Invited Article

Ecocriticism 101: A Basic Introduction to Ecocriticism and Environmental Literature

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Try to imagine a society—or even an individual human being—that does not require some form of interaction with the natural world in order to exist. At the moment, I am reading Sharman Apt Russell’s *Hunger: An Unnatural History* (2005), and she speaks in her opening chapter about certain individuals—eccentrics, desperately overweight individuals, and even “hunger artists” who perform by abstaining from food—who have avoided eating for extraordinary periods of time. An American magician, for instance, had himself suspended in a six-foot by six-foot by three-foot box near the Tower Bridge in London, England, for 44 days without food in 2003. But did this “entertainer,” David Blaine, go without water? Without air? And what about the 465-pound Scottish man, known to the public simply as “A.B.,” who fasted for 13 months in the mid-1960s in order to lose 276 pounds? Even during this long period of hunger, Mr. A.B. relied upon the planet, upon nature, for his very survival. All human beings throughout history have relied upon their relationship with nature in order to exist.

The problem, some might say, is that many of our cultures have either come to take nature for granted or have, as the ecological literary critic, or “ecocritic,” Simon Estok, has written, developed an adversarial attitude towards nature, believing that human success and comfort require us to dominate and exploit nature rather than to live in a kind of symbiotic, or cooperative, relationship with the non-human world. Estok refers to this antagonism towards nature as “ecophobia” and argues that it is an essential condition of many contemporary societies, a condition that we may need to overcome if humans are to continue living on this planet well into the future.

What I have begun to describe above is a kind of paradox, a strange and ironic situation by which we know that we all need nature; yet, for some peculiar reason we humans like to think of ourselves as being free from the encumbrances of physical...
needs. We like to imagine we are clever enough to overcome the physical realities of our planet: living in cool, comfortable dwellings even in hot, humid regions of the world; eating any foods we desire, no matter the time of year and what’s “in season”; jetting vast distances in a single day; consuming all other species for food or other purposes, even animals that are much larger and stronger than we are and even animals that are, like chimpanzees, our close genetic relatives. I’d guess that all of us, in some way or another, fit the patterns I have just described. I know I do, even though I am a so-called “environmentalist.”

Some scholars, in this age of the Internet, have gone so far as to argue that physical “place” is no longer meaningful—that we truly inhabit “cyberspace” rather than the world of nature. And yet, and yet … we eat, drink and breathe. We require physical space for our bodies. Many would claim that we are not spiritually satisfied unless we can feel the breeze brush across our skin, hear birds chittering in the yard or near the city streets we walk along on the way to school or work. To counter Simon Estok’s notion of ecophobia, we have what biologist Edward O. Wilson has described as “biophilia,” an intrinsic love of living things—some might expand upon this and suggest that there is, in human beings, an essential love of the world that motivates many of our behaviours, even perhaps our wish to continue living and to produce students and biological offspring who might similarly love and celebrate the Earth.

The point of showing that these biophilic and biophobic impulses compete with each other in the human mind is to suggest that our relationship with the natural world is complicated and often contradictory. In reality, this is not simply a twenty-first-century, urban, first-world situation—a result of industrialisation and the skeptical reasoning of the postmodern age. From the very beginning of our existence as a species, human beings have pondered our relationship with other beings in pragmatic, aesthetic and philosophical ways. How can we grow certain plants in order to eat them, hunt animals that are larger and swifter than ourselves? What kind of pigment might be used to depict deer or ox-like animals on the walls of caves in the Pyrenees Mountains of southern Europe? What is the difference between domestic animals who live among humans and wild animals who exist with a different degree of agency, apart from our own kind?

A few years ago, while giving a series of lectures in Toulouse, France, I visited a place called Grotte de Niaux, where people had imprinted colourful images of antelope-like animals on cave walls half a mile underground some 14,000 years ago. Other nearby caves, such as the famous ones in Lascaux, are thought to be thousands of years older than that. A few days after visiting Niaux, I went to Seattle, Washington, to talk with photographer and digital artist Chris Jordan, who uses cutting-edge computer software to manipulate thousands of images of SUV logos or cell
phones or plastic bags in order to create artworks, such as those in his 2009 book *Running the Numbers: An American Self-Portrait*, that aim to spur citizens in one of the world’s most intensely consumerist societies to wake up to the implications of our vast exploitation of planetary resources and the pollution resulting from our discarded consumer goods. Jordan refers to the process of his work as “the trans-scalar imaginary.” Although I have mentioned a few examples of visual art to represent the “environmental art” that has existed from the most ancient human cultures to the present, the same fascination with and confusion about the human relationship with nature has inspired songs, stories and reports about nature and our relationship with the world beyond ourselves in all human cultures across the planet. In the modern academic context, we tend to speak about poetry, fiction, nonfiction and drama to describe major types of “literature.” But in some ways we are really talking about the same categories of communication—song, story and informative report—that humans have always relied upon to convey meaningful, delightful and useful ideas to each other.

