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Sounding the Alarm: An Introduction to Ecological Sound Art

Zvonenje alarma: uvod v ekološko zvočno umetnost

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IZVLEČEK

ABSTRACT

V minulih letih se je kar nekaj zvočnih umetnikov v svojem delu začelo posvečati ekološkim temam in tako prispevalo k porastu gibanja »ekološke zvočne umetnosti«. Članek zasleduje ta razvoj, raziskuje vplive in postreže s primeri umetnikov, katerih delo trenutno definira to pomembno in aktualno novo polje.

In recent years, a number of sound artists have begun engaging with ecological issues through their work, forming a growing movement of 'ecological sound art'. This paper traces its development, examines its influences, and provides examples of the artists whose work is currently defining this important and timely new field.

Introduction

What is the sound of climate change?

The groan and crash of a calving glacier as it breaks apart and falls into the sea? The howl of a hurricane as it travels on its destructive path? The roar of aeroplanes and cars as they belch carbon into the atmosphere?

Or is it perhaps an absence of sound: the ever-decreasing variety of animal calls as species go extinct, or the silencing of the once-rich soundscapes of the earth's tropical rainforests?

For most of us, the sound of climate change is predominantly words, most of them overwhelmingly negative: an onslaught of warnings from climate scientists, cynicism

from climate sceptics, empty promises from politicians, scary stories from the media – and, from those of us who care, a rhetoric often characterised by anger, fear, and despair. Add to these the fairly unappealing commands to ration the carbon-hungry luxuries we enjoy so much, and with the best will in the world, it's no wonder that so many of us have closed our ears in psychological self-defence.

But might there be alternative ways to 'sound out' contemporary ecological crises; creative approaches that might capture our imagination, fuel our motivation, and help our tired ears to listen, understand, reconnect, and reimagine how things could be? In recent years, an increasing number of artists have begun doing just that, using sound as a medium not just to raise awareness of ecological issues, but to help us to understand them from new perspectives, relate to them in new ways, and reconnect with them in ways that might just help motivate us to act.

This paper sets out to provide an initial introduction to this significant new movement, which it will call 'ecological sound art'. It begins by establishing its historical context with a brief examination of the various ways in which humans have used sound and music to express their ecological relationship with their environment, from Neolithic sonic experimentations to the use of environmental sound in Western classical music, leading up to the recent establishment of the academic field of ecomusicology. It then turns to look at how the sonic dimension of the environmental movement of the 1960s found expression in Rachel Carson's seminal text *Silent Spring*, the founding of the acoustic ecology movement, and the development of the genre of soundscape composition. Moving on to the establishment of the new fields of both eco-art and sound art in the 1990s, it then proceeds to identify the growing contemporary movement of ecological sound art that exists at the intersection of these fields, but which is currently going unrecognised, and thereby being excluded from the discourse surrounding the cultural response to modern ecological issues. The final section of the paper aims to take the first step towards rectifying this by providing an initial introduction to the work of some of the ecological sound artists who are currently defining the field.

Sound, Music, and Ecology

The word 'ecology', in its most basic and fundamental sense, refers to the study of the interconnections between the different elements within a system; most commonly, it is used to denote that area of biological science which deals with the network of relationships between living organisms and their environment, or *ecosystem*. Humans have always used sound and music as a fundamental means of engaging with the natural ecosystems they exist within, influence, and depend upon. The field of archaeoacoustics has uncovered evidence of Neolithic humans' creative use of acoustically rich spaces and resonant rocks; and the expression of our relationship with the world around us remains the primary focus and function of sound and music in many cultures throughout the world, such as in the throat singing of Tuva, or the yodelling of the Bayaka pygmies. Evocations of the natural world and our emotional responses to it also abound in Western musical history, in works such as Vivaldi's *Four Seasons* (1723),

