# Agnes Denes

## Ecological Art and Cultural Sustainability

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**Abstract**

Within ecological art history, Agnes Denes emerges as an artist who has been dynamically engaged with sustainability for decades. Through her writing, environmental sculptures, and gallery artworks, Denes anticipated the rise of sustainability since the mid-twentieth century and continued to incorporate it in her works into the twenty-first century. Her development of "eco-logic" as a way of artmaking that responds to environmental and philosophical concerns, her earliest site-specific eco work entitled *Rice/Tree/Burial with Time Capsule* (1968–1979), and her more recent sculpture *Pyramids of Consciousness* (2005), all share a common thread of sustainable engagement. Before turning to Denes's practice, however, definitions of sustainability as it relates to art history more broadly are necessary. While Denes and many other ecologically engaged artists may not offer immediate, practical roadmaps for sustainable development, the value of

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C. Constance (ed.), *The Palgrave Handbook of Global Sustainability*,
https://doi.org/10.1007/978-3-030-38948-2_193-1

their artwork lies in the development of culturally oriented sustainability that centers on perceptions of nature, intergenerational justice, and creative engagement with environmental issues. Drawing from writing by John B. Robinson and Sacha Kagan, this contribution parses the differences between sustainable development and cultural sustainability. Then, an overview of sustainability within the history of environmental art is given. Finally, themes of sustainability in Denes's artistic practice are illuminated.

**Keywords**

Sustainability · Ecological art · Environmental art · Petroaesthetics · Agnes Denes · Contemporary art · Petroculture · Environmental philosophy

## 1 Introduction

Sustainability exists in murky semantic waters. As many contributions to this volume show, its definition is slippery and changes depending on disciplinary contexts. From colloquial applications of the term that can refer to anything that can be sustained to specialized scientific definitions of sustainable development, getting a handle on the term is no easy task. For the art historian, sustainability is initially vexing with regard to its practical applications. The impulse may be to scan the history of modern and contemporary art to seek out the rare examples that doubly function as artworks and literal, immediate solutions to environmental issues. Here, Sue Spaid's *Ecoventions* (2002) surfaces, with its interest in artistic projects that reclaim damaged environments and exist with some practical ecological function. However, when the complexities of sustainability are embraced, rather than resisted, more nuanced and intellectually stimulating examples of works of art that engage with the concept come to the fore. Agnes Denes (b. 1931), a Hungarian-born New York–based interdisciplinary artist, is one such example. Denes has created artworks and writing that incorporate concepts of sustainability since at least the late 1960s. Though rarely acknowledged, the theme of sustainability weaves through many of her groundbreaking ecological artworks and writing practice. This text functions as a survey of the artist's extensive body of work accumulated over six decades, filtering her oeuvre through the framework of sustainability. Before Denes's practice can be examined, however, broader questions of how sustainability is being employed here, and what sustainability means to the discipline of art history, must be unpacked.

## 2 Sustainable Development Versus Sustainability

As Sandra J. Garren and Robert Brinkmann outline in ▶ "Sustainability Definitions, Historical Context, and Frameworks", the introductory chapter of this volume, sustainability as a discourse exists within the lineage of the environmental

movement and emerged primarily out of the 1987 United Nations' Brundtland Report. At its core, sustainability refers to the development of ways of living in the present that sustain the earth's planetary resources for future human generations. A sustainable existence is therefore beholden to engagement with the environment, equity, and economics. While this stance is often embedded with anthropocentric concerns, there are alternate strains of sustainability inspired by deep ecology that prioritizes ecocentric approaches which mitigate sole emphasis on the preservation of humanity (Glasser 2004; Allen et al. 2019). Because of the inclusion of issues of global equity and economics, the term "sustainable development" is sometimes used interchangeably with "sustainability." For art historical purposes, however, the distinction between the two terms becomes more significant, as will be examined.

Due to the sheer expanse of possibilities in the realization of sustainable practices, real-world applications of sustainability become even more complicated than its definition. As Frances Fahy and Henrike Rau write in *Methods of Sustainability Research in the Social Sciences* (2013), questions of who gets to decide what counts as sustainable, who benefits and who is negatively impacted by outcomes of sustainable development, and how sustainability engages with the future must be grappled with. Further, the very concept of sustainable development has been seen as a tautology – in that any development is inherently unsustainable or simply defers expenditure (Robinson 2004). Focusing on the differences between sustainability and sustainable development can help untangle some of these crossed wires, particularly when considering the usefulness of sustainability as a concept for art historical analysis.

