

Editors' Notes and Introduction to *The Digital Environmental Humanities: Towards Theory and Praxis*

Issue Editor's Note

Many thanks to our Guest Editors of this Special Block on the Environment using the various techniques of the Digital Environmental Humanities: Dr. Nikoleta Zampaki and Professor Peggy Karpouzou of the Faculty of Philology, School of Philosophy, National and Kapodistrian University of Athens, Greece. They brought together scholars from Canada, Hungary, India, Italy, Japan, Spain, and the United States, creating a wide spectrum of critical thought while demonstrating some of the tools of Digital Environmental Humanities.

In addition to the special block, we're also very pleased with the selection of essays below that includes one on the now mostly neglected science-fiction writer, Clifford D. Simak, as a very early environmentalist. In "Oddly Radical: Environmental Virtue Ethics in Simak's *Way Station*," Jeffrey M. Baus argues that at the time of the essay "Simak's advocacy for ecological values and pastoral themes was a deviation from the perceived trajectory of technological 'progress' within the genre, and deeper analysis reveals that his seemingly counterrevolutionary approach, moving beyond the reductive 'conservative' label, presaged the core tenets of twenty-first-century environmental ethics and ecofeminism." In "Poisoned Grounds: Toxic Discourse in Barbara Kingsolver's Fiction and Nonfiction," Abhra Paul and Vidya Sarveswaran draw on Lawrence Buell's useful phrase, "toxic discourse" to discuss Kingsolver's ecological criticism written over about fifteen years. Their conclusion will come as no surprise that "Kingsolver's fiction and nonfiction present how human-induced chemical toxicity destroys the planetary ecosystem" while their insightful analysis invites readers to reread Kingsolver's books.

Changing the subject from ecocriticism to poetic form, Enikő Bollobás in "Self and Form: The Radicalization of American Poetry from Emily Dickinson to Charles Bernstein" treats the reader to a clear exposition of "[t]he radicalization of American poetry [that] culminates in language writing, which places the creative process under the control of language, thereby doing away with the self that formerly gave cohesion to the text." She illustrates her argument with a marvelous variety of texts from the humorous to the puzzling leaving readers well equipped as they encounter a wide range of American poetry.

György Kiss in the final essay in this issue, “Once Upon a Blind Girl: Disability and Fairy Tale in Charles Dickens’s *The Cricket on the Hearth*,” posits “a gradual shift in Dickens’s understanding of disability and bodily difference in his literary career.” In addition, he argues that this fairy tale-novella raises “questions and conclusions about women’s roles inside and outside the home.” Thus Dickens “join[s] a larger debate about female agency in the Victorian era” as well as reflecting its varying attitudes towards disability.

The issue draws to a close with several outstanding reviews. The first by James Little, University of Cyprus concludes that Erika Mihálycsa in *A wretchedness to defend: Reading Beckett’s Letters* “mark[s] the ways in which the letters recast our understanding of Beckett’s texts and their place in the vaster, infinite conversation also called literature.” Zoltán Abádi-Nagy notes that Maureen E. Ruprecht Fadem’s discussion of Toni Morrison’s heartbreaking novel, *Beloved*, focuses on her presentation of things. Mária Kurdi analyzes Richard Rankin Russell’s much expanded and greatly revised second edition of *Modernity, Community, and Place in Brian Friel’s Drama*, while Gabriela Vöö comments perceptively on a stimulating collection of essays on *Diversity in Narration and Writing: The Novel*, where literary narratives engage in a productive colloquy across geographical and cultural boundaries.

I will end with reiterated thanks to our Greek colleagues Nikoleta Zampaki and Peggy Karpouzou for their stimulating collection of essays on Digital Environmental Humanities and add to it my great thanks to all our scholar-colleagues who carefully reviewed essays and my fellow editors who made the completion of this issue possible.

