleaning up a polluted stream without addressing the human behaviors that have caused the stream to become polluted (even, possibly, by the steward himself or herself).

Secondly, the biblical concept of stewardship is one in which the steward watches over a resource that belongs to another. Stewards in the Bible never take care of anything that does not have monetary value; this fact may explain why the concept of stewardship has been so easily incorporated into economics and business vernacular and why any attempt at meaningful dialogue between ecologists and entrepreneurs is so easily confounded.

Thirdly, the resource overseen by a steward is cared for while the owner is away. This concept contradicts an understanding of God's immanence in creation, reducing its sanctity, and making it seem less offensive to do with creation as we please. The twentieth-century Dutch theologian Abraham Kuyper would counter, "In everything that in nature lives before our eye, murmurs, throbs and moves itself, we feel the pulse-beat of God's own Life."⁴² By contrast, in order for reconciliation to happen, all parties must necessarily be present.

Finally, while it is clear that humanity has a responsibility to care for creation, stewarding the whole of creation is not directly pronounced in scripture. Concepts of ruling, subduing, serving, and preserving are all important directives from which the stewardship concept draws, but no one in the Bible is ever told to "steward" the creation.

In the same way that stewardship advanced Christian thought beyond traditional notions of dominion, we believe that reconciliation ecology can move us beyond stewardship to an even more appropriate understanding of our place and responsibility within God's creation. Reconciliation ecology emphasizes that we are in relationship with the creation, albeit a distorted relationship that needs to be set right. It emphasizes humanity's participation (as part of creation, not apart from creation) both as agent of degradation that wounds creation, and as victim of degradation inflicted by others. We are creation too, and creation care or lack thereof will play out on human beings as well as on other species. By focus-

ing on our embedded relationship with creation, reconciliation ecology is better equipped to address the causes of degradation, not just the symptoms.

We also find the concept of reconciliation to be a more scripturally consistent way of engaging Christians today with modern environmental challenges. For example, the prophets speak frequently about how the land suffers because of the disobedience of the people. Listen to how relevant Hosea sounds with respect to today's biodiversity loss:

*Hear the word of the Lord, you Israelites,
because the Lord has a charge to bring
against you who live in the land:
"There is no faithfulness, no love,
no acknowledgment of God in the land.
There is only cursing, lying and murder,
stealing and adultery;
they break all bounds,
and bloodshed follows bloodshed.
Because of this the land dries up,
and all who live in it waste away;
the beasts of the field, the birds in the sky
and the fish in the sea are dying."* (Hosea 4:1-3)

And when Ezekiel thunders against the rulers for muddying the waters, this bears strong similarity to how developed-world contributions to climate change play out on poor, developing nations:

*Is it not enough for you to feed on the good pasture?
Must you also trample the rest of your pasture with
your feet? Is it not enough for you to drink clear water?
Must you also muddy the rest with your feet? Must my
flock feed on what you have trampled and drink what
you have muddied with your feet?* (Ezek. 34: 18-19)

By calling attention to our relationship with creation, reconciliation ecology more appropriately identifies the significant changes we need to make in our own lives as we work to heal our distorted relationship with creation. Reconciliation is hard work and challenging; it is not comfortable, convenient, nor easy. Yet, reconciliation ecology brings hope—it puts our feet back on a proper path and orients us in the direction of a much healthier, more beautiful, more shalomic future.⁴³ Finally, although stewardship is a metaphor built from various biblical references, we find it compelling that scripture clearly identifies Jesus as the agent of reconciliation for the world, and his followers as those who have been given the ministry of reconciliation (Col. 1:15-20, 2 Cor. 5:17-19).⁴⁴

Case Study: Plaster Creek Stewards

Working to address problems in the Plaster Creek Watershed over the past decade has informed much of our thinking on reconciliation ecology. We therefore present a description of this work in hopes that it will help to illustrate many of the conceptual arguments we have been making in this article.⁴⁵

Defined simply, a watershed is an area of land that drains to a common point. Frequently, this point is the mouth of a river or a stream that empties into another body of water such as an even larger river, or a pond, lake, sea, or ocean. Whenever we walk on solid ground, be it carpet, asphalt, or forest floor, we walk within a watershed. Rivers and streams represent the veins and arteries of watersheds, and a simple “blood test” (water quality test) reveals a great deal about how people interact with the plants, animals, and soils of their watershed; the quality of water flowing out of a watershed tells us about the relationships that exist within the watershed.