While sustainable development is often aligned with economic growth, sustainability is more interested in shifting our relationship to consumption and the planet more broadly (Robinson 2004). Because of its emphasis on conceptual and philosophical definitions, the latter is arguably more useful for understanding artworks that engage with sustainability, as they are themselves often coded with symbols and conceptual meaning. In "*Squaring the Circle*" (2004) John B. Robinson traces the differences between sustainability and sustainable development to variations in approaches to environmentalism that emerged in the early nineteenth century. He framed these in two distinct groups: preservationists and conservationists (Robinson 2004). While preservationists were interested in preserving nature for its own sake, often inflected by undertones of spiritual connection with the natural world, conservationists were interested in preserving nature so it could be used as a resource later. In simplified terms, this represents a distinction between spiritual and utilitarian approaches to nature. Extending these distinctions, in the 1970s, deep ecology emerged as a way to counter utilitarian approaches to nature further, arguing for the intrinsic value of nature as opposed to its preservation solely as a resource for human gain (Naess 1973). The late twentieth-century genesis of sustainability can be seen as extending these formative histories, with sustainability aligning with the preservationists and sustainable development with the conservationists.

Sustainable development, for instance, has been critiqued for only treating the symptoms of environmental degradation without grappling with root causes or the impact of deeper anthropocentric conceptualizations of nature that guide

environmentally damaging practices in the first place (Robinson 2004). Because contemporary artworks often offer to interrogate dominant ideologies, cultural constructs, and ethical issues, art historical analysis meshes far more seamlessly with sustainability and its conceptual concerns than sustainable development with its dedication to immediate economic outcomes. Leaning into the complexity of sustainability means embracing the experiential, experimental, and community-oriented dimensions of the concept. It also means valuing scientific analysis while still embracing other forms of knowledge-making, including creative practices, citizen science, and community engagement, that may contribute to our understandings of what sustainability can look like. As Robinson puts it, sustainability "is more usefully thought of as [an] approach or process of community-based thinking that indicates we need to integrate environmental, social, and economic issues in a long-term perspective, while remaining open to fundamental differences about the way that is to be accomplished and even the ultimate purposes involved" (Robinson 2004). Sustainability is thus a conversation about the type of world we want to live in, and how this can be balanced with broader ecological well-being, both now and in the future. This more liberated understanding of sustainability opens up space for artworks that are less tethered to practical concerns and engage with the conceptual substance, as exemplified in the work of Agnes Denes, an ecological artist situated under the broader umbrella of environmental art practices.

## 3 Environmental Art History: Eco Art Versus Land Art

Just as sustainability falls under the broader history of the environmental movement, sustainability in art historical discourse can be located within the field of environmental art history. While loosely anticipated by John Ruskin's concern for anthropogenic climate change and its effects on artistic production in the nineteenth century, environmental art discourse emerged in the mid-twentieth century (Albritton and Jonsson 2016). Into the twenty-first century, it has continued to grow exponentially as increasing attention is paid to artworks that engage the natural world in the face of accelerating environmental crises. There are many terms for the varying artistic practices that engage with the natural world conceptually, symbolically, or literally, including earthworks, land art, earth art, and eco art. While environmental art discourses lack overarching consensus about the boundaries of each of these terms, and how they overlap or differ, some definitions can be offered. With regard to the theme of sustainability in the eco artwork of Agnes Denes, it is helpful to first take a step back and consider broader distinctions between two environmental art practices: earthworks and ecological art (commonly referred to as eco art).

Regardless of its specific focus, each genre of environmental art invariably deals, in some way or another, with the natural world. Due to the fact that these practices are tethered to "nature," a concept so pluralistic, scholars often end up using different terms to designate various environmental art practices, many of which seek to challenge Western nature/culture binaries. For instance, Amanda Boetzkes applies

the term "earth art" in her text, *The Ethics of Earth Art* (2010), which includes artistic practices acknowledging that the scope and complexity of nature and the elemental earth exceed human understanding. Writing on environmental art texts began in earnest in the mid- to late 1960s with earthworks (also known as land art), which is arguably the best-documented form of environmental art. Despite the fact that eco art began concurrently with earthworks, "eco art" as a categorical term has been deployed only within the last two decades alongside rising awareness of human-induced environmental crisis. More widespread recognition of Denes's practice came with the recent popularization of eco art discourse, though her eco art practice was steadily building since the 1960s (Cheetham 2018).