Donald E. Morse
Editor-in-Chief of *HJEAS*



Introduction to the thematic block *The Digital Environmental Humanities: Towards Theory and Praxis*

Nikoleta Zampaki and Peggy Karpouzou

HJEAS

The exponential growth of digital technologies has permeated every aspect of our life (Ellul; Feenberg; Boczkowski and Mitchelstein) as we live and work in various digital environments: virtual networks, social media groups, e-classes, and so forth. These environments have been characterized as *social spaces* (Lindberg and Roine) as various users are working individually and simultaneously in larger communities of users on the web. The Big Data, described in terms of large data warehouses (Taffel), are organized collections of a great amount of data on the web (Green et al.), inaugurating a turn in the twenty-first century into the so-called “Digital Anthropocene” (McLean; von Essen et al.; Creutzig et al.; Majaca). The “Digital Anthropocene” describes the digitization of our daily life, emphasizing the inseparability of our culture and digital technologies (McLean 160). Some examples worth noting are the role of digital technologies in STEAM, which explores the intricate relationship between Science, Technology, Engineering, Arts, and Mathematics, and studies how digital technologies are applied to them (Carver and Atkins; Cisneros et al.; Turnbull et al.), the role of digital technologies in healthcare (Olla et al.), education (Robin; Hirsch), media (Leszczynski; Vince and Earnshaw), business and politics (Arts et al.), economy (Márton), urban and citizen science, including the planning and adoption of digital sustainable policies (Turnbull et al.) and ICTs in the smart cities (Gabrys 2014; 2016; Farhaoui and Moussaid; Moss et al.; Stančić).

All of these working areas offer many examples that prove the critical role of digital technologies in our welfare and culture. It seems thus necessary to ponder the presence and impact of digital technologies on environmental issues and how digital technologies might respond to our current ecological crisis (McLean 170). The latter issue has not yet been fully explored as the interplay between the digital and natural world is much more complex than their binary opposition: the digital world is displayed virtually through digits, algorithms, and codes, while the natural world includes various physical life-forms and eco-systems. The discussion about digital and ecological inquiries is open in Humanities research and involves two of the fields most directly related to the topic: Digital Humanities and Environmental Humanities.

Digital Humanities is still “a diverse and emerging field that encompasses the practice of humanities research in and through information technology, and the exploration of how the humanities may evolve through their engagement with technology, media, and computational methods.”¹ As we move from the “first wave,” which studied the qualitative data in Computer Science to the “second wave,” which was more applied (Presner), a “third wave” refers to interdisciplinary approaches; how Digital Humanities sorts through new definitions and patterns of practice, and the position of the terrain within “dynamic cross-fertilizations that are fostering new relationships” with various research fields (Thompson Klein 2015). The nature of interdisciplinary approaches is to provide scholars with practical tools with which to live in our current complex world and understand our relationship with the *Other*, articulated in terms of plant, animal, digital, and so forth. Like the Digital Humanities’ waves, the “third wave of ecocriticism” (Slovic 4) explores “new” interdisciplinary research involving Digital Humanities and Environmental Humanities.

A major issue is posed by the Digital Humanities and Environmental Humanities intersections (Cohen and LeMenager 340) due to the different approaches (Posthumus and Sinclair 370) and the various kinds of digital environmental patterns, practices and tools that are studied and applied in literary, cultural, or artistic texts. Although it seems challenging to collocate the two fields as they provide constantly “emerging methods and genres” (Burdick et al.), both Digital Humanities and Environmental Humanities are open to interdisciplinary theoretical and applied research.

