



ECOCENE

CAPPADOCIA JOURNAL OF ENVIRONMENTAL HUMANITIES



Volume 1/ Issue 1/June 2020

Environmental Humanists Respond to the World Scientists' Warning to Humanity



Seeds of Transformative Change

Steven Hartman

University of Iceland, Iceland

steven.hartman@mdh.se

ORCID: 0000-0002-4474-1615

Serpil Oppermann

Cappadocia University, Turkey

serpil.oppermann@kapadokya.edu.tr

ORCID: 0000-0002-7345-7816

Hartman, Steven, and Serpil Oppermann. 2020. "Seeds of Transformative Change." *Ecocene: Cappadocia Journal of Environmental Humanities* 1, no. 1 (June): 1-18.

<https://doi.org/10.46863/ecocene.2020.1>

Research Article/ Received: 12.02.2020 /Accepted: 09.06.2020

This work is licensed under a Creative Commons Attribution 4.0 International License.



Seeds of Transformative Change

by Steven Hartman and Serpil Oppermann



About the Authors

Steven Hartman is Visiting Research Professor at University of Iceland. He leads the Circumpolar Observatory group based at Stefansson Arctic Institute in the [Humanities for the Environment](#) global observatory network and serves as Assistant Director of the Human Ecodynamics Research Center at City University of New York Graduate Center. Hartman's work addresses environmental memory in literature as well as co-production of knowledge and public action on climate change. He heads up the sustainability communication, education and public engagement project [Bifrost](#) and is also co-leading strategic efforts to launch the BRIDGES Sustainability Science Coalition in close cooperation with UNESCO and the International Council for Philosophy and Human Sciences. Hartman is co-editor of *Ecocene*.

Serpil Oppermann is Professor of Environmental Humanities at Cappadocia University, Turkey, and the Director of Environmental Humanities Center. She has been the seventh President (2016-2018) of the European Association for the Study of Literature, Culture, and Environment (EASLCE). She serves on the advisory boards of several international organizations, including [Bifrost](#). She is also a member of the advisory council of METI (Messaging Extraterrestrial Intelligence) in San Francisco. Her most recent co-edited publication is *Environmental Humanities: Voices from the Anthropocene* (2017). Her work explores the entanglements of human and more-than-human environments from the intersecting perspectives of natural sciences and environmental humanities.

Seeds of Transformative Change

Steven Hartman and Serpil Oppermann

Welcome to the inaugural issue of *Ecocene: Cappadocia Journal of Environmental Humanities*, a peer-reviewed, open-access journal for the growing international community of environmental humanists committed to the Earth and all its inhabitants. *Ecocene* aspires to stimulate, and challenge, this increasingly diverse community by foregrounding interdisciplinary, transdisciplinary and post-disciplinary approaches to research and scholarship. Though appeals for border-crossing approaches along such lines are often hallmarks of programmatic calls for transformative knowledge-action frameworks in environmental studies and sustainability science, they remain underserved by appropriate publication outlets that seek, by design, to engage a plurality of disciplines and knowledge domains on questions of common interest.

As a journal also aligned with the principles of *integrated* environmental humanities *Ecocene* seeks to bring synergistic added value to the constellation of journals and academic discourse communities that have long facilitated quality scholarly and scientific exchange in a spirit of interdisciplinary environmental inquiry.¹ *Ecocene* is intended as a forum for discussion and debate, for sharing knowledge and for showcasing novel interdisciplinary approaches to co-design of research, education and action on climate change and the global crises of biodiversity loss and species extinction, among other vulnerabilities that define the Earthly present. There is a clear need for more interdisciplinary fora for quality research and educational exchange in order to help build transdisciplinary capacities among different academic knowledge domains, as well as between the academy and non-academic stakeholders in society. Beyond the intrinsic value of the individual studies the journal will publish each year in two issues, the editors hope that *Ecocene* may serve as a model of how we can work to encourage and learn from interdisciplinary exchanges that bring together a diversity of knowledge and discourse communities.

Supporting Communities of Interest, Practice and Purpose

The founding editors of *Ecocene* work from the presumption that heterogeneous communities of scholars, artists and scientists can come together from diverse academic traditions based on an underlying interest in common research questions or a desire to address specific social-environmental problems.

As multidisciplinary *communities of interest* such self-organizing groups can develop ways of learning collectively from theoretical perspectives or experimental results that complementary disciplines may bring to common questions. In the process of negotiating sometimes significant methodological, theoretical or epistemological differences and finding common grounds for understanding and cooperation, such groups have the potential to develop into interdisciplinary *communities of practice*. Discipline-specific understandings that are brought to particular research questions or focuses can certainly disseminate beyond so-called specialist knowledge silos through the sharing of data, methods and study results, and such processes are central to the kind of mutual learning that is a hallmark of effective interdisciplinary study. By the same token, fuller understandings—even *new knowledge*—can arise from synergistic exchange among specialists when complementary disciplinary perspectives align in unanticipated ways to yield novel results. Interdisciplinary processes of co-design, co-production, expertise sharing and mutual learning may be at least partly responsible for moving knowledge forward in research, promoting new understandings in learners, and applying knowledge advancements to real-world challenges. Any knowledge achieved or promoted through the kinds of interdisciplinary engagements entertained here can be mobilized by intentional *communities of purpose* to work for genuine transformative change.