Despite their conceptual differences, earthworks and eco art began alongside the developing environmental movement of the 1960s in the USA. Robert Smithson first introduced the term "earthworks" in his 1967 essay, "A Tour of the Monuments of Passaic, New Jersey." Many of the earliest texts on earthworks frame them as a new form of sculpture that is, as Rosalind Krauss suggested in *Sculpture in the Expanded Field* (1979), "not-landscape, not-architecture." John Beardsley's *Earthworks* (1984), one of the earliest books solely dedicated to earthworks, focuses on permanent, large-scale works created by artists such as Smithson, Walter De Maria, Michael Heizer, and Nancy Holt. Beardsley also sketches the connections between the visual similarities of earthworks and certain Indigenous mound-building practices, such the burial sites of the Adena and Hopewell tribes in the Midwestern USA, though this has been underexamined in earthwork discourse (Beardsley 1984). Denes's work is not mentioned by Krauss or Beardsley. Brian Wallis's authoritative survey in *Land and Environmental Art* (1998) frames earthworks as emerging from the cultural and political turbulence of the 1960s, interpreting earthworks as anti-monuments that resist art market commodification. Wallis briefly mentions Denes's work as an example of art that investigates sociopolitical tensions.

While eco art practices began in the 1960s, the more recent emergence of art historical discourse that separates eco art from earthworks can be understood as a response to rising awareness of the crisis state of the planet. This shift occurred in the USA in the late 1980s and early 1990s and is in alignment with the rise of sustainability discourse. As Naomi Klein notes in *This Changes Everything: Capitalism vs. the Climate* (2014), "If the climate movement had a birthday, a moment when the issue pierced the public consciousness and could no longer be ignored, it would have to be June 23, 1988," one year after the Brundtland report, on the date that James Hansen, director of NASA's Goddard Institute for Space Studies, testified before Congress on global warming. Landmark texts that spurred the rise of eco art discourse include Mathis Wackernagel and William E. Rees's *Our Ecological Footprint* (1996), which introduces the concept of an ecological "footprint" left by human activity, and Paul Crutzen and Eugene F. Stoermer's *The 'Anthropocene'* (2000), which proposes that we have entered a new geological epoch, distinct from the Holocene, shaped by human activity. Around the same time, eco-criticism emerged within the humanities, marked by Cheryll Glotfelty and Harold Fromm's *The Ecocriticism Reader: Landmarks in Literary Ecology* (1996).

Between the 1990s and mid-2000s, early art exhibitions concerned with environmental change and ecology began to emerge. These include *Fragile Ecologies* (1992), which featured artworks that highlight the interconnectedness of humans and the natural world, *Villete-Amazone* (1997), which combined ecology, urbanism, technology, and art, and *Weather Report: Art and Climate Change* (2007), which centered conversations around climate change and the artist's role in imagining a sustainable future. Early eco art texts developed concurrently with these exhibitions, including Sue Spaid's *Ecovention* (2002), which focused on site-specific artworks that have combined ecological and artistic function, and act as artistic intervention without being beholden to the practical dimensions of environmental restoration. Later, Linda Weintraub's *To Life! Eco Art in Pursuit of a Sustainable Planet* (2012) defined eco art as a practice that engages with ecocentrism, "to proclaim that rights belong to all species, not just humans." Boetzkes's *The Ethics of Earth Art* (2010) advanced the theoretical framing of eco art through the application of phenomenology and ecological ethics. In recent years, art historical discourse centered around environmental crisis has continued to proliferate, seen in publications such as *The New Earthwork* (2011), edited by Twylene Moyer and Glenn Harper, *Art in the Anthropocene* (2015), edited by Heather Davis and Etienne Turpin, and T.J. Demos's *Decolonizing Nature: Contemporary Art and the Politics of Ecology* (2016). However, of the aforementioned texts, only *Ecovention, The New Earthworks*, and *Decolonizing Nature* briefly mention Denes. Her recognition as a foundational eco artist within broader discourse would not be established until Mark Cheetham's *Landscape into Eco Art* (2018), which cited Denes's *Rice/Tree/Burial with Time Capsule* (1968–1979) as one of the earliest works of eco art alongside artists Helen Mayer Harrison and Newton Harrison's *Survival Pieces* (1970–1972).