A common vocabulary and terms such as *environment*, *system*, and *network* are found in both disciplines, keeping, of course, their different meanings within their respective contexts. For example, a natural environment consists of various life-forms while the digital one is a series of websites, cloud servers, applications, and so forth. The latter is a “place” enabled by technology and digital services, often transmitted over the Internet or other digital means. The knowledge of various systems, their complexities, and their effectiveness in other systems raise questions such as: What are the implications between the digital and physical environments, systems, and networks? How about a “new” environment, system, or network coordinating both? How far do we need to extend our research in both disciplines? How about the potential restrictions to fusing knowledge? Despite the different methodologies and approaches of Digital Humanities

and Environmental Humanities, it is evident that similar interests and common goals exist to overcome their differences through a metaphorical conceptualization of terms. *Digital* and *ecological* inquiries are “interdisciplinary and collaborative” where “new tools, new metaphors, provide second-order feedback loops that inform the original metaphors of nature and ecology” (Morey 119). For instance, the ecological and digital entanglements (Taffel) can be conceived in terms of “metabolism.” According to Amanda Starling Gould, “the idea of a digital environmental metabolism” is “an alternate way to understand the relationship between humans, technology, and the environment” as the “digital network operates as does a metabolic system,” which is “implicated in the biophysical and geophysical systems with which it overlaps and intertwines” (33–34).

Chad Wellmon describes the concept of digital environment or digital ecology (77) as digital patterns and energies, addressing the “phenomena [that] are both electronic and embodied in which online and offline lives are imbricated and inseparable” (Gallagher 12). The ubiquity of the ecological requires us to examine how we create digital scholarship and how the ecological or digital are coalesced to re-conceptualize further their interplay. However, we do not abide by an instrumental or a one-dimensional reading on either the ecological or the digital, as there is a mirror-play between the two.

A definition of digital ecologies and their features are yet to be further explored due to the complex and multiple structures of both the digital and ecological. According to Raptis et al., digital ecology is *a closed set of digital and non-digital artifacts and a user acting as nodes of a network where its boundaries are specified by an activity and the structure and patterns of organization are either user and/or designer defined* (5). It is evident that the term “digital ecologies” is an open framework of digitally mediated interplays between different agencies (Taffel 2). Moreover, collaboration and cooperation are distinctive features of digital ecologies that aim at the continuous learning of them as digital patterns to explore the human, nonhuman and digital world: “[D]igital ecology is a metaphor that embraces emergence and eschews the reductive nomenclature of Taylorism. It is carefully co-designed by using tools that facilitate cooperation and collaboration. It has agility and it is continuously learning” (Betton 13). Digital ecology can also be used to denote the use of technology in the study of ecological systems and processing, examining how technological developments aid in collecting, analyzing, and managing ecological data. Examples of digital ecologies are found in various research fields, starting from geography

studies (Ash et al.; Adams), urban and citizen studies (Benson; Gabrys; Westerlaken et al.), media studies (Büscher), political studies (Nost and Goldstein), arts (Lee Coles and Pasquier), and many others. In these fields, critical conversations are provoked to understand how humans and nonhumans are digitized and for what purposes, while digitization enables fostering communities with shared eco-centric goals.

Current Environmental Humanities scholarship (Jørgensen; Posthumus and Sinclair; Cohen and LeMenager; Sinclair and Posthumus 2016; Gould Starling) involves diverse theories, debates, and practices in the so-called “Digital Environmental Humanities” (DEH), which encompasses both digital and ecological inquiry through various interdisciplinary projects, aiming to raise environmental issues. Moreover, the Digital Environmental Humanities exhibit some broad thematic strains, including archiving and databases, Anthropocene narratives, more-than-human relations, and Citizen Humanities (Ryan et al.) to “interpret, question, catalogue, address, formulate, and provide avenues and networks for practical solutions” (Travis et al. 6) to all these strains.

Interdisciplinary DEH open access glocal projects are introduced in Plant Humanities,² in Blue Humanities,³ or in Anthropocene narratives.⁴ The study of digital ecologies in literary and inter-medial narratives (Posthumus and Sinclair 258) offers new approaches to Literary and Cultural Studies in a more interactive way. As Finn Arne Jørgensen notes, the “idea of nature is becoming very hard to separate from the digital tools and media we use to observe, interpret, and manage it” (109). Digital ecologies offer insights on how we search large corpora of data on the web (data mining), annotate and use digital tools in processing the texts (text mining), create our own digital storytelling with the use of applications and repositories (Lambert and Hessler).