What I have tried to describe above is the need for “environmental art” (which would include literature and visual art, but also music, theatre, film/TV and other forms of human expression) in order to help us understand our complicated and sometimes paradoxical relationship to the natural world.

But how this is connected to ecocriticism? If environmental art is a mode of human communication that explores and describes human relationships to nature in “beautiful” or “aestheticised” ways, then ecocriticism is the mode of scholarship that seeks to explain or contextualise this art. In other words, a poem about seasonal processes, such as Robert Frost’s “Spring Pools,” a poem published in the United States in the 1920s, would be an example of *environmental literature*; the 2006 article by Glenn Adelson and John Elder titled “Ecosystems of Meaning in Robert Frost’s ‘Spring Pools’” is a work of *ecocriticism* that explains Frost’s poem.

What’s especially exciting about my example here, the Adelson-Elder paper, is that the co-authors are a biologist and a literary scholar, and their collaborative effort, reaching across disciplines, provides a startling new interpretation of Frost’s famous poem. Typically read as a dark and depressing poem about the “blotting out” of delicate spring flowers in the Northeastern United States by the shadows of summer leaves, the poem actually suggests, to the ecologically astute reader, that the spring flowers merely become invisible during summertime, as the above-ground flowers vanish, leaving the plants alive at the level of under-ground roots. When read together by the scientist and humanist, in the spirit of interdisciplinary ecological criticism, the brooding poem about competition and death turns into a poem celebrating the persistence of life. Because literary scholars so often
do their work in an individual way, let me highlight here the wonderful possibilities of collaborative research in this field. This can mean teamwork among colleagues in the humanities or even teamwork across different disciplines. To me, this 2006 article by Adelson and Elder is a particularly brilliant example of such interdisciplinary ecocritical teamwork.

Let me illuminate the field further by offering an introduction to some of the varieties of ecocritical scholarship from around the world. The actual term “ecocriticism” was first used in the title of a 1978 article by William Rueckert: “Literature and Ecology: An Experiment in Ecocriticism.” This article floated the term out to the scholarly community, but few people picked up on the word until years later. Scholars had actually been studying natural themes and environmental issues in literature for many years prior to Rueckert’s use of the word “ecocriticism” in the late 1970s. David Mazel, for instance, published a collection of proto-ecocritical writings called *A Century of Early Ecocriticism* in 2001, identifying many works between 1864 and 1964 that provide a foundation for contemporary ecocritical work. Although Rueckert may have been the first scholar to use the term “ecocriticism,” it was not until the 1990s that critics rescued the word from obscurity and began to apply it to the field of environmentally-focused literary scholarship that was rapidly developing at that time. One of the well-known definitions that emerged in the 1990s is Cheryll Glotfelty’s statement in the Introduction to *The Ecocriticism Reader* in 1996: she wrote that ecocriticism is “the study of the relationship between literature and the physical world” (p.xviii).

Responding to the previous tendency of literary scholars to focus their work on the artistic design of literary works and the *human* contexts of such texts (gender, psychology, social class, ethnicity and so forth), Glotfelty and the writers whose articles she and Harold Fromm collected in *The Ecocriticism Reader* recognised that it is important to think about the even larger “environmental context” of literature (and other forms of human expression). After all, as David Mazel playfully and profoundly remarks at the beginning of his book *American Literary Environmentalism* (2000), ecocritics simply study literature “as if the earth mattered” (p.1)—and since the earth does matter to all of us (including everyone doing literary criticism), then perhaps all of us should try to keep the earth in mind when we think about literature. My own definition, which I published in Laurence Coupe’s *The Green Studies Reader* in 2000, is that “[Ecocriticism is] the study of explicitly environmental texts from any scholarly approach or, conversely, the scrutiny of ecological implications and human-nature relationships in any literary text [or other artistic text], even texts that seem, at first glance, oblivious of the nonhuman world” (p.160). This statement reveals my own feeling that ecocriticism is a flexible, porous discipline, readily combining different critical strategies in order to tease out the ecological meanings
of all human expression, ranging from high art (poetry, painting, classical music etc.) to popular culture (television, advertising, rock music etc.).