Each of the kinds of research and learning communities emphasized here may tend toward its own logic of engagement: with *communities of interest* self-organizing from different disciplinary stakeholders, perhaps together converging into a multidisciplinary discourse community; with *communities of practice* favoring interdisciplinary exchange; and with *communities of purpose* operating at the interdisciplinary→transdisciplinary end of the spectrum.² We seek to make *Ecocene* a resource for each of these kinds of research and learning communities, without favoring any of them over the other. There is room for the kind of diverse disciplinary readership and authorship the journal aims to build up, whether one's orientation is multidisciplinary, interdisciplinary or transdisciplinary. As a forum for environmental humanities, *Ecocene* is also committed to a reintegration of epistemic communities that have a great deal to share and explore together in line with UNESCO's principles³ of sustainability science in research and education.

Bridging Knowledge Domains to Build New Capacities for Action

A glance at the editorial and advisory boards on the masthead of *Ecocene* gives a sense of the range of subjects, disciplines and interdisciplinary/transdisciplinary communities of practice from which the journal welcomes contributions. These are located not only in the domain of the humanities as traditionally defined but also in those of the arts, the social sciences, the environmental sciences/environmental studies and in sustainability studies more generally. They include art, film and literary studies (ecocriticism, postcolonial and cultural studies, gender studies, etc.); education for sustainability; environmental, human and physical geography; environmental philosophy; environmental sociology; historical studies disciplines (e.g. environmental history, protohistory and prehistory, historical anthropology and environmental archaeology); human and political ecology; (applied) life sciences and geosciences; media studies; and science and technology studies. Many of these areas already amount to interdisciplinary discourses integrating rich communities of theory and practice and well developed fields of inquiry, including: ecosemiotics, ecofeminist theory and criticism, critical posthumanism, material ecocriticism, animal studies, environmental ethics, (applied) environmental law, environmental psychology, environmental justice, vegan studies, digital art and culture, eco-arts and ecoliterary practice (“new” nature writing, ecopoetry, etc.), historical ecology and historical climatology.

Many of these subjects and critical-theoretical discourses are already quite porous and they hardly represent the limits of potential study areas and interdisciplinary configurations from which *Ecocene* welcomes contributions. Our ambition is to be in the avant-garde of interdisciplinary and postdisciplinary environmental humanities, not only as defined according to the field’s current scope and permutations but also according to how it will need to develop to remain relevant and responsive to a world undergoing momentous change beyond the earliest decades of the twenty-first century.

The founding editors of *Ecocene* are proceeding from the premise that new support structures need to accompany more spontaneous (or self-organizing) developments such as the emergence of new fields (like the environmental humanities) as multidisciplinary communities of interest. This is necessary to compensate for the conservative effects of existing structures like our institutions of higher education and research, which tend to be organized in traditional scientific or epistemic domains (e.g. colleges of arts, humanities or sciences; faculties of law or medicine; departments of history, chemistry, literature) whose very structures tend to pull against genuine interdisciplinary inquiry or transdisciplinary knowledge-action frameworks, to the point of passively discouraging or sometimes actively disincentivizing these innovations. *Ecocene* is intended as one modest form of structural support for an established community of

interest to help build new intangible capacities (ideally yielding tangible outcomes) through strategic communication of ideas, dissemination of knowledge and mutual learning.

Meeting the Challenges of Precarious Times

Launching a new journal is a challenging prospect under the best of circumstances. Doing so in the midst of heightened fears, ambiguities and uncertain futures precipitated by a global pandemic can bring some questions into sharper focus that, though already pressing, may have seemed somewhat abstract only a handful of months ago. In the still lengthening shadow of COVID-19 we all now bear witness to a historic moment that has dramatically forced us to reconsider unsustainable lifestyles predicated, throughout large parts of the world, on reckless systems of consumption, manufactured habits of hyperconsumerism and profligate waste. Confined to our homes throughout the early months of 2020, many of us have felt unexpectedly (perhaps haplessly) caught up in the global reach of a nexus of problems—social, economic, political, ecological, medical, personal—triggered by a world-disrupting virus we had never heard of only a year ago. Manifestly “oblivious to human intentions, desires, and motives” (Hayles 2020), having now caused 600,000 confirmed deaths throughout the world in less than half a year (as this inaugural issue goes to print), the invisible novel coronavirus (SARS-CoV-2) has also revealed how intimately interconnected we—and all living creatures—are with the rest of the biosphere, how important it is to adopt social and multispecies justice frameworks and promote a global biopolitics based on the preciousness of all life. Above all, the coronavirus has revealed our collective vulnerability as a species and “clearly spotlighted the failing logic of present socio-economic and political systems which exploit not only disenfranchised humans, but also everything else that is exploitable” (Hartman, et al. 2020).