All these examples of Digital Environmental Humanities propel a “digital decolonization” of the current environmental knowledge and open new avenues to re-think the relationship between various digital and eco-narratives, exploring also the kind of entanglements of the human, nonhuman and digital world (Verma). For instance, the development of digital practices for monitoring animal life’s movements in nature highlights the role of digital technology in tracking wildlife behavior and threats, giving “a voice to the entities they monitor: to animals, plants, people, and inanimate objects” (Gabrys). The study of these entanglements could develop new forms of subjectivity, agency, and citizenship that prove that

“human beings are not the only essential actors” (Karpouzou and Zampaki 34).

The contributions of this special issue turn the environmental gaze onto digital environments by bringing together various epistemological terrains, including Literary and Cultural Studies, Archive Studies, Continental Philosophy, Game Studies, and Arts. Moreover, the authors explore how the human, nonhuman, and digital worlds are represented and forge relationships in various environments, addressing the complexities and creativity in the interacting process of all agencies.

Erik Zepka explores various epistemic zeitgeists about the “real” and the “ecological” through past and modern archival technologies, drawing examples from different periods and cultural traditions. Zepka focuses on the merit of digital archival development, which links more and more disparate spaces and times, providing a better understanding of the cross-cultural paradigms of the *oikos*.

Turning to the study of digital machines and materialities, Joshua Nieubuert, through briefly tracing the complex intermingling of advanced digital machines in the realms of cardiovascular health, sexual desire, companionship, and creativity, explores a philosophical understanding of the social and pragmatic roles advanced digital machines play as co-agents within our combined ecologies of existence.

Heather Rogers and Claudia Berger analyze the use of digital technologies in various Plant Humanities digital projects, underscoring the importance of portraying plants as subjects of inquiry and not only as background objects of mere representation.

Moving to more applied approaches, Dez Miller examines the transformations of water culture in English literature diachronically through an analysis of word embeddings in the Novel TM corpus, housed within the HathiTrust Digital Library in the US. Miller’s approach is both analytical and applied, adopting a distant reading in finding references to rivers and tracking changes in the semantic fields around rivers over time.

Working on digital archives, James Harry Morris’s research about measles epidemics offers a digital analysis of data garnered from registers of yearly religious membership censuses taken on Japanese society during the Edo period (1600–1868) with the use of a digital application called *DANJURO ver. 7.0*. The extracted data prove that measles epidemic outbreaks of that period are not as significant as those of other diseases in terms of mortality, proving that *DANJURO ver. 7.0* can help us to humanize Big Data.

Olga Zaslavkaya and Vera Kuklina's *Arctic InfraScapes* is a digital Indigenous eco-artistic project of natural settings and materialities, indicating that the human–technology–nature relationship is a conduit for creating a new sense of aesthetic experience in digital environmental art.

This special issue makes various Environmental Humanities voices enter into conversation with digital scholarship, aiming to explore current perspectives to bridge the gap between nature and technology. The contributions aim to underscore how the digital and the ecological are deeply implicated in the design and production of various narratives, addressing mainly how the ecological mobilizes the digital and vice versa to create individual and collective digital ecologies. On the one hand, our special issue's interdisciplinary approach raises questions about the role of the digital world in what we have traditionally identified as ecological. On the other hand, there is a need to frame new digital environmental theories and practices within other disciplines and study the interplay between the digital and ecological.

In conclusion, the discussion about the intersections between Digital Humanities and Environmental Humanities as well as the framing of the context and the content of Digital Environmental Humanities are open and yet to be discovered to provide an approach that is supported by new ways of understanding and taking care of various life-forms through digital environments.

Last but not least, we want to warmly thank *HJEAS*'s Editor in Chief, Professor Donald Morse, and the whole Editorial Board, our special issue's contributors, and peer reviewers for exploring a “collective digital ecology” with us.