Perhaps the central debate in ecocriticism today has to do with the merits of narrowing the scope of the field (i.e. pinning down an identifiable methodology, a body of acceptable texts to study or a political ideology that would fit within the boundaries of the field and thus help to define the enterprise) or maintaining the broad and somewhat baggy definition that has so far defined who ecocritics are and what they do. When British scholar Peter Barry included ecocriticism as the topic of the final chapter in the 2002 edition of his popular book *Beginning Theory*, he articulated several specific tactics that he associated with the environmental approach to literary studies, such as re-reading canonical literary works “from an ecocentric perspective,” applying “ecocentric concepts” such as “growth and energy, balance and imbalance […]” to a variety of conditions and phenomena, placing “special emphasis [on] writers who foreground nature,” appreciating “factual” or even scientific writing which has often been neglected by literary critics, and pushing aside certain critical theories that highlight the social and or linguistic construction of reality (p.264). But after outlining certain approaches that seem to be displaying a limited array of practices, Barry concludes his introduction to the field by quoting my own comment that ecocriticism, as the poet Walt Whitman once said of himself, is large and “contain[s] multitudes” (p.269). This, in fact, is what ecocritic Lawrence Buell is getting at when he states, in *The Future of Environmental Criticism* (2005), “The environmental turn in literary studies is best understood […] less as a monolith than as a concourse of discrepant practices” (p.11). Buell suggests that ecocriticism could better be described as a group of scholars who are looking or moving in the same general direction, although they are practising their scholarship in a variety of ways. This “concourse” (think of an airport terminal as an area through which passengers and workers are moving in recognisable directions, although individuals may be weaving this way and that) may suggest a general interest in matters environmental, although the particular concerns of readers and critics may differ.

In recent years, some ecocritics, such as Camilo Gomides at the University of Puerto Rico and Simon Estok (mentioned above) from Sungkyunkwan University in South Korea, have argued that we need a narrower, more precise methodology for the field. Gomides put a “new definition of ecocriticism to the test” in a 2006 article, writing: “Ecocriticism: The field of enquiry that analyzes and promotes works of art which raise moral questions about human interactions with nature, while motivating audiences to live within a limit that will be binding over generations” (p.16). This is an elegant and fascinating definition, admirable in various ways, not the least of which is the possibility that art and scholarship might work together to guide audiences to more careful strategies for living on the Earth.
When I read this definition I find myself thinking of Native American author Joseph Bruchac’s lovely essay “The Circle Is the Way to See” (1993), in which he tells the story of Gluskabe, the trickster figure in northeastern North American indigenous traditions, who in one instance captured all the animals in the forest in his “game bag,” leaving nothing for future hunts and therefore threatening his people with starvation—after telling the traditional story, Bruchac unpacks the implications of the story for late-twentieth-century readers, applying the moral aspect of Gluskabe’s unthinking exploitation of nature to our own contemporary habits. In a way, Bruchac’s interpretation of this particular story is the perfect demonstration of what Gomides is calling for.

Along similar lines, Estok, in the same 2009 article I mentioned at the beginning of this essay, states:

*The strategic openness that characterizes early ecocriticism has become to a certain degree ambivalent, garnering success for ecocriticism in its bid to gain footing and credibility in academia, but also resulting in some uncertainty about what ecocriticism does or seeks to do, some sense that “we’ll work it all out as we go along,” to borrow a phrase from Dr. Sarvis in Edward Abbey’s The Monkey Wrench Gang. The Edge seems to have become blunted.* (p.10)
and environmental artists from various cultures, I have noted striking differences in terminology and aesthetic and political priorities. Let me sketch out briefly what I mean by this. In Australia, a country which has produced some of the world’s leading ecocritics, there are dramatic geographical extremes, ranging from fiercely dry deserts to lush tropical forests, from alpine heights to a vast seacoast. Ecocritics in that part of the world are naturally prone to what I would call “geographical determinism,” a way of understanding literature and experience that foregrounds the effects of place on language and state of mind. Perhaps the most explicit statement of this view is Mark Tredinnick’s 2005 book *The Land’s Wild Music: Encounters with Barry Lopez, Peter Matthiessen, Terry Tempest Williams, and James Galvin*, in which he argues that these American writers derive their very literary styles from their home territories (in the compendious doctoral dissertation that preceded the book, Tredinnick included Australian writers in his discussion). Tasmanian scholar Peter Hay, the author of *Main Currents in Western Environmental Thought* (2002), has made comparable claims about his native island and about island cultures more generally. Meanwhile, Roslynn D. Haynes makes powerful claims for the influence of heat and aridity in Australia’s “red centre” on artistic expression in her study *Seeking the Centre: The Australian Desert in Literature, Art and Film*. These are just a few examples from Down Under.

In the People’s Republic of China, where the field of ecocriticism is currently booming (of course, out of 1.4 billion people you would expect there to be hundreds of literary scholars taking environmental approaches to their work!), there are some uniquely Chinese angles. For instance, in his 2006 book *The Space for Ecocriticism* (published in Chinese), Lu Shuyuan has an entire chapter analysing the “semantic field” of the character 風, which means “wind”—a particularly rich and multilayered concept in Chinese geomancy (known as “feng shui”). There are diverse approaches throughout Chinese ecocriticism, but another conspicuously local one is the tendency of ecoaestheticians such as Zeng Fanren and Cheng Xiangzhan to discern some of the core precepts of classical Chinese philosophy, including the Song Dynasty (969-1279 A.D.) phrase “tien ren he yì” (the harmonious oneness of the universe and man) or fourth-century B.C.E. thinker Chuang-zi’s idea “ziran da mei” (nature is the most beautiful), in literature and art and to use the elegant expression of such ideas to sway the juggernaut of contemporary Chinese consumer society towards a new path.

In India, on the other hand, ecocritic Nirmal Selvamony leads a group of scholars who are intent on applying “tiNai” (the body of traditional Tamil ecological thought from the southeastern region of the subcontinent) to the study of literary works. In South Africa, Dan Wylie has tried to imagine how “Bushman” views of nature
might help to shape a locally appropriate southern African insight into texts and place. French scholar Bertrand Westphal developed the idea of “la geocritique” as a way of applying theoretical concepts like Deleuze’s “transgressivity” and Derrida’s “referentiality” to spatial experience, while across the border in Germany, Hubert Zapf leads a research group at the University of Augsburg dedicated to understanding “Kulturökologie,” a quasi-Hegelian mode of analysis that finds ecological tensions in literary works. The list goes on and on, from Turkey to Argentina, Finland to Japan. The difficulty—no, the diplomatic and practical impossibility—of squeezing so many different perspectives into a narrow mode of ecocriticism explains why I strenuously support a more pluralistic view of the field.

The strongest tendencies in contemporary ecocriticism are the application of environmental perspectives to local literatures around the world or the comparison of literary works across languages and cultures. Patrick D. Murphy recognised the importance of the comparative approach in 2000 when he wrote the following in his book *Farther Afield in the Study of Nature-Oriented Literature*:

*If ecocriticism has been hindered by too narrow an attention to nonfiction prose and the fiction of nonfictionality, it has also been limited by a focus on American and British literatures. In order to widen the understanding of readers and critics, it is necessary to reconsider the privileging of certain genres and also the privileging of certain national literatures and certain ethnicities within those national literatures. Such reconsideration will enable a greater inclusiveness of literatures from around the world within the conception of nature-oriented literature. It will also enable critics and readers such as myself, who focus primarily on American literature, to place that literature in an internationally relative and comparative framework. I see such reconsideration as one of the ways by which we can refine our awareness and expand the field of ecocriticism.* (p.58)

Indeed, many of the leading international ecocritics, such as Ken-ichi Noda and Katsunori Yamazato in Japan and Won-Chung Kim and Doo-ho Shin in South Korea, were trained as specialists in American literature, but in recent years have begun to write articles about environmental aspects of Japanese and Korean literature or have performed comparative studies of such authors as Miyazawa Kenji and Gary Snyder. I have found myself drifting increasingly toward comparative ecocritical studies, although I was also a specialist in American literature as an undergraduate and graduate student. I have described some of my courses in comparative ecocriticism in the essay “Teaching United States..."
Environmental Literature in a World Comparatist Context.”