Beethoven's *Pastoral Symphony* (1808), Saint-Saens' *Carnival of the Animals* (1886), and Debussy's *La Mer* (1905). Claude Debussy in particular was a firm believer in the importance of environmental sound to music, declaring in 1909:

*Too much importance is attached to the writing of music, too much to the formula, the craft: we seek ideas inside ourselves, when in fact they should be sought from outside. We combine, we construct...we do not hear around us the countless sounds of nature, we do not sufficiently appreciate this immensely varied music which nature offers us in such abundance...And there, according to me, is the new way forward. But...I have scarcely glimpsed it, since what remains to be done is immense!*¹

With Thomas Edison's invention of the phonograph in 1877 came the new ability to capture sound and play it back, meaning that the sounds of the environment could themselves be used as compositional material; and in 1924, composer Ottorino Respighi took the radical step of featuring a phonograph recording of a nightingale in his symphonic poem *Pines of Rome*, becoming the first composer to incorporate recorded environmental sound into a piece of music. Since then, many other composers have utilised recordings of environmental sound as a musical 'voice', in works such as Alan Hovhaness' *And God Created Great Whales* (1970), Einojuhani Rautavaara's *Cantus Arcticus* (1972), and, more recently, Richard Blackford and Bernie Krause's *The Great Animal Orchestra Symphony* (2014). French composer François-Bernard Mâche, meanwhile, employed techniques learned from his former teacher Messiaen to use environmental sounds as a compositional 'model', transcribing and orchestrating recordings of birds, insects, wind, fire, and water to create direct musical translations of ecological dynamics and processes, realising John Cage's prescient 1957 statement (paraphrasing Ananda Coomaraswamy) that "the possibilities of magnetic tape...[mean] that we are, in fact, technically equipped to transform our contemporary awareness of nature's manner of operation into art."² Mâche himself proposed that this technique might constitute the next great development in western music, exhorting composers to seek "outside man and his own musical conventions the source of a new music, which could be both an instrument of knowledge and intercessor of a harmony with the world."³

In recent years, the increasing interest in the connections between musical and ecological issues has given rise to the new field of 'ecomusicology', defined by Aaron S. Allen in the *Grove Dictionary of American Music* as "the study of music, culture, and nature in all the complexities of those terms...consider[ing] musical and sonic issues, both textual and performative, related to ecology and the natural environment."⁴ Regarding the etymology of the term, Allen and Dawe explain that "[r]ather than as 'ecological,' the 'eco-' prefix is better understood as 'eco-critical,' referring to ecological criticism, which is the critical study of literary and other artistic products in relation to the environment (and

1 Claude Debussy, François-Bernard Mâche, *Music, Myth and Nature, or The Dolphins of Arion*, trans. Susan Delaney (Reading: Harwood Academic, 1992), 58.

2 John Cage, *Silence* (London: Marion Boyars, 1978), 9.

3 Mâche, *Music, Myth and Nature*, 190.

4 Aaron S. Allen, "Ecomusicology," in *The Grove Dictionary of American Music* (2nd edition), ed. Charles Hiroshi Garrett (New York, NY: Oxford University Press USA, 2013).

such cultural criticism typically takes ethical and/or political approaches.)”⁵ As the final part of this statement implies, ecomusicology is also firmly grounded in the modern environmental movement; as Allen states in the conclusion to its Grove entry, “ecomusicology can offer fresh approaches to confronting old problems in music and culture via a socially engaged scholarship that connects them with environmental concerns.”⁶

Acoustic Ecology

The modern environmental movement is generally traced back to the 1962 publication of a book by conservationist Rachel Carson exposing the ecological damage being done by the spraying of crops with pesticides. Notably, the powerful metaphor Carson employed for the book’s title – *Silent Spring* – was one based in sound, referring to the notion of a spring in which the absence of birdsong acts as the key indicator of the damage done by the toxic chemicals, demonstrating the importance of sound and listening in interpreting and understanding the ecological dynamics of our environment on a personal and tangible level:

*It was a spring without voices. On the mornings that had once throbbed with the dawn chorus of robins, catbirds, doves, jays, wrens, and scores of other bird voices there was now no sound; only silence lay over the fields and woods and marsh.*⁷

Carson’s groundbreaking book became one of the major catalysts behind the modern environmental movement, whose rapid growth over the following decade saw the word ‘ecology’ adopt a new popular meaning, denoting the study of issues relating to humanity’s negative impact upon the healthy functioning of the earth’s ecosystems.