National and Kapodistrian University of Athens

Nikoleta Zampaki is Postdoctoral Researcher at the Faculty of Philology, National and Kapodistrian University of Athens, Greece.

Peggy Karpouzou is Associate Professor of Theory of Literature at the Faculty of Philology, National and Kapodistrian University of Athens, Greece.

Notes

1 *Digital Humanities Quarterly*. Web. 10 June 2024.

2 *Plant Humanities Lab* supported by Dumbarton Oaks in the US; *Herbaria 3.0 Digital Ecologies: The Use of Digital Tool Juncture in Modern Greek Poetry (19th–20th c.)* [in Greek]

3 The *Blue Humanities Archive*, the project *Sea in Literature* [in Greek]; the monograph titled *The Deep Maps: Blue Humanities* written in the digital tool Juncture.

4 See, for instance, the *Climate Change Digital Archive*, supported by the Royal College of Physicians of Edinburgh in the UK; the *Digital Environmental Humanities* website.

Works Cited

- Adams, William M. "Geographies of Conservation II: Technologies, Surveillance and Conservation by Algorithm." *Progress in Human Geography* 43.2 (2019): 337–50. Web. 31 Aug. 2024.
- Arts, Koen, et al. "Digital Technology and the Conservation of Nature." *Ambio* 44.4 (2015): 661–73. Web. 31 Aug. 2024.
- Ash, James, Rob Kitchin, and Agnieszka Leszczynski. "Digital Turn, Digital Geographies?" *Progress in Human Geography* 42.1 (2016): 25–43. Web. 31 Aug. 2024.
- Benson, Etienne. *Wired Wilderness: Technologies of Tracking and the Making of Modern Wildlife*. Baltimore: Johns Hopkins UP, 2010. Print.
- Betton, Victoria. *Towards a Digital Ecology: NHS Digital Adoption through COVID-19 Looking Glass*. New York: CRC Press, 2022. Print.
- Blue Humanities Archive*. Web. 26 Aug. 2024.
- Boczkowski, Pablo J., and Eugenia Mitchelstein. *The Digital Environment: How We Live, Learn, Work, and Play Now*. Cambridge, MA: MIT Press, 2021. Print.
- Burdick, Anne, et al., eds. *Digital Humanities*. Cambridge, MA: MIT Press, 2016. Print.
- Büscher, Bram. "Nature 2.0: Exploring and Theorizing the Links between New Media and Nature Conservation." *New Media & Society* 18.5 (2014): 726–43. Web. 31 Aug. 2024.
- Carver, Lin, and Holly S. Atkins. *Leading in the Digital Environment: Being a Change Agent*. Lanham: Rowman & Littlefield, 2021. Print.
- Cisneros, Laura, et al. "Eco-digital Storytelling: Engaging Historically Excluded Populations in Environmental Action through Mentoring, Geospatial Technology, and Digital Media Storytelling." *Frontiers in Education* 7 (2023): 1–12. Web. 31 Aug. 2024.
- Climate Change Archive*. Web. 26 Aug. 2024.
- Cohen, Jerome Jeffrey, and Stephanie LeMenager. "Introduction: Assembling the Ecological Digital Humanities." *PMLA* 131.2 (2016): 340–46. Web. 31 Aug. 2024.
- Creutzig, Felix, et al. "Digitalization and the Anthropocene." *Annual Review of Environment and Resources* 47 (2022): 479–509. Web. 31 Aug. 2024.