## 4 Cultural Sustainability in Environmental Art History

Within environmental art history, a pool of discourse exists that focuses specifically on sustainability and art. Due to the overlap of sustainability with ecological themes, many of the artworks discussed within art historical sustainability discourse are eco artworks. The art and sustainability niche is championed primarily by Sacha Kagan, in the anthology *Sustainability: A New Frontier for the Arts and Cultures* (edited by Kagan and Volker Kirchberg) (2008), and Kagan's monograph *Art and Sustainability* (2011). Here, sustainability in art calls for a focus on works that engage themes of intergenerational justice and questions what the future will look like for subsequent generations (Bachmann 2008). Taking the Brundtland Report as a starting point, Kagan argues that artistic practices that engage with sustainability ideally incorporate concepts of social justice, cultural diversity, and ecological issues (Kagan 2008). What sets sustainability in art apart from all other forms of eco art, then, is an awareness of the global/local interrelated issues of cultural, social, economic, political, and ecological spheres (Kagan 2008). As Kagan notes, "An art that deals with values, processes and issues of sustainability will also be an art that is *critical* in several senses: critically confronting modernity and its mythical figures (the

individual, progress, affluence, growth technology)" (Kagan 2008). Kagan adopts Robinson's definition of sustainability, which he interprets as cultural sustainability, because it is less exclusively tethered to immediate practical outcomes and more open to creating alternative worldviews for long-term improvement of our relationship to the natural world (Kagan 2011). While Kagan briefly mentions Denes in his 2011 text, referring to *Tree Mountain—A Living Time Capsule* (1992–1996), he doesn't explore the artist's oeuvre more widely to examine the many facets of it that engage sustainability. Having outlined key definitions established the broader category of eco art surveyed, Denes's work can now be centered.

## 5 Agnes Denes's Artistic Expressions of Sustainability

Since the mid-twentieth century, Denes has developed a varied body of work in an expansive array of mediums that addresses a wide range of concepts. A self-directed researcher and polymath, she has long been interested in moving away from disciplinary tunnel vision toward interdisciplinary practice, seeing specialization as a hindrance that she calls the "octopus model" (Denes 2008). The disciplines, she explained, are like tentacles of an octopus, unconnected and prone to communication misunderstandings. Informed by her research in history, physics, mathematics, environmental science, philosophy, ecology, and speculative world-building, Denes has created metallic-ink drawings, holograms, sculptures, machine diagrams and graphs, amphitheater models, and has engaged many more mediums. While her creative practices are varied, all are informed by a signature sense of mathematical accuracy that blends philosophical concepts with geometric design. For instance, in *The Human Argument* series (1969–1970), the artist combines critical reflections on human self-importance and contradictions with precisely drawn India ink pyramidal graphs on lined paper. Her wide-ranging interests led Denes to many unprecedented discoveries and inventions. For instance, Denes created the first 360-degree hologram of a rice seed growing in *Anima/Persona—The Seed* (1980) (Denes 1992). She designed a machine that would disperse an endless canvas, and her drawing *Probability Pyramid—Study for Crystal Pyramid* (1976) was used for the basis of I. M. Pei's Louvre Pyramid entrance (Selz 1992; Hobbs 1992).

Despite her innovations, Denes remains vastly underexamined. The artist is aware that her dynamic interests, and her status as a woman in the male-dominated sphere of environmental art in the late 1960s, made her work challenging to some: "Few bother to decipher your work until someone, like a critic or big collector tells you that it's important," she observed. "Until then, you are not smart or unique, you are just difficult" (Denes 2008). Denes created many of her works with little mainstream support, and outside of the art world celebrity of her contemporaries. Having begun to receive widespread acclaim only in her 90s, with her largest survey show to-date at The Shed in New York City in 2019–2020, Denes spent much of her career as her own historian. She wrote prolifically and chronicled her own works and thought processes in many texts, anthologized in *The Human Argument* (2008). Her writing functions as a critical roadmap to her visual artworks but also stands as a practice in

and of itself. Thus, an exploration of issues related to sustainability in Denes's work can start with an examination of her writing.