We live in an era dominated by interconnected social-environmental vulnerabilities, with climate change, biodiversity loss, and an unfolding mass extinction among the paramount crises defining the present. Nevertheless, the nations of the world and the many cultures they encompass, large and small, have failed overwhelmingly to heed the signals of distress apparent almost everywhere in the Earth’s interlinked systems. These same societies have failed to act collectively on the momentous knowledge brought to their attention by the international scientific community on the global scale required if we are to avert consequences in the foreseeable future that could well be catastrophic. As organized at national and international levels, human societies seem unprepared to act upon the seriousness of the threats identified in ways that decisively ameliorate the risks they bear. Not even when more routine scientific assessments (such as the reports

published at regular intervals by the IPCC for the past 30 years) give way to extraordinary warnings from the scientific community, in their own version of *mayday!* shouted out through the world's news media, do we see hints of a sea change on climate change. And so now, like the protagonist of an inexorable tragedy, the coronavirus “gives ammunition,” as Jean-François Lyotard would say (1991[1979], 29), to climate change's catastrophic narrative on the world stage, reinforcing the repeated warnings of the world's scientists in the form of an incomplete yet already consequential tale unfolding among the other social-ecological emergencies and hydra-headed complexities of the Anthropocene.⁴

The Alliance of World Scientists' Warnings to Humanity

As the commissioning editors of the inaugural issue of *Ecocene*, we have chosen to frame the journal's first number around two high-profile, extraordinary warnings that have recently been issued by the scientific community, the “World Scientists' Warning to Humanity: Second Notice” (Ripple, et al. 2017) and the “World Scientists' Warning of a Climate Emergency” (Ripple, et al. 2020), by inviting response essays from a number of leading environmental humanists.

The “World Scientists' Warning to Humanity: Second Notice” (2017) presented a significantly updated version of the first “World's Scientists' Warning to Humanity” (1992) on the 25th anniversary of the original document. Organized and published by the Union of Concerned Scientists (UCS) in 1992, the original warning was distributed for possible endorsement to “all scientists worldwide who had been awarded the Nobel Prize and to national academy-level scientists in Africa, Canada, China, Europe, India, Japan, Latin America, Russia, the United Kingdom and the United States.” Over 1700 scientists representing 71 countries, including a majority (104) of living Nobel laureates in the sciences, signed this original Warning, which expressed grave concern about impending damage to the Earth from ozone depletion, marine life depletion, ocean dead zones, freshwater availability, deforestation, biodiversity destruction, climate change, and continued human population growth.

Under the auspices of a newly established Alliance of World Scientists, the Second Notice paints a bleaker picture of the state of the world than the first notice from the UCS did 25 years earlier. It highlights worsening climate change due to rising greenhouse gases from the burning of fossil fuels, deforestation, and agricultural production, pointing to “a mass extinction event, the sixth in roughly 540 million years, wherein many current life forms could be annihilated or at least committed to extinction by the end of this century” (1026). The Second Notice sounds a positive note by drawing attention to the changed situation of the ozone layer, which improved after the original

World Scientists' Warning when the Montreal Protocol's ban on production of numerous substances responsible for ozone depletion in the stratosphere went into force, stabilizing the so-called "hole in the ozone layer" by the mid 1990s. This development is offered in the "World Scientists' Warning to Humanity: Second Notice" as an example of how the international community can come together effectively to redress a significant environmental threat of planetary significance. Beyond this positive example the updated Warning underlines the rise in global average temperatures by more than half a degree since 1992, the increase in CO₂ emissions by 62 percent since 1992, the decreasing availability of fresh water, the continued disappearance of forests, and the increasing numbers of dead zones in the world's oceans. Moreover, the document establishes that while the global human population increased by more than 3 billion people between 1970 and 2012, "freshwater, marine, and terrestrial populations declined during the same time frame "by 81, 36, and 35 percent, respectively" (1027), in addition to significant decreases in the populations of mammals, reptiles, and amphibians. "Humanity is now being given a second notice," the updated Warning states. "We are jeopardizing our future by not reining in our intense but geographically and demographically uneven material consumption and by not perceiving continued rapid population growth as a primary driver behind many ecological and even societal threats" (1026).

Despite the present situation, however, William Ripple and the coauthors of the substantively updated Second Notice Warning make efforts to steer their readers away from doom and gloom scenarios by suggesting broad-stroke strategies for sustainability, reduction of food waste through education and infrastructure, promotion of dietary shifts towards plant-based foods, development of green technologies, and the establishment of economic incentives to shift patterns of consumption. They ask for support, suggesting that political leaders, media influencers and regular citizens must take immediate action "as a moral imperative to current and future generations of human and other life" (1026).

Since the Second Notice Warning apparently did not receive the attention from policy makers that its authors had hoped it might, despite the headlines and significant coverage the document received in the popular press (among other things, for its endorsement by more than 15,000 scientists from 184 countries), William Ripple and his colleagues have written a follow up text, the "World Scientists' Warning of a Climate Emergency," also published in *BioScience* (January 2020). This last Warning reiterates the point that if humanity continues its "business as usual" trajectory, a major climate disruption in "ecosystems, society, and economies" awaits, potentially making "large areas of Earth uninhabitable" (10). In this latest follow up Warning, the Alliance of

World Scientists draw attention to alarming evidence of ecological decline, increases in greenhouse gas emissions and in global surface and ocean temperatures, the increasing frequency of extreme weather events, increased ocean acidity and shrinking glaciers worldwide. The Warning also underlines the dangers of impending climate catastrophe, noting record-high increases in human population (more than 80 million per year) and decreasing energy and food supplies.