- Digital Ecologies. The Use of Digital Tool Juncture in Modern Greek Poetry (19th–20th c.)* [in Greek]. Web. 26 Aug. 2024.
- Digital Environmental Humanities*. Web. 26 Aug. 2024.
- Ellul, Jacques. *The Technological Society*. Transl. John Wilkinson. New York: Knopf, 1964. Print.
- Farhaoui, Yousef, and Laila Moussaid, eds. *Big Data and Smart Digital Environment*. Cham: Springer, 2019. Print.
- Feenberg, Andrew. *Questioning Technology*. London: Routledge, 1999. Print.
- Gabrys, Jennifer. “Sensors and Sensing Practices: Reworking Experience across Entities, Environments and Technologies.” *Science, Technology & Human Values* 44.5 (2019): 723–36. Web. 31 Aug. 2024.
- . *Program Earth. Environmental Sensing Technology and the Making of a Computational Planet*. Minneapolis: U of Minnesota P, 2016. Print.
- . “Programming Environments: Environmentality and Citizens Sensing in the Smart City.” *Environment and Planning D: Society and Space* 32 (2014): 30–48. Web. 31 Aug. 2024.
- Gallagher, John R. *Case Study Research in the Digital Age*. New York: Routledge, 2024. Print.
- Gould Starling, Amanda. “Kitting the Digital Humanities for the Anthropocene.” *Modelling Sustainable Research Practices in the Anthropocene*. Eds. Chelsea Miya, Oliver Rossier, and Geoffrey Rockwell. Cambridge: Open Book Publisher, 2021. 93–110. Print.
- . *Digital Environmental Metabolisms: An Ecocritical Project of the Digital Environmental Humanities*. Diss. Duke University, 2017. Print.
- Green, David G., et al., eds. *Complexity in Landscape Ecology*. Cham: Springer, 2006. Print.
- Herbaria 3.0*. Web. 26 Aug. 2024.
- Hirsch, Brett D., ed. *Digital Humanities Pedagogy. Practices, Principles and Politics*. Cambridge: Open Book Publishers, 2012. Print.
- Jørgensen, Finn Arne. “The Armchair Traveler’s Guide to Digital Environmental Humanities.” *Environmental Humanities* 4.1 (2014): 95–112. Web. 31 Aug. 2024.
- Karpouzou, Peggy, and Nikoleta Zampaki, eds. “Introduction: Towards a Symbiosis of Posthumanism and Environmental Humanities or Paving Narratives for the Symbiocene.” *Symbiotic Posthumanist Ecologies in Western Literature, Philosophy and Art. Towards Theory and Practice*. Berlin: Peter Lang, 2023. 11–39. Print.
- Lambert, Joe, and Brooke Hessler, eds. *Digital Storytelling. Capturing Lives, Creating Community*. London: Routledge, 2018. Print.

- Lee Coles, Laura, and Philippe Pasquier. "Digital Eco-Art: Transformative Possibilities." *Digital Creativity* 26.1 (2015): 3–15. Web. 31 Aug. 2024.
- Leszczynski, Agnieszka. "Spatial Media/tion." *Progress in Human Geography* 39.6 (2014): 1–23. Web. 31 Aug. 2024.
- Lindberg, Susanna, and Hanna-Riikka Roine, eds. *The Ethos of Digital Environments: Technology, Literary Theory and Philosophy*. New York: Routledge, 2021. Print.
- Majaca, Antonia, ed. *Incomputable Earth. Technology and the Anthropocene Hypothesis*. London: Bloomsbury, 2024. Print.
- Márton, Attila. "Steps toward a Digital Ecology: Ecological Principles for the Study of Digital Ecosystems." *Journal of Information Technology* 37.3 (2022): 250–65. Web. 31 Aug. 2024.
- McLean, Jessica. *Changing Digital Geographies: Technologies, Environments and People*. London: Palgrave Macmillan, 2020. Print.
- Morey, Sean. "Digital Ecologies." *Ecology, Writing Theory, and New Media: Writing Ecology*. Ed. Sidney I. Dobrin. New York: Routledge, 2012. 106–21. Print.
- Moss, Timothy, et al. "Digital Urban Nature. Probing a Void in the Smart City Discourse." *City: Analysis of Urban Change, Theory, Action* 25.3-4 (2021): 255–76. Web. 31 Aug. 2024.
- Nost, Eric, and Jenny E. Goldstein. "A Political Ecology of Data." *Environment and Planning E: Nature and Space* 5.1 (2021): 3–17. Web. 31 Aug. 2024.
- Olla, Phillip, and Joseph Tan. *Digital Health Care. Perspectives, Applications, and Cases*. Burlington: Jones and Bartlett, 2023. Print.
- Plant Humanities Lab*. Web. 26 Aug. 2024.
- Posthumus, Stephanie, and Stéfan Sinclair. "Reading Environment(s): Digital Humanities Meets Ecocriticism." *Green Letters: Studies in Ecocriticism* 18.3 (2014): 254–73. Web. 31 Aug. 2024.
- Presner, Todd. "Digital Humanities 2.0: A Report on Knowledge." *Emerging Disciplines*. Ed. Melissa Bailar. Houston: Rice UP, 2010. 63–86 Print.
- Raptis, Dimitrios, et al. "What is a Digital Ecology? Theoretical Foundations and a Unified Definition." *Australian Journal of Intelligent Information Processing Systems* 13.4 (2014): 1–5. Web. 31 Aug. 2024.
- Robin, Bernard R. "Digital Storytelling: A Powerful Technology Tool for the 21st Century Classroom." *Theory Into Practice* 47.3 (2009): 220–28. Web. 31 Aug. 2024.