## 6 Sustainability in the Writing of Agnes Denes

Key themes of sustainability, including an interest in intergenerational justice and the overlap of social, economic, and ecological concerns on a global scale, occur throughout Denes's writing practice. In the 1960s, for example, Denes developed her concept of "eco-logic," which she defines as "a complex of site-oriented artworks that bring together philosophical concepts and ecological concerns" (Denes 1993). Eco-logic is influenced by what Denes sees as a crisis of humanity due to our decision to take evolution and the life of the planet into our own hands while simultaneously depleting natural resources at an unsustainable rate (Denes 2008). Denes also observes that the human-catalyzed crises we face are increasingly global, noting that "for the first time in human history, the whole earth is becoming one interdependent society with our interests and problems intertwined and interfering" (Denes 2008). In response to these ecological problems, Denes sees the artist as a kind of mediator, providing collaboration across disciplines, helping to reimagine our understandings of the natural world, and enhancing the way we conceptualize our future in response to planetary crisis (Denes 2008). While much of this writing carries undertones of sustainability in its focus on ensuring security for future generations through ecologically centered decision-making in the present, Denes also refers to sustainability explicitly in her writing. In a text collected in *The Human Argument*, she writes, "The focus of my art is my deep-rooted interest in human evolution, sustainable development, ecology, and the survival of endangered species" (Denes 2008). The need to create what Denes termed an ecological "global consciousness" and the endangerment of subsequent generations through the squandering of natural resources are present throughout Denes's writing and inform a wide range of work that imagines a future beyond the artist's own life.

In Denes's *Book of Dust*, written over a 16-year span (1971–1987), the artist meditates on the significance of dust as a crucial element of time that underpins all of existence like two bookends (Denes 1989). Dust, here, is understood as a great unifier, tethering humans to the planet and galaxies and creating a bridge into the territory of the nonhuman. Coupled with this, Denes often writes about how anthropogenic altering of the planet has inflated an anthropocentric sense of importance: "Humanity is a self-knowing, self-conscious, curious organism, peculiar to itself, whose intelligence has interfered with nature's built-in self-correcting mechanism. We see ourselves and the universe with an anthropocentric view and base all our knowledge on this illusory perception of reality" (Denes 2008). Denes's overt interests in ecological thinking on a global scale, exemplified here, and her more philosophical interests in thinking on broader timescales less centered around the human, as in *Book of Dust,* align with Robinson's definition of sustainability as that which imagines new ways of conceptualizing our relationship to nature. At the same time, her dedication to deep time echoes Kagan's call for sustainability artists to

engage with intergenerational justice. All of these qualities can be summarized in Denes's concept of eco-logic, which would inform her environmental sculpture works and her gallery works for the next several decades.

Denes's environmental sculptures are essentially artistic interventions into the landscape that are developed outside traditional gallery spaces and utilize nature as a collaborator. Historically, they have manifested in the forms of temporary fields and permanent forests that combined intellectual concepts with the unpredictable growth and decay of living plants. Her environmental sculptures hold particular historical significance because the earliest one, entitled *Rice/Tree/Burial with Time Capsule* (1968–1979), marks an origin point for eco art. *Rice/Tree/Burial* also signals the beginning of the artist's commitment to environmentalism, sustainability, and eco-logic. It is the source for many of the core elements that have evolved in Denes's subsequent public works, such as the creation of liminal space for sensorial encounters that inform the viewer's understanding of the natural world; the advent of community engagement as a central precept; the intentional locations of the works near urban centers to promote relative accessibility; and the collaboration with living plants.

## 7 Agnes Denes's Environmental Sculptures

Denes originally created *Rice/Tree/Burial* in 1968 in Sullivan County, New York, recreating it once more in 1977–1979 at Artpark, Lewiston, New York. In both iterations, Denes planted a field of rice, temporarily chained trees together, and buried a haiku in the first iteration and a time capsule filled with questionnaires in the second. Together, these three acts together constitute what Denes calls the Event: the moment that symbolizes her commitment to improving relationships between humans and the planet. *Rice/Tree/Burial* (first iteration) was a wholly private act, after which no visible traces were left on the landscape and the only photos that exist are Denes's own. The artist kept no copies of the haiku, which was written and buried on-site to complete the work. *Rice/Tree/Burial* (second iteration) was located in Artpark, near the Niagara Gorge, and was publicly accessible for 2 years as the rice grew. This iteration included a buried time capsule with questionnaires filled out by students from around the world, which were placed inside a steel capsule in a lead box encased in nine feet of concrete, set to be opened in 2979. A plaque marks the burial site and is the only permanent structure left after the rice was harvested and the trees unchained. In her own writing on both iterations of *Rice/Tree/Burial*, Denes notes, "I planted rice to represent life, chained trees to indicate interference with life and natural processes, and buried my haiku poetry to symbolize the idea, or concept, of human intellectual powers and creation (thesis, antithesis, synthesis)" (Denes 2008).