The process of rainwater becoming streamwater occurs via two distinct pathways: (1) direct surface runoff—water running over land and into a stream, or (2) indirect percolation through soil layers—reaching a stream through seepage, subsurface drainages, or springs. The latter route is a much longer process that filters, cools, and cleans the water before it reaches a stream, with a large proportion of the rainwater being absorbed en route by root uptake and soil absorption.

Streams surrounded by natural habitats receive most of their water indirectly, while direct surface runoff accounts for most of the input to streams in developed landscapes. This is one reason why stormwater surges are so common with urban waterways—too much rainwater is draining into the stream too quickly. Furthermore, high volumes of stormwater runoff are accompanied by contaminants that human activity has deposited on the land surface. In this way, stormwater runoff carries direct evidence of how the human-creation relationship is being lived out in a particular watershed.

The Christian Reformed Church of North America (CRC) has a notable presence in the fifty-seven-square-mile Plaster Creek Watershed. This watershed

is home to the CRC denominational headquarters, the Christian (Reformed) Recreation Center, a large portion of Calvin College’s campus, over one hundred churches (more than twenty of which are of the Reformed persuasion), and literally thousands of Calvin College faculty, staff, students, and alumni. Beginning in agricultural areas south and east of Grand Rapids, Michigan, Plaster Creek flows for fourteen miles through commercial, suburban, and industrial areas before encountering lower income neighborhoods near its confluence with the Grand River, just south of downtown Grand Rapids.

This diversity of land use is reflected in the stream: sediment browns the water; *E. coli* concentrations consistently threaten public health (measured at levels 50x higher than state-sanctioned thresholds); toxic metals contaminate abandoned industrial areas and leach into the stream; and thermal pollution from runoff of extensive impermeable surfaces (e.g., parking lots, roads, roofs) creates temperature fluctuations that make the stream inhospitable to all but the most pollution-tolerant stream creatures. All these problems are exacerbated by the high volumes of water that enter the stream each time it rains. Furthermore, the problems described above are initiated in the rural and suburban upper reaches of the watershed and intensify as the stream proceeds toward neighborhoods of lower income families, causing these most marginalized and vulnerable residents of the watershed to be subjected to the greatest public health threats.

But the stream was not always like this. Before European immigrants began arriving in western Michigan, the region was inhabited by the Odaawaa people. When the first missionaries came to this region in the early 1800s, the Odaawaa leader was Chief Blackbird, who lived on a floodplain island (today called the “Black Hills”) that overlooked Plaster Creek, at that time known as “Kee-no-shay” Creek (meaning “water of the walleye”). Apparently, Chief Blackbird was resistant to evangelical attempts, insisting that God was not confined to a book or a church building. One day he took one of the missionaries to a place where Kee-no-shay Creek poured over a large rocky outcrop of orange-hued stone. Blackbird described to the missionary the importance of the waterfall to his people, as a place of spiritual significance where his people would go to be with

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their God. The missionary took a sample of the rock and sent it to Detroit to have it analyzed. The sample was identified as gypsum, which could be ground up and sold as an agricultural fertilizer and as the base for plaster. Before long a plaster mill was established at this site, which became the first of many such operations in the Grand Rapids area.⁴⁶ Over the course of the next century, Kee-no-shay Creek became increasingly polluted from gypsum mining and urban expansion, and eventually the walleye and many other life forms that had once thrived in these waters were eliminated. The less attractive but more descriptive name, “Plaster Creek,” gained acceptance.

The story of this encounter not only identifies people of faith as being complicit in the degradation of Plaster Creek from early on, it also shows that Plaster Creek’s degradation was preceded by a fundamental shift in the way inhabitants thought about and interacted with the stream. Plaster Creek Stewards is a group of Calvin College faculty, staff, and students working with local churches, schools, and community partners to restore health and beauty to the stream. We understand this to be reconciliation work—primarily reconciliation between people and the creation. But because of creation’s interconnectivity, our work also involves reconciliation among different communities of people that reside within this watershed because the polluted stream is a vector through which upstream residents adversely affect the welfare of their downstream neighbors.⁴⁷

Much of the community-based work done by Plaster Creek Stewards follows the five steps of reconciliation described above. The stewards conduct education and outreach programs for schools, churches, and community organizations, detailing the historical degradation of the creek and hoping to increase awareness regarding the plight of the stream (step one: recognizing the wrong that was done). Many of our presentations include the story of Chief Blackbird and the early missionary, and when presenting to church audiences, this story often results in a compelling realization of the faith community’s involvement in the degradation.