In 1969, in the midst of the first wave of the environmental movement, Canadian composer R. Murray Schafer published an educational pamphlet entitled *The New Soundscape* in which he encouraged an aesthetic appreciation of environmental sound, characterising the soundscape as a continuously unfolding symphony for whose content we were all responsible, and speaking out against the ever-increasing levels of noise pollution resulting from modern industrialisation:

*One of the purposes of this booklet is to direct the ear of the listener towards the new soundscape of contemporary life, to acquaint him with a vocabulary of sounds he may expect to hear both inside and outside concert halls. It may be that he will not like all the tunes of this new music, and that too will be good. For together with other forms of pollution, the sound sewage of our contemporary environment is unprecedented in human history.*⁸

5 Aaron S. Allen and Kevin Dawe, “Ecomusicologies,” in *Current Directions in Ecomusicology: Music, Culture, Nature*, ed. Aaron S. Allen and Kevin Dawe (Abingdon: Routledge, 2016), 2.

6 Allen, “Ecomusicology.”

7 Rachel Carson, *Silent Spring* (London: Penguin, 2000), 22.

8 R. Murray Schafer, *The New Soundscape: A Handbook for the Modern Music Teacher* (Scarborough, ON: Berandoi Music Limited, 1969), 3.

Three years later in 1972, along with colleagues at Simon Fraser University in British Columbia, Schafer established the World Soundscape Project (WSP), whose objectives included promoting public awareness of environmental sound, the preservation of natural, 'hi-fi' soundscapes, and limiting the spread of noise pollution. A significant part of its activity involved building an extensive library of field recordings in an attempt to 'preserve' endangered sounds and soundscapes for posterity, and to study the ways in which soundscapes were changing over time. Out of these activities evolved the new discipline of 'acoustic ecology', defined by Schafer in his 1977 book *The Tuning of the World* as "the study of the effects of the acoustic environment or soundscape on the physical responses or behavioural characteristics of creatures living within it."⁹ Today, acoustic ecology constitutes a significant global movement, centred upon the World Forum for Acoustic Ecology (WFAE), with regional branches all over the world.

The activities of the WSP also gave rise to a new compositional form as members such as Barry Truax and Hildegard Westerkamp began working creatively with the sounds being recorded, creating the new genre of 'soundscape composition'. The compositional manipulation of recorded environmental sound was already well-established as the basis for the related genres of electroacoustic composition and *musique concrète*; however, what set soundscape composition apart was its fundamental principle that "the original sounds must stay recognisable and the listener's contextual and symbolic associations should be invoked."¹⁰ By working with the sound's real-world associations as a compositional parameter, soundscape composers aimed to expand and enhance the listener's awareness and appreciation for their environment through its soundscape in a way that Barry Truax argued could have positive ecological implications:

*...the successful soundscape composition has the effect of changing the listener's awareness and attitudes towards the soundscape, and thereby changing the listener's relationship to it. The aim of the composition is therefore social and political as well as artistic...[a key principle being that it] enhances our understanding of the world, and its influence carries over into everyday perceptual habits...Thus, the real goal of the soundscape composition is the reintegration of the listener with the environment in a balanced ecological relationship.*¹¹

Eco-art

The increasing concern with ecological issues was also reflected in the wider art world: in 1962, the same year as the publication of Carson's *Silent Spring*, German artist Joseph Beuys proposed a work of performance art which would involve cleaning up the polluted Elbe river in Hamburg; and this was followed by works such as Alan

9 R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World* (Rochester, VT: Destiny Books, 1994), 271.

10 Barry Truax, "Soundscape Composition as Global Music: Electroacoustic Music as Soundscape," *Organised Sound* 13/2 (2008): 105.