Unlike the first iteration, *Rice/Tree/Burial* (second) was relatively accessible to the public and engaged a number of communities, expanding Denes's initial investigations of encounters with the natural world to include the viewer. This was assisted in part by the work's location in Artpark, a park and cultural institution

that promotes public interaction with site-specific art. Their mission statement reads, "Artpark opened in 1974 as an unprecedented experiment in artist-public interaction and site-specificity that balanced a populist mission with the commissioning of some of the most avant-garde, investigational art of its day" (Artpark 2020). Artpark commissioned works by other well-known environmental artists, including Nancy Holt, Dennis Oppenheim, and Ant Farm, some of which shared similar themes with Denes. For instance, Holt's *Hydra's Head* (1974), which consists of a series of small concrete-lined pools of water carefully arranged to reflect the hydra constellation, is also a dynamic ecologically engaged work. Though unlike Denes's focus on fields and planting, Holt's pools center interactions of water, shifting sunlight, and celestial/terrestrial connectivity (Holt 2011). For the 2 years that *Rice/Tree/Burial* was open to visitors of Artpark, Denes engaged local college students in the work's creation and maintenance. Additionally, during the performance of chaining trees for this iteration, Denes invited local Indigenous communities to observe her, though she does not clarify which specific community was involved (Denes 1992). Public engagement was also necessary to complete the event, as Denes buried a time capsule filled with questionnaires, which included questions such as "Do you believe humanity will become extinct one day?" and "Which do you think will prove ultimately more important to humanity—science or love?" inviting participants to contemplate the future of life on earth long before widespread concern for the planet would enter mainstream environmentalism.

After *Rice/Tree/Burial*, Denes went on to realize three more environmental works, entitled *Wheatfield—A Confrontation* (1982), *Tree Mountain—A Living Time Capsule* (1992–1996), and *A Forest for Australia* (1998). The second was another temporary field, planted in downtown Manhattan, and the last two are permanent forests in Finland and Australia, still in existence. All responded to varying environmental concerns and carried overtones of sustainable thinking. For instance, *Wheatfield* engaged a range of issues surrounding the global trade of seeds supporting small-scale rather than commercial farming. *Wheatfield* was also an ecovention because in the process, Denes cleaned out a polluted patch of land in the Battery Park Landfill in downtown New York (Denes 2008). Her third environmental sculpture, *Tree Mountain*, reclaimed an abandoned mining area while simultaneously preserving an endangered species of pine tree (Spaid 2002). Finally, her 1998 work, *A Forest for Australia*, responded to issues of desertification and became a powerful meditation on the heightening weather extremes unique to Australia (Chevalier 2021).

Returning to *Rice/Tree/Burial* allows for a consideration of critiques of Denes's practice when assessing the value of her work for discourses of sustainability. Occasionally, Denes's environmental sculptures have been criticized in terms of their practical execution. In *Decolonizing Nature* (2016), T.J. Demos critiques Denes's *Wheatfield* for being a monoculture, which could be extended to *Rice/Tree/Burial* as well. However, as Spaid notes, a defining characteristic of eco artworks is their ability to engage with a higher amount of risk and experimental approaches, rather than functioning as entirely scientifically guided reclamation projects (Spaid 2002). Eco artworks do not need to be entirely committed to practical

solutions — they aren't sustainable development projects, but rather align with Kagan's definition of cultural sustainability. The value in these works lies more in a conceptual engagement with sustainability, the handlings of time, perceptions of nature, and engagement with community in this experience. *Rice/Tree/Burial* in this sense is deeply engaged with sustainability, though it may not uphold contemporary standards of polyculture farming and sustainable development with its single-crop planting.