New Challenges Facing the Humanities

Fourteen environmental humanists accepted our invitations to respond to the latest iterations in the Scientists Warnings to Humanity series. The contributors to this special issue are “environmental humanists” in the broadest and most inclusive sense. *Ecocene* regards the environmental humanities as a dynamic community of researchers, learners, activists and practitioners nested in a much wider continuum of epistemic communities concerned with the human dimensions of environmental change. Our knowledge of these dimensions hardly begin and end with the cultural, aesthetic, philosophical or historical disciplines that define the humanities as an academic domain in the narrowest normative sense. In our invitation letter we underlined the circumstance that “the social sciences and the humanities currently lack assertive and visible contributions in the conversations that these warnings have inspired internationally.” We suggested, moreover, that the environmental humanities could do much more than merely amplify the warning messages of scientists “by emphasizing the often neglected cultural dimensions of social-ecological crises.” The role often envisaged for the humanities in funding calls for interdisciplinary and transdisciplinary sustainability initiatives often does not extend beyond this kind of instrumentalist role as a translator of scientific results.

Such circumscribed visions of humanities disciplines’ possible contributions in sustainability research owe to a troubling history of humanities disengagement from policy-relevant assessments and policy-engaged advisory roles, complicated by a long-term structural exclusion of the humanities from such roles by those actors and interests who typically organize science-policy interfaces. After the Paris Agreement and the Sustainable Development Goals (SDGs) were enshrined under the auspices of the United Nations in 2015, research and education in the complementary fields of global change science and sustainability science have been unfolding at significant international, national, regional and local scales simultaneously. With each passing year as we move closer to the first major benchmark of these agreements, the year 2030 (U.N. 2015, 3), the stakes involved in achieving the targets negotiated and undersigned by nearly 200 countries increase significantly, not least because the international community is not

nearly on track to accomplishing the objectives of these agreements, and consensus seems to be forming, based partly on scientific evidence not yet available when these agreements took shape in 2015, that the Paris Agreement targets in particular are now woefully insufficient. That is another matter, but it underscores the urgency of the world's present dilemma. Yet as many knowledge communities engage with (and within) global change and sustainability science research programs as relevant expertise is being mobilized in support of these agendas, the humanities in general have continued to be relatively passive and quiet, particularly in knowledge assessment and policy advisory contexts. This situation *must* change. In view of the short time frame of less than a decade before we reach the first major target date for the SDGs (2030), this change needs to occur *immediately*, unless the humanities is prepared to stand by passively watching from a distance as the nations of the world mobilize to ameliorate the great social-environmental crises of our age based on the best available expertise without the benefit of their knowledge.

Inventorying What Environmental Humanities Can Bring to the Table

All of this is much more easily said than done, however. Even widespread interest among environmental humanities scholars, matched by the intentions and will to engage in these research fields, is not enough to ensure that it will come about where and when it may count the most. If we are to bring the environmental humanities meaningfully into sustainability science and global change research and education—and into the kinds assessment processes carried out in major international organs like the IPCC and IPBES that bring science and policy together—it is necessary to create structures and occasions that can draw these communities into fruitful conversation with one another in ways that may enable all the stakeholders to come away from these exchanges wiser for the effort. This special inaugural issue of *Ecocene* focused on environmental humanists' responses to the latest World Scientists' Warnings is intended as a step in the direction of epistemic détente.

As co-signatories of the “Second Notice” and “Climate Emergency” manifestos, our aim as the editors of this special issue has been to focalize how environmental humanities can confront the implications of these scientific warnings in a time of social-ecological crisis and uncertainty. Perhaps, as Donna Haraway reminds us, “we need stories (and theories) that are just big enough to gather up the complexities and keep the edges open and greedy for surprising new and old connections” (2016, 101). We not only want to “keep the edges open ... for surprising new and old connections” but also seek answers to the question of why the social sciences and the humanities currently lack assertive and visible contributions in the conversations that these warnings have inspired

internationally. We do believe that the collective knowledge of the environmental humanities has the potential to influence policy and governance. We believe it can do so not only by amplifying or translating the warning messages of scientists into a more accessible popular idiom, nor solely by emphasizing the neglected cultural dimensions of social-ecological crises (as important as both of these roles are), but by expanding the toolbox of mitigation and adaptation strategies and measures to include a range of underexplored dimensions of the human experience of environmental change (perceptions, values, ethics, cognition and affect, interpretation, critical responses, historical depth, to name but a few) that humanists spend their careers studying and working to better understand. In this sense, we hope that this inaugural issue of *Ecocene* can set a tone and initiate a trajectory for the journal that may over time help to sow seeds of transformative change.⁵

We need to explore such possibilities now especially (as of June 2020) when the COVID-19 pandemic “brings tremendous suffering, yes, but...may also offer new possibilities of connection and understanding, wisdom and change” (Hartman, et al. 2020). As Kim Stanley Robinson wrote in early May, 2020, “the virus is rewriting our imaginations. What felt impossible has become thinkable. We’re getting a different sense of our place in history. We know we’re entering a new world, a new era. We seem to be learning our way into a new structure of feeling.” The present crisis is understandably a frightening and disorientating experience for many people struggling to cope with suffering, panic, and grief. The pandemic reminds us of a fact that Katherine Hayles specifically underlines in her short article “Novel Corona: Posthuman Virus”: “although humans are dominant within our ecological niche, many other niches exist that may overlap with ours and that operate by entirely different rules. It screams at jet-engine volume that we are interdependent not only with each other but also with the entire ecology of the earth” (April 17, 2020). This is precisely the message the Alliance of World Scientists have been emphasizing in their Warnings to Humanity, as they try ever more desperately to direct our attention to the biosphere’s degradations, deforestation, rising greenhouse gases in the atmosphere, invasive alien species, biodiversity loss, continued consumption of fossil fuels, meat industries, and changing climate (“Second Notice” 2019). The urgent need for action that they also highlight in the “World Scientists’ Warning of a Climate Emergency” (2020) is underscored by the fact that the climate crisis is “accelerating faster than most scientists expected” (9). Calling therefore for “bold and drastic transformations regarding economic and population policies” they suggest “six critical and interrelated steps” (10).⁶