We also collect oral histories from residents who are willing to share their personal experiences with the stream. Many of these stories involve childhood memories of playing, fishing, or exploring in and

around the stream—stories that serve as powerful articulations of a changed landscape and a lost sanctuary. Current practices that contribute to stormwater runoff and other problems are highlighted, underscoring broad participation in the ongoing contamination of Plaster Creek (step two: lamenting personal complicity).

Plaster Creek Stewards is also intentional about providing opportunities for residents to become directly involved in doing restoration work.⁴⁸ We have seen that these activities can foster a deeper appreciation for the creek, resulting in the beginnings of changed behaviors and transformed relationships.⁴⁹ These communal experiences include greenhouse work of propagating native species, planting the native species in rain gardens or bioswales, distributing rain barrels, stenciling storm drains, removing invasive species, and so forth (step three: minimizing further harm and working to fix the wrong that was done).

The fourth step in the reconciliation process, forgiveness, is harder to visualize when the party harmed is nonhuman creation. However, as our work progresses, we are finding that creation is capable of extending, at least symbolically, what we translate as an offering of forgiveness. As an example, when we work on a restoration project such as the installation of native habitat to capture stormwater runoff, there are a variety of preparatory elements required of us



Figure 4. Plaster Creek Stewards volunteers help plant a rain garden at a school in the watershed after attending an educational presentation about stormwater pollution in Plaster Creek.

to ensure the success of the work—existing weedy vegetation must be eliminated, the site and the soils must be properly readied, and the plants that suit the site must be chosen appropriately and properly planted and cared for. When this work is done well, over time the native vegetation matures, extending roots downward and shoots upward; our efforts of reconciliation are greeted by a response from creation. Soil is held in place by the deep roots that also filter excess nutrients, and caterpillars, bees, grasshoppers, butterflies, and birds show up to accept the offering of biomass, nectar, and seeds. In a way, this response indicates to us that creation is extending forgiveness, and we accept its response of buzzing, humming, chirping, and chomping with great joy (step four: accepting forgiveness extended by the agent that was wronged).

In many of our public presentations, as well as in meetings with community partners, we often talk about what a new (or renewed) relationship between people and creation might look like within the Plaster Creek Watershed. This fifth step in the reconciliation process will not take place completely until the broader community learns to think about, appreciate, and interact with the stream in new and

affirming ways. This new relationship would involve a political, cultural, social, and systematic shift toward slowing down stormwater runoff, capturing it where it lands, and spreading it out over an area where it can be treated (like a rain garden or a retention area). In this way, the water would be treated by soils, plants, and natural filtration processes that would result in clean, cool, and clear groundwater feeding into healthier waterways. Reconciliation in the watershed would also mean that communities of lower economic status would not face increased risk of being exposed to toxic contaminants introduced in upstream areas. They would have equal access to the same high-quality green spaces and parks presently more common in affluent communities. Reconciliation in the watershed would mean that children, no matter where they live, would be able to enjoy the stream for what it once was, a playground for swimming, fishing, and exploring.⁵⁰ It would result in a stream and a landscape that provides safe spaces for the thriving of a broad variety of biodiversity, humanity included (step five: moving forward in a new relationship marked by mutual flourishing).

We present this case study as an example of reconciliation ecology in process. Plaster Creek Stewards is not simply applying for grants to support environmental remediation companies to come in and restore the creek. Instead, we are intentional about working with watershed residents, focusing on changing the way people think about the stream and the way they live within the watershed. We are working to change the relationship between people and creation within the context of this watershed. In a very real sense, the overall goal of this project is to bring the good news of reconciliation to all the inhabitants of the Plaster Creek Watershed (Mark 16:15), and in so doing, help restore shalom to this beloved portion of God's creation.⁵¹

Conclusion

Coming to terms with how we have wronged the creation and resolving to live more creation-affirming lifestyles is both biblically mandated and an essential testimony to our contemporary world.⁵² The call to reconciled living is summarized in Wendell Berry's pithy directive to the faithful to "practice resurrection."⁵³ The path toward reconciliation is also embedded in Paul's admonition to "*work out your salvation in fear and trembling*" (Phil. 2:12).