For instance, Denes's use of a time capsule, which reoccurs throughout many of her subsequent environmental sculptures, holds particular value for conversations around sustainability. Not to be opened for a millennium, the time capsule functions as a sustainability element in its interest in communicating with future generations, and in the specific questions it prompted about how environmental concerns would shape the future, a central theme in the Brundtland definition of sustainability. Denes's engagement with the millennium timespan also holds poetic significance. It would only be possible for the capsule to be opened if humanity still exists in a 1000 years — if sustainable living is actually achieved. By centralizing public interaction as central to the second iteration of *Rice/Tree/Burial*, Denes develops her own interactions with the natural world from the first iteration by expanding them, inviting viewers to reevaluate their own encounters and perceptions of nature, framed within the contexts of a site-specific, experiential work of eco art. The community engagement in the time capsule questionnaire and in the direct experience of the work itself are emblematic of Robinson's call for sustainability to embrace community-driven environmental knowledge. Denes's work functions as a kind of proto-sustainability practice, created decades before widespread use of the term but still incorporating many of the concepts of sustainability that would come later. While Denes's subsequent environmental sculptures would receive more mainstream attention, in particular her well-known *Wheatfield* and to a lesser degree *Tree Mountain* and *A Forest for Australia,* one aspect of Denes's ecological oeuvre remains largely underexamined: her ecologically focused gallery works. Denes's 2005 work, entitled *Pyramids of Consciousness*, was created decades after *Rice/Tree/Burial*, yet continues to engage her early concerns for sustainability reimagined here in response to more specific pressing environmental concerns.

## 8 Agnes Denes's *Pyramids of Consciousness* (2005)

The four large, clean-edged pyramids in the gallery space of the Shed in New York City are so mathematically precise that they resemble computer renderings. Elevated on square wooden stands, the pyramids exceed the height of the viewer, each 10 ft. tall and weighing 1.5 tons. Three of the four pyramids are made of transparent acrylic, allowing for a view into their liquid-filled center, while the fourth refuses transparency with a mirrored surface. Pure tones are presented by three: one filled with inky black liquid, one with clear water, and one a sleek mirrored surface, with the uncanny digital rendering effect broken by the fourth pyramid, which is filled with a muddy brown liquid. Circling around each four-sided pyramid and gazing

inward, it becomes apparent that each offers a different viewing experience depending on the liquid content or mirrored surface. Whereas the clear water pyramid offers a semitransparent warping of the gallery space, the crude oil pyramid gives nothing away, becoming almost reflective in its blackness. The brown water pyramid has sediment at the bottom and is the only pyramid in which the particles floating inside are visible. Finally, taking in the fourth pyramid, the viewer is granted a mirrored surface, its slanted sides distorting the gallery walls as the viewer now finds themselves relocated within Denes's pyramids. The work described here is a 2019 reinstallation of Denes's *Pyramids of Consciousness*, originally created for a 2005 installation at Ballroom Marfa, Texas. The liquids in each of the pyramids are pure water, crude oil, and polluted water taken from a local source – for the 2005 installation in Texas, the third pyramid originally held polluted water from the Rio Grande (Denes 2020).

In 2005, Denes was invited by curator Fairfax Dorn to create a work for the exhibition *Treading Water* at Ballroom Marfa, which brought awareness to the global environmental issues of water pollution and sustainability (Denes 2020). Dorn's exhibition was motivated by concern about the proposal to begin drilling and extracting the underground aquifers in West Texas, which in turn threatened to disrupt the fragile grassland ecosystems. Dorn sought out Denes because of her long-standing commitment to environmental issues (Dorn 2020). The result of the invitation was *Pyramids of Consciousness*. Working with an aquarium company, Denes carefully engineered each of the pyramids, reflecting the mathematically precise nature of many of her other signature pyramidal works. Here, the liquid-filled and mirrored pyramids were dynamic, responding to their local environment. As Dorn notes, "when the weather changed, so did the life inside the pyramids; changes in atmospheric pressure were reflected in the behavior of the enshrined liquids, bubbling oil, and turbulent water that bore witness to the balance of forces so carefully governing our environment" (Dorn 2020). Denes writes that *Pyramids of Consciousness* centers issues of "clean water, survival, politics, human weaknesses and needs. They refer to the global problem we must soon face with the life-giving substance of water and the politics that surrounds it" (Denes 2020). Whereas the artist's writing on eco-logic and her environmental sculptures addressed global environmental issues on a more conceptual level, here Denes presents a direct interest in the social and global ramifications of a specific, pressing environmental issue with the goal of engendering conversations around sustainability and clean water.