Earlier in my career I tended to teach courses on environmental literature that focused narrowly on American writers, such as surveys of American nature poetry or courses on The Transcendentalist Tradition (from Emerson and Thoreau up through Annie Dillard and Barry Lopez in the present), but more recently I have begun emphasising comparative approaches to environmental literature. A few months ago, for instance, I taught a seminar for graduate students at the University of Nevada, Reno, in the United States on the topic, Comparative Ecocriticism and International Environmental Literature. In my recent courses, I have included such authors and texts as Basho’s *The Narrow Road to the Deep North* (Japan, 1966 English trans.), Gao Xingjian’s *Soul Mountain* (China and France, 1990/2000), Marjorie Agosín’s *Of Earth and Sea: A Chilean Memoir* (Chile, 2008), and Homero Aridjis’s *Eyes to See Otherwise/Ojos De Otro Mirar: Selected Poems* (Mexico, 1998). Each of these authors—and many others from East Asia and Latin America, Africa and South Asia—would merit inclusion in a high school or university course on environmental literature. In my course a few months ago, because I had just attended a conference on Scandinavian environmental studies at the Swedish Embassy in Washington, DC, I decided to use such works as Peter Hoeg’s *The Woman and the Ape* (Denmark, 1997) and Kerstin Ekman’s *Blackwater* (Sweden, 1997) along with a diverse assortment of texts, including Alejo Carpentier’s *The Lost Steps* (Cuba, trans. 2001), J.M.G. Le Clézio’s *The Prospector* (France, trans. 1993) and *The Round and Other Cold Hard Facts* (France, trans. 2002), Zakes Mda’s *The Whale Caller* (South Africa, 2006), Witi Ihimaera’s *The Whale Rider* (New Zealand, 1987), Orhan Pamuk’s *Istanbul: Memories and the City* (Turkey, trans. 2004), and Tim Winton’s *Dirt Music* (Australia, 2003) and *Breath* (Australia, 2009), among others. (For many more examples of global environmental literature, see the “Booklist of International Environmental Literature” published in *World Literature Today* in January 2009.)

The main point here is, as I have been suggesting throughout this essay, that environmental expression is a global phenomenon, and while there are certainly important commonalities across cultures, it also seems important to recognise the rich local idiosyncrasies as well. As for ecocritical strategies and emphases, despite all efforts to develop what Turkish critic Serpil Oppermann half-jokingly calls “a universal field theory of ecocriticism” (echoing similar efforts in the field of physics), pluralism remains the name of the game.

All of this must seem rather humourless and boring to people who just want to get a sense of what the environmental approach to literature is all about in order to teach or take a basic English class. There is actually plenty of melodrama in the field with scholars taking each other to task for mis-describing fish (see Dana
Phillips’s *The Truth of Ecology*), writing in too celebratory a fashion about the beauty of environmental literature (see Michael Cohen’s “Blues in the Green”), and seeming overly enamoured with critical theory for some people’s taste (see S.K. Robisch’s “The Woodshed”). There is also humour—at least a little bit of it. Michael P. Branch gave a talk called “How Many Ecocritics Does It Take to Screw in a Light Bulb?” at a session on environmental humour at the June 2011 Association for the Study of Literature and Environment Conference in Bloomington, Indiana. His answer: 10. Branch’s 10 ecocritics contemplating the need for artificial light range from the gender-sensitised scholar concerned about the phallic shape of a light bulb to the energy-conscious critic who wonders if we should instead be unscrewing light bulbs! The final two ecocritics, according to this list, do not accomplish much screwing-in or unscrewing at all, but instead “argue about whether the light emitted by the bulb is first-, second-, or third-wave.”