Figure 5. Calvin College students conduct winter macroinvertebrate (e.g., caddisfly larva, crayfish) sampling in Plaster Creek. The sampling is an effort to measure the biological health of the stream by looking at the biodiversity found within it.

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Lutheran theologian Joseph Sittler articulates it this way:

If in piety the church says, “The Earth is the Lord’s and the fullness thereof” (Psalm 24:1), and in fact is no different in thought and action from the general community, who will be drawn to her worship to “come and see” that her work or salvation has any meaning? Witness in saying is irony and bitterness if there be no witness in doing.⁵⁴

The paradigm of reconciliation ecology, although developed and used until now largely by secular scientists, is ripe for introduction to the faith community. Rather than utilitarian arguments for preserving nature, Christian faith provides motivation for lifestyle changes by recognizing the creation, including humans, as the object of God’s loving care. Furthermore, being the only creatures to have been created in God’s image, humans are called into a special responsibility of nurturing and encouraging creation’s flourishing. Recognizing this, we confess that we have largely failed in that relationship and we repent, seeking to be reconciled to all that we have injured. Reconciliation ecology’s emphasis on changing our relationship with the creation—the way we think about it and interact with it, or, put simply, the way we live—can inspire tangible, daily turnings on behalf of creation’s well-being. This new paradigm can also help people of faith to better comprehend and embrace the relevance of creation care to their daily lives, especially as they witness signs of God’s grace and forgiveness in creation’s response to their changing behaviors.

Reconciliation ecology is the business of both the individual and the church. Each member of every household is in a position to better understand how their actions influence life around them. But Christ’s body, the church (and its manifestation in Christian colleges and universities), represents a potentially powerful place to practice and teach reconciliation ecology corporately. For example, reconciliation ecology can be a powerful framework within which Christian college or church campuses can be inspired to fresh insights and action. Green spaces and campus gardens can provide living space for humans and native creatures alike and can provide excellent venues for study of the interactions between these parties.⁵⁵ In such efforts, these places can become potent demonstration sites for sustainable landscaping, sustainable food generation,

purchasing, consumption, waste processing, and carbon neutrality initiatives. In support of the last of these examples, the presidents of many colleges and universities have already signed or are considering signing the American College and University Presidents’ Climate Commitment (ACUPCC), an effort to stem the accelerating rate of climate change; more presidents should be encouraged to do so.

For creation to heal and flourish, the old order needs to pass away (Isa. 43:19, 65:17; Rev. 21:1). The toxic contamination and species extinctions, the removal of mountain tops and steadily climbing carbon dioxide levels, all need to pass away. The good news is that the God we worship is making all things new again (Rev. 21:5). The Kingdom is coming, and it does not look like bacteria-laden, effluent-choked urban streams framed by a dangerously altered climate. God’s renewed Kingdom looks like a river of life, clear as crystal running through the heart of a beautiful city, with well-watered trees, the leaves from which provide healing for the nations (Revelation 22). As Christ’s ones (“Christ-ians”) here on Earth, he is calling us to “show up;” to join him in the exciting and deeply meaningful work of reconciling all of creation.

The end is reconciliation,
the end is redemption,
the end is the creation of the beloved community.
—Dr. Martin Luther King, Jr.⁵⁶

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About the Authors

David Warners grew up in Grand Rapids, Michigan, and graduated from Calvin College with a major in biology and chemistry in 1985. He earned a Master’s degree in environmental studies from the University of Wisconsin-Madison and a PhD in plant ecology and evolution from the University of Michigan.

Between graduate degrees, Dave and his wife Teri lived and worked for the Christian Reformed World Relief Committee in Tanzania, from 1990 to 1992. He has been teaching botany and ecology courses at Calvin College since 1997. Dave's research/scholarship interests include restoration ecology, plant systematics and evolution, academically based service learning, and the intersection of faith and science. In 2009, Dave and Gail Heffner (Calvin's Director of Community Engagement) started the Plaster Creek Stewards, a collaboration of Calvin faculty, staff, and students; a variety of community partner organizations; and a growing number of local churches and schools who work together to restore health and beauty to the Plaster Creek Watershed. Finally, Dave is an advocate for using native plants in urban landscaping and has helped design and establish over thirty native landscape plans at schools, parks, and other locations in the West Michigan area.

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Notes

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