Denes hoped that the mirrored surface of one of the pyramids, which allowed gallery visitors to see themselves in the work, would prompt a reflection on what they were doing to engage or address issues of water pollution. The black pyramid filled with crude oil refers to the global reality of our dependence on the extraction and transfer of hydrocarbons under petrocapitalism. Here, the term "hydrocarbons" is employed rather than "fossil fuels," in line with Bart H. Welling's argument not only that it is more concise, but also because it defamiliarizes these substances as solely destined to be used as fuels, in order to open them up to new meanings and possibilities (Welling 2020). *Pyramids of Consciousness* is a forerunner of the

emerging field of petroaesthetics, which Welling describes as an inquiry that "has mostly focused on limitations in contemporary ways of representing oil depletion, global warming, and related problems" (Welling 2020). We live in a petrocultural world where hydrocarbons are implicated in nearly all aspects of our lives and are shaping the planet we live in, which by extension constitutes the ultimate framework of our perceptions. Despite this, we rarely, if ever, come face to face with hydrocarbons. They are kept out of sight, shipped around the world, with oil and petroleum industries carefully controlling representations of how extraction is visualized. As Gavin Bridge notes, the landscapes of extraction, which are the origin of nearly 81% of the energy we use, are often hidden from modern life, only coming to the surface during a rupture or environmental disaster, such as an oil spill or a gas leak (Bridge 2009). Artists engaged in petroaesthetics can play a critical role in advocating sustainable reevaluations of our relationship with hydrocarbons by representing them to the viewer as artistic medium. Denes's *Pyramids of Consciousness* may be the first time a viewer comes face to face with a ton of crude oil, set in contrast to the austere, white-walled gallery space.

The link between crude oil, polluted water, pure water, and mirror surface creates a symbolic web that highlights both the global issue of water pollution and the sustainable practices that are needed to navigate this. Environmental crises exacerbate water stress, which in turn creates a global, transboundary emergency as water does not organize itself around geopolitical borders. Many countries share water resources, yet threats of water scarcity and pollution become increasingly urgent (UN Water Report 2021). Ensuring clean water globally is the sixth Sustainable Development Goal (SDG 6), established by the United Nations in 2015 as a target for 2030. Water implicates all layers of sustainability issues, from environmental to social to economic (UN Water Report 2021). Industrial activities, many of which are hydrocarbon centered or powered, are responsible for a significant amount of water pollution – as Abambagade Abera Mitiku notes, "electroplating, mining metal, refining metal, smelting and chemical industries and manufacturing processes are sources of anthropogenic heavy metals in water" (Mitiku 2020). In this context, Denes's *Pyramids of Consciousness* becomes a kind of artistic and symbolically charged microcosm of global issues, condensed into the gallery space, with the pure water pyramid existing as the sustainability goal for the future, the crude oil pyramid reminding us of hydrocarbon dependency and industrial activities that harm clean water sources, and polluted water as the outcome and current reality. Finally, the mirrored pyramid exists as a provocation, to allow viewers to see themselves within this triad of dirty water, oil, and clean water.

While Denes does not present a practical, immediate solution to water pollution, she does set up an arena for reflection, contemplation, and thinking across global sustainability issues about what connections may be teased out when focusing on specific problems. As Robinson summarizes in his text on sustainability, "What is needed is a form of transdisciplinary thinking that focuses on the connections among fields as much as on the contents of those fields; that involves the development of new concepts, methods and tools that are integrative and synthetic, not disciplinary and analytic; and that actively creates synergy, not just summation" (Robinson

2004). Denes has written frequently about her interest in transdisciplinary thinking, and in combining complex global issues with aesthetic sensitivity, drawing the viewer in with the initial beauty of the work and then opening up engagement with a range of concepts and global issues (Denes 2008). *Pyramids of Consciousness* offers to create connections across intertwined global issues, fusing environmental concern with aesthetic attention, carefully presented in clean, sharp pyramidal forms.

## 9 Summary

Artists can play a central role in developing cultural sustainability, engendering community knowledge-building, and, perhaps most importantly, can address root causes of environmental issues located deep within our cultural understandings and conceptions of the natural world. Rich linages of green humanities scholars have made the argument that if we are to move forward and develop sustainable solutions, deep psychological changes in the way we conceptualize the natural world are necessary. From William Cronan's *The Trouble with Wilderness; or, Getting Back to the Wrong Nature* (1995) to Val Plumwood's *Environmental Culture: The Ecological Crisis of Reason* (2001), a recognition that ecocentric, philosophical engagement with the natural world must go hand in hand with scientific and economic sustainable development is well established. Although sustainability in art historical discourse is an emerging field, certain artists have employed sustainable thinking for decades. Agnes Denes has developed a prophetic oeuvre that engages concepts of sustainability in her writing, environmental sculptures, and gallery works, which only continue to deepen in significance as the urgency of environmental crisis progresses.

## 10 Cross-References

▶ Sustainability Definitions, Historical Context, and Frameworks

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