- Ryan, John, et al. "The Digital Environmental Humanities (DEH) in the Anthropocene: Challenges and Opportunities in an Era of Ecological Precarity." *DHQ* 17.3 (2023): 1–19. Web. 31 Aug. 2024.
- Sea in Literature* [in Greek]. Web. 26 Aug. 2024.
- Sinclair, Stéfan, and Stephanie Posthumus. "Digital? Environmental: Humanities." *The Routledge Companion to Environmental Humanities*. Eds. Ursula K. Heise, Jon Christensen, and Michelle Niemann. London: Routledge, 2016. 369–77. Print.
- Slovic, Scott. "The Third Wave of Ecocriticism: North American Reflections on the Current Phase of the Discipline." *Ecozon@* 1.1 (2010): 4–10. Web. 31 Aug. 2024.
- Stančić, Hrvoje. *Trust and Records in an Open Digital Environment*. London: Routledge, 2021. Print.
- Taffel, Sy. *Digital Media Ecologies: Entanglements of Content, Code and Hardware*. London: Bloomsbury, 2019. Print.
- The Deep Maps: Blue Humanities*. Web. 26 Aug. 2024.
- Thompson Klein, Julie. *Interdisciplining Digital Humanities. Boundary Work in an Emerging Field*. Michigan: U of Michigan P, 2015. Print.
- Travis, Charles, et al., eds. *Routledge Handbook of the Digital Environmental Humanities*. London: Routledge, 2023. Print.
- Turnbull, Jonathon, et al. *Digital Ecologies: Mediating More-than-Human Worlds*. Manchester: Manchester UP, 2024. Print.
- . "Digital Ecologies: Materialities, Encounters, Governance." *Progress in Environmental Geography* 2.1-2 (2022): 3–32. Web. 31 Aug. 2024.
- Verma, Audrey. *The Role of Digital Technologies in Human-Nature Relationships*. Diss. U of Aberdeen, 2016. Print.
- Vince, John, and Rae Earnshaw, eds. *Digital Media: The Future*. London: Springer, 2000. Print.
- Von Essen, Erica, et al. "Wildlife in the Digital Anthropocene: Examining Human–Animal Relations through Surveillance Technologies." *Environmental and Planning E: Nature and Space* 6.1 (2021): 679–99. Web. 31 Aug. 2024.
- Westerlaken, Michelle, et al. "Digital Gardening with a Forest Atlas: Designing a Pluralistic Open-Data Platform." *Proceedings of the Participatory Design Conference 2* (2022): 25–32. Web. 31 Aug. 2024.
- Wellmon, Chad. "Why Google Isn't Making Us Stupid... or Smart." *The Hedgehog Review* 14.1 (2012): 66–80. Web. 31 Aug. 2024.