The field of the environmental humanities is well suited to respond to these warnings, as the human factor is now widely acknowledged as the main driving force

behind transformations in land, water, and air that will have catastrophic ends if not ameliorated. Many environmental humanists have long argued that the ecological crisis is the material consequence of an anthropocentric worldview, with its illusory sense of an ontological divide between the human and nonhuman worlds. The legacy of this dissociation (disruption of the Earth's rhythms, biocycles, species, and ecosystemic processes) raises complex ethical and social questions, particularly in regard to socioeconomic inequalities, social injustices, and environmental health problems encountered by disadvantaged and disempowered communities around the world. In engaging with the socio-cultural dimension of planetary emergencies in both local and global contexts, some environmental humanists argue that environmental research conducted only through scientific disciplines is bound to be incomplete and inadequate, particularly when the social and cultural dimensions of ecological crises are not integrated into research protocols, scientific (knowledge) assessments and policy-setting frameworks. Moreover, it has become widely acknowledged that scientific evidence alone does not motivate human beings to make necessary changes in their daily lives, let alone in national or international economic practices and political agendas. As Ursula Heise reminds us, "simple insistence on scientific facts remains politically ineffective when it is disconnected from the political, social, cultural, affective, and rhetorical forms that the climate problem takes in different communities" (2017, 3).

Preview of 14 Environmental Humanists' Responses to the World Scientists' Warnings

In his response essay in this issue, Noel Castree sees "much to commend in the view that the environmental humanities is, at base, "an interdisciplinary 'crisis field,'" as biologist Michael Soulé characterized the field of conservation biology in the 1980s, namely "as a new mission-orientated endeavor with pressing timelines."

Where geoscientists are speaking of a planet in crisis, humanists are speaking for a world where the societal causes, impacts and responses to crisis need to be narrated and communicated widely. In this light, the challenges for the immediate future might seem to be two-fold: (1) how to coordinate research *within* the environmental humanities and *between* it and STEM disciplines; (2) how to make the environmental humanities more visible and impactful outside universities.

Even if we accept science as "the open-minded search for truth . . . whether we like it or not," as Dorion Sagan underlines in his response essay, people are much more likely to be

influenced and motivated by storytelling, music, and art than by scientifically rigorous presentations of data. A number of the response essays tend to consider the detached posture of scientific objectivity to be among the key reasons why the general public has not been convinced by scientific communications concerning the threats climate change poses for species survival. Several possible solutions are offered from environmental humanities research perspectives.

In his response, Scott Slovic criticizes the “World Scientists’ Warning” letter from a similar perspective, arguing that it presents “a flood of convincing information about the direness of our climate predicament” but lacks “strong, engaging prose.” Scientific communication that includes too much technical information about global climate change may lead to “psychic numbing,” Slovic asserts. If one of our principle challenges now is to draw people’s attention to climate change “and make them care enough to act,” then using “individualized stories” that “humanize data” is a strategy Slovic recommends. But in this approach the environmental humanities remain confined to an instrumental role.

Bronislaw Szerszynski’s essay is also critical of the Warnings’ objective scientific style. Szerszynski writes that the warning documents “seem to draw on the registers of scientific objectivity to give a sense that we are helpless before the facts; that acting is not optional.” Szerszynski draws attention to “the experiences of non-Western peoples and colonized peoples, whose historical experience belies the ‘Warnings’ unified narrative of a culpable ‘humanity’ facing a unique global environmental apocalypse.” Such challenges, he argues, can be overcome if we “transcend the boundaries between academic disciplines.”

Marco Armiero’s essay raises key questions about “telling the (scientific) truth’ about climate change and the global ecological crisis” which, he insists, is not “enough to lead people to action.” Instead of compartmentalizing this translational role within the environmental humanities community, Armiero turns the question back on the scientific community:

We are told that science can be ethically committed but not politically engaged, or even less, militant. As the reader might have already grasped, I am among those who would instead welcome a politically engaged science. My argument is that scientists might agree that climate change is real and is caused by humans (although we might question the choice to blame the crisis on a universal human species), but this leaves radically divergent solutions still on the table.

Nathalie Blanc critiques the incompleteness of the risk models scientists rely upon, without necessarily calling into question the overall conclusions that have motivated the Scientists' Warnings. The point of contention rather concerns the fuzzy human dimensions of the models relied upon, because "extrapolating historical trends can only lead to a poor assessment of climate-related risks, as these risks barely materialize." Many of the uncertainties relating to climate change Blanc sees as clearly "related to the climate models themselves, and their chain of consequences and impacts, particularly in a globalized context." She notes that "standard approaches to risk modelling that extrapolate historical values (e.g. market prices) are no longer valid in a world fundamentally reshaped by climate change. The obstacle is scientific in particular, and there is no doubt that the response to these difficulties is to promote epistemological innovation."