What is all this talk about waves? I would like to conclude my overview of ecocriticism here by reflecting briefly on the recent history of ecocriticism. For a fuller discussion of this, you can track down my 2009 article on “The Third Wave of Ecocriticism.” Lawrence Buell started the use of the wave metaphor to describe the progression of ecocritical approaches in his 2005 book, which I have cited above—this approach follows the description of feminist scholarship as a series of waves. Buell wrote:

> No definitive map of environmental criticism in literary studies can [...] be drawn. Still, one can identify several trend-lines marking an evolution from a “first wave” of ecocriticism to a “second” or newer revisionist wave or waves increasingly evident today. This first-second wave distinction should not, however, be taken as implying a tidy, distinct succession. Most currents set in motion by early ecocriticism continue to run strong, and most forms of second-wave revisionism involve building on as well as quarreling with precursors. In this sense, “palimpsest” would be a better metaphor than “wave.” (p.17)

I certainly agree with the idea that a palimpsest would make a better metaphor here, as it suggests as reality that early approaches to the field continue to be active and important even in the present—they do not disappear as actual waves in the sea vanish when replaced by newer waves. Still, the notion of a recognisable sequence of trends in the field does make sense.

Here is a thumbnail summary of the major sequences I have noticed in my quarter-century working in the field:

- Starting around 1980, but continuing to the present, we had an initial surge (a “first wave”) of ecocritical work, even before people were generally using the term ecocriticism. This groundbreaking work tended to focus
on literary nonfiction (so-called “nature writing”); there was a strong emphasis on non-human nature (or “wilderness”), as represented in literature; initially the field was oriented towards American and British literature; and “discursive” ecofeminism was one of the most politically engaged sub-movements within the field.

- We can date the second wave to approximately the mid-1990s (continuing to the present) when the field began to expand to encompass multiple genres (and even popular culture—some would call this “green cultural studies”); the works and authors being studied became increasingly multicultural; we saw an increasing interest in local environmental literatures around the world; environmental justice ecocriticism began to emerge at this time, especially with the publication of The Environmental Justice Reader: Politics, Poetics, and Pedagogy in 2002; and the scope of ecocriticism expanded to include urban and suburban contexts in addition to rural and wild locations.

- Joni Adamson and I began using the term “third wave ecocriticism” in our introduction to the Summer 2009 special issue of MELUS: Multiethnic Literatures of the United States. Initially, we focused on the comparatist tendency in new ecocriticism, dating back to approximately 2000—comparisons across national cultures and across ethnic cultures. But later I began to describe other notable trends: the melding and tension between global concepts of place (“eco-cosmopolitanism” a la Ursula Heise) and neo-bioregionalism (as in Tom Lynch’s discussion of “nested” bioregions); a rising emphasis on “material” ecofeminism and multiple gendered approaches (including eco-masculinism and green queer theory); a strong interest in “animality” (evolutionary ecocriticism; animal subjectivity/agency, vegetarianism, justice for nonhuman species, and post-humanism); critiques from within the field (such as those by Phillips and Cohen, mentioned above) that have contributed to the growing maturity of ecocriticism; and various new forms of ecocritical activism (such as John Felstiner’s use of poetry as a means of environmental engagement).

- In 2008, Stacy Alaimo and Susan Hekman published the book Material Feminisms, which included Alaimo’s article “Trans-Corporeal Feminisms and the Ethical Space of Nature,” a study that vividly demonstrates how the human body is essentially embedded in the physical world and how literary texts illuminate both the material and the ethical implications of physical phenomena that pass between our bodies and the body of the Earth. In the Editor’s Note for the Autumn 2012 issue of ISLE: Interdisciplinary Studies in Literature and Environment, I referred to the growing tendency among ecocritics to focus on “the fundamental materiality
... of environmental things, places, processes, forces, and experiences” as a new “fourth wave of ecocriticism.” This was soon manifested in the 2014 book \textit{Material Ecocriticism}, edited by Serenella Iovino and Serpil Oppermann.

All of this might seem like more than you need to know if you are just dipping your toes into the ocean of ecocritical scholarship. Do not worry—the water’s warm. (Some, such as Alaska author Marybeth Holleman, who writes about endangered polar bears in the Arctic, might say \textit{too} warm—but that is another story!)

The goal of this introductory essay is to offer a welcoming, informative initiation to one of the most energetic and socially urgent branches of research and creative activity in the humanities, a field of inquiry that has certain trends and traditions of its own but one that also porously absorbs vocabulary and ideas from many other kinds of literary analysis and from other disciplines as well. I hope my thoughts here will encourage readers to do their own study of the environmental dimensions of literary texts and other forms of human expression.

\textbf{REFERENCES}


**Note:**

About the Author