Robert Boschman's essay on Alberta as a climate change tragedy provides a powerfully tangible example of poor political choices. He unpacks how "the province's 2019 election of a right-wing government determined to extract and transport heavy oil from its northern oil sands" ensures that "the global environmental hazards posed by fossil fuel here will go on." Boschman details how a particular local and regional history is inextricably bound up in one of momentous questions of our time globally, making "this oil-laden province a theatre for tragedy in which the collision between facts and politics unfolds while the world watches and suffers the consequences."

Another moving essay attesting to the legacy of political choices is Stephanie Foote's treatment of Appalachia as an "example of destructive social and economic policies" with "the most persistent economic and environmental damage" in the US. As "the bellwether region for all of the country's most intractable economic and social problems," Foote argues, Appalachia is home to an energy industry "enriching only corporations while polluting the air, water, and land of the citizens who believe that leasing their mineral rights to fracking corporations will make them financially comfortable."

The majority of the response essays foreground social, ethical, and political dimensions of climate change and declining environments, addressing how it may be possible to move beyond the problems that led to ecologically unsustainable and socially unjust systems, but also highlighting the considerable obstacles we face, particularly if we allow ourselves to slip into the fallacies of totalizing narratives that rely on uniform conceptions of nature, culture, science, and the human. Indeed, Steve Yearley observes that a distinctive feature of the Scientists' Warnings is how they are addressed to "humanity."

This extension of the usual recipient seems to be driven by two considerations: first, that the problem is globally urgent so that action cannot be left to governments alone, and—second—that everyone has a stake and some form of involvement in the phenomena so that each of us can become part of the solution.

Yearley notes that “it cannot be taken for granted that ‘humanity’ has a unified outlook on global environmental problems. . . . Some individuals may have lives that feel so intolerably disadvantaged that they are not convinced that environmental change will truly make them worse.”

This view is underscored even more forcefully by Rosi Braidotti: “Let it be stated loud and clear that appeals to a common humanity are misleading except as aspirational goals: the human is not at all a neutral category. Humanity is rather a selective and exclusionary category that polices access to rights and entitlements.” Marginalized subjects, Braidotti reminds us, are “sexualized others (women, LBGTQ+) ... racialized others (non-Europeans, indigenous people) ... and ... naturalized others (animals, plants, the Earth)” whose “voices, experiences, perspectives and knowledge constitute powerful but as yet untapped alternatives.”

To these critical notes Simon Estok observes that, unlike news about COVID-19, climate change discourse “is riddled with paralyzing abstractions and an inability to produce a clear object against which to focus our energies.” Addressing the critical challenge of understanding “how deeply engrained counter-productive ideologies are in the very discourses we use to evoke change,” Estok argues that both the “speciesist and misogynist discourse” encoded into the very language of science “are ecophobic.” He highlights some of the exceptional difficulties involved in “making information about environmental issues appealing enough for broad audiences to commit to broad changes” as a key “challenge that we still haven’t met.”

Cecilia Åsberg’s response essay offers a different approach that engages with “feminist and situated practices of posthumanities,” which she sees as having “the potential to productively mitigate shortcomings inherent in the disciplinary practices that make up the diversity we have come to term environmental humanities.” For Åsberg, “the alarmist notions of climate change, environmental deterioration and diminishing species diversity fulfil an important function (they instigate needed social change),” but like some of the other respondents she also argues that they are locked in a “modern environmental discourse on (generic) Humans *versus* (reified) Nature assisted by (monolithic) Science.” As if in dialogue with Braidotti on this final point, Åsberg’s response essay encourages us to see the world in terms of “nonhuman powers, and how they process the world *with us in it*.” If we notice the more-than-human and nonhuman

forces, we can better understand “enviroment embodiment/embodied environment” and leave “prejudice, even hate, and dead ideas behind us.”

As epitomized in the response articles, “the environmental humanities engages with fundamental questions of meaning, value, responsibility and purpose in a time of rapid, and escalating, change” (Rose et al. 2012, 1). The field combines “studies in science, culture, humanities, and social sciences into one transdisciplinary praxis” and “recruits diverse disciplinary approaches to confront the causes of ecological degradation” (Gladwin and O’Connor 2017, 42).

The response essays in this issue convey the field’s insistence on the power of narrative “to keep the edges open for ... new and old connections” (Haraway), without questioning the conclusions of the scientific warnings at this critical moment when increased collaboration between diverse knowledge communities and stakeholders seems an obvious way to promote social-ecological well-being. Clearly that well-being is dependent upon human practices, as Dorion Sagan reminds us in his contribution: “We need to experiment with multispecies cultures, re-finding our place in more diverse ecosystems.” The environmental humanities thematize this process of re-finding our place in the biosphere through narrative representation as a way of making scientific facts more meaningful. Environmental humanists often foreground diverse small narratives which lay bare the ecological effects of multinational capitalism not sufficiently kept in check. Nathalie Blanc advocates “scientific approaches based on narrativities.” For Blanc, “narratives, although insufficient, could open up the materiality of climate change and related risks linked to non-linear dynamics (natural, technological, societal, regulatory and cultural, among others).”

Arguing for “the power of the environmental humanities: to engage the senses, to make us more attentive to the world around us, to stimulate the heart and the imagination,” Ann Fisher-Wirth emphasizes creativity and the effective use of narrative, offering a prose poem as “an example of a fruitful relationship between science and environmental humanities.” She reminds us that “environmental arts and humanities engage with living beings, not just statistics” and through their interventions specific subjectivities and agencies of nature can live in the minds of human auditors not as mere abstractions but as individual subjectivities brought to life again and disseminated, almost as seeds bearing powerful ideas, values, or emotions, or as factual correspondences to vital environmental realities, all of them holding the potential for ecological revelation and guidance.

At the same time environmental humanities scholars also tend to emphasize the seamlessness of the line between the natural and the cultural, continually reminding us of the inextricable interconnectedness of all life in the biosphere with human societies in

forms (ethical, biological, aesthetic and emotional) that go far beyond material resource flows. Addressing the dangers of totalizing narratives in her article, Stephanie Foote warns that “universalizing narratives about the subject have reified the division between the human and the inhuman world, erasing the agency of the nonhuman and reducing it to mere resource to be managed, contained, or exploited.” This is an idea, or a motif, that resonated among many of the responses.

Bron Taylor offers a compelling discursive narrative of personal discovery flowering into a broad and multifaceted assessment of environmental sciences and environmental humanities, the accelerating environmental crisis and the scientific warnings of the Alliance of World Scientists. In the editors’ hopes (in the invitation to respond) that the humanities may be able to influence environmental policy discussion and sow transformative seeds of change, Taylor takes what we might characterize as a stoic long view informed by a deep reservoir of experience: “That is a tall order.”

A reasonable and very fair assessment. But it also leads us to wonder: What is the alternative?

Addressing Worldly Legacies, Shaping Earthly Futures

We are grateful to the authors who have contributed their response essays for this special issue of *Ecocene: Cappadocia Journal of Environmental Humanities*. There is wisdom in these essays. There is also disagreement, frustration, some blunt criticism, moments of despair, occasional defiance, and even inspiration tempered, perhaps, by no small degree of guarded hope. The discursive turns in the arguments and observations collected in this inaugural issue reflect in many ways the range of responses people have today to environmental changes that seem increasingly out of control, beyond even the designs of the industrial actors and other interests most driving these changes. They reflect the precarity of a moment that requires decisive action *now*, or else we risk the cascading consequences of tipping points that can only be passed once.

In other key ways the essays collected here variously reflect the temper of our times, characterized by a mixture of naked facts and the sometimes arresting impressions, emotions and ideas that they stir: deep concern over the state of the Earth as our only planetary home; grief over the loss of environments that hold great meaning to people due to rising seas, coastal erosion or other effects of climate change; fear over the wider ecological effects of warming streams and acidification of oceans; consternation over the security of limited freshwater aquifers salinated as a result of sea-level rise, sometimes with the survival of entire communities in the balance; despair over the loss of irreplaceable cultural and natural heritage, including genocide and species extinctions, from the aggressive activities of extractivist industries or agribusiness; anxieties over the

effects of a heating atmosphere on future generations, including those just born (or about to be born).

We know these kinds of litanies well. We have all heard them before, and in the months and years to come we will continue to hear them again and again. They are there in the Scientists' Warnings and they are there, in different variations, in most of the responses we have collected. Such litanies have become conventional in the scientific literature we read, in the scholarly work we produce and in the popular press that occasionally picks up stories from our work. But we need to hear them, and we need to articulate them, not only because it falls to us to bear witness to the changes occurring within our world across environments, ecosystems and communities as numerous as they are unique and irreplaceable; but also because, like all conventions, these litanies serve other important purposes. They bind the members of our growing and diversifying voluntary discourse community (authors and readers—scientists, scholars, learners, activists, artists, policymakers, environmental managers and practitioners) together in acts of meaning, through rituals of purpose and agency. These rituals are needed now more than ever as we struggle with doubts about the quality of social-environmental futures and our ability to shape an honorable and just Earthly legacy.

Notes

¹ Some of these journals include *BioScience*; *Conservation Biology*; *Ecology and Society*; *Ecozon@*; *Environment and History*; *Environmental History*; *Environmental Humanities*; *Environmental Research Letters*; *Global Environmental Change*; *Global and Planetary Change*; *Green Letters*; *Humanities*; *ISLE: Interdisciplinary Studies in Literature and Environment*; *Resilience*; *Journal for the Study of Religion, Nature and Culture*; *Nature and Culture*; *Nature Climate Change*; *Nature Sustainability*; *PNAS*; *Environmental Science and Policy*; *WIRES Climate Change*. These examples are meant to suggest a breadth of relevance that, by design, is far from exclusive to the humanities, though clearly relevant to and welcoming of humanities-centered research.

² Less programmatic and more example-rich illustrations of the distinctions the *Ecocene* inaugural issue editors observe between *communities of interest* and *communities of purpose* (though still aspirational in the case of the latter concept) can be found in the essays “Through the Portal of COVID-19: Visioning the Environmental Humanities as a Community of Purpose” (Hartman, Adamson, Gaard and Oppermann, 2020) and “From Ecology to Syndemic: Accounting for the Synergy of Epidemics” (Adamson and Hartman, 2020) in the June 2020 special issue of *Bifrost*, [The New Normal](#), devoted to environmental humanities responses to COVID-19.

³ See UNESCO's Guidelines for Sustainability Science in Research and Education (2017, 3–5) and the principles of its emerging BRIDGES Coalition (2019, 2–4).

⁴ In an Open Letter published in June 2020, 41 Environmental Humanists came together to offer a simple yet critical message in the midst of the novel coronavirus pandemic. The enforced constraints of the COVID-19 crisis in spring and summer 2020 have opened up an unexpected moment for reflection and dialogue, for connection across the boundaries of isolation and for efforts small and large that can ripple out through networked communities to help us realize structural transformations in a vulnerable world. The 41 co-authoring signatories of this Open Letter have invited their peers to join in a collective Environmental Humanities commitment to

slowing climate change through their very life practices—an action wholly congruent with efforts to achieve larger social and structural change. The published Open Letter is available as the centerpiece of a special thematic issue (*The New Normal?*) devoted to environmental humanities responses to COVID-19 at www.bifrostonline.org, as well as on a dedicated website hosted by the Environmental Humanities Center at Cappadocia University (<https://ehc.kapadokya.edu.tr/sign-the-letter>), where new signatories are welcome to sign the letter electronically.

⁵ Transformative change is explained as “A fundamental, system-wide reorganization across technological, economic and social factors, including paradigms, goals and values” (Díaz et al., 14 fn) in the 2019 report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), which called for urgent transformative change to address the biodiversity decline. An independent intergovernmental body established in 2012, IPBES is the biodiversity question’s answer to the IPCC’s scientific assessment of climate change.

⁶ For the full enumeration of steps and measures proposed, see the “World Scientists’ Warning of a Climate Emergency” (Ripple, et al. 2020, 11).

References

- Adamson, Joni, and Steven Hartman. “From Ecology to Syndemic: Accounting for the Synergy of Epidemics.” *Bifrost Online*, 8 June 2020. <https://bifrostonline.org/joni-adamson-and-steven-hartman/>.
- Díaz, Sandra, Joseph Settele, Eduardo Brondizio, Hien T Ngo, Maximillien Gueze, John Agard, Almut Arneth, et al. 2020. “Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services” (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2020). https://ipbes.net/sites/default/files/2020-02/ipbes_global_assessment_report_summary_for_policymakers_en.pdf.
- Gladwin, Derek, and Maureen O’Connor. 2017. Guest Editors’ Introduction: “Irish Studies and the Environmental Humanities.” *The Canadian Journal of Irish Studies*, 40, Special Issue: Irish Environmental Humanities: 38–50.
- Hartman, Steven, Joni Adamson, Greta Gaard, and Serpil Oppermann, “Through the Portal of COVID-19: Visioning the Environmental Humanities as a Community of Purpose.” *Bifrost Online*, 8 June 2020. <https://bifrostonline.org/steven-hartman-joni-adamson-greta-gaard-serpil-oppermann/>.
- Heise, Ursula K. 2017. “Introduction: Planet, Species, Justice—and the Stories We Tell about Them,” in *The Routledge Companion to the Environmental Humanities*, edited by Ursula K. Heise, Jon Christensen, and Michelle Niemann. 1–10. New York: Routledge.
- Haraway, Donna. 2016. *Staying with the Trouble: Making Kin in the Chthulucene*. Duke University Press.
- Hayles, Katherine N. “Novel Corona: Posthuman Virus.” *Critical Inquiry: In the Moment Blog- 2020 Pandemic* (April 17, 2020). <https://critinquiry.wordpress.com/2020/04/17/novel-corona-posthuman-virus/>.
- Liotard, Jean-François. (1991) 1979. *The Postmodern Condition: A Report on Knowledge*. Trans. Geoff Bennington and Brian Massumi. Manchester: Manchester University Press.
- Ripple, William J., Christopher Wolf, Thomas M. Newsome, Mauro Galetti, Mohammed Alamgir, Eileen Crist, Mahmoud I. Mahmoud, and William F. Laurance. 2017. “World

- Scientists' Warning to Humanity: A Second Notice." *BioScience* 67, no. 12 (December): 1026–28. <https://doi.org/10.1093/biosci/bix125>.
- Ripple, William J., Christopher Wolf, Thomas M. Newsome, Phoebe Bernard, and William R. Moomaw. 2020. "World Scientists' Warning of a Climate Emergency." *BioScience* 70, no. 1 (January): 8–12. <https://doi.org/10.1093/biosci/biz088>.
- Robinson, Kim Stanley. "The Coronavirus Is Rewriting Our Imaginations." *The New Yorker* (May 1, 2020). <https://www.newyorker.com/culture/annals-of-inquiry/the-coronavirus-and-our-future>.
- Rose, Deborah Bird, Thom van Dooren, Matthew Chrulew, Stuart Cooke, Matthew Kearnes, and Emily O'Gorman. 2012. "Thinking Through the Environment, Unsettling the Humanities." *Environmental Humanities* 1: 1–5.
- The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Report. April/May 2019. Paris https://ipbes.net/sites/default/files/Initial_scoping_transformative_change_assessment_EN.pdf.
- UNESCO. Guidelines on sustainability science in research and education. 2017/SC/SHS/1. 2017. Paris, France. <https://unesdoc.unesco.org/ark:/48223/pf0000260600>.
- UNESCO. BRIDGES' 3rd Establishment Workshop, 5–7 October 2019 in Sigtuna, Sweden: Report. SHS/MOST/2019/ME/322. 2019. Paris, France. <https://unesdoc.unesco.org/ark:/48223/pf0000372177>.
- United Nations. Transforming Our World: the 2030 Agenda for Sustainable Development. A/RES/70/1. 2015. Paris, France. https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E.