11 Barry Truax, *Acoustic Communication* (New York, NY: Ablex Publishing, 2001), 237–241.

Sonfist's *Greenwich Village Time Landscape* (1965; realised 1978), which involved planting a forest in a disused lot in New York City (and which remains there to this day); Agnes Denes' *Rice / Tree / Burial* (1968), a ritualistic performance designed as an expression of the artist's environmentalist convictions; and Nicolás García Urriburu's *Coloración del Grand Canal* (1968), in which he dyed Venice's Grand Canal green to protest against its pollution. Over the following years, in parallel with the growth of the environmental movement, many other artists such as Helen and Newton Harrison, Bonnie Sherk, and Hans Haacke all began creating works which explicitly addressed ecological issues. However, for many years these works were subsumed within the general category of 'environmental' art, with critics and curators conflating them with works which utilised the natural environment as site or material, but which didn't necessarily have anything to do with ecological issues; and it was not until the 1990s that exhibitions began to appear which recognised them as a distinct and important movement in their own right. Among the first to do so was 1992's *Fragile Ecologies*, a retrospective of the past thirty years of ecologically-engaged art curated by Barbara C. Matilsky, who coined the term 'ecological' or 'eco-' art to denote "a new approach to art and nature based upon environmental ethics."¹² Following this recognition as a distinct artistic genre, and in parallel with the sharp increase in public awareness and concern around climate change, the twenty-first century has seen a surge in interest around eco-art, evidenced by a stream of international exhibitions and ever-increasing number of publications devoted to it.

Sound Art

Towards the end of the twentieth century, at around the same time that eco-art was beginning to gain widespread recognition, a different series of exhibitions was curating another new genre into existence: 'sound art'. Sound art is a wide field with fluid boundaries, encompassing works in a variety of media which share a core concern with issues around sound and listening, with sound constituting the medium, material, and/or subject matter for the work. The dividing line between sound art and music can sometimes be unclear; indeed, prior to the term gaining currency in the late 1990s, works which would now be considered sound art were generally categorised as experimental music, and even today the distinction between the two depends largely upon one's individual understanding of the terminology. For the purposes of this paper a relatively inclusive definition of sound art will be used whose scope is roughly equivalent to Leigh Landy's 'sound-based music', defined as "the art form in which the sound, that is, not the musical note, is its basic unit"¹³, and incorporating electronic / electroacoustic / acousmatic music, soundscape composition, *musique concrète*, listening art, *ich facilitate a personal connection with ecologic*, radiophonic works, sounding or sound-based sculptures, installations, and site-specific works. Additionally, since many works fit into more than one of these

¹² Barbara C. Matilsky, *Fragile Ecologies: Contemporary Artists; Interpretations and Solutions* (New York, NY: Rizzoli, 1992), 56.

¹³ Leigh Landy, *Understanding the Art of Sound Organization* (Cambridge, MA: The MIT Press, 2007), 17.

categories, the general term ‘sound work’ will be used to refer to all works, regardless of form or context.

Sound works possess a power unique to the medium. Unlike the visual, which is experienced as something outside of the body and at a remove from the self, listening to sound is an intensely personal, sensual experience, that penetrates our bodies, and gets inside our heads. We can become immersed in sound; bathe in it; be transported by it. Sound does not just tell us what is, but what is happening, in our environment. Listening to sound is key to the way in which we experience and understand the world we live in; and it can also be transformative, possessing the power to alter that understanding. Salomé Voegelin writes of the ‘sonic possible worlds’ that are opened up when we listen to sound works, enabling us to inhabit alternative realities, and offering us new perspectives and possibilities of how things could be:

To hear the work is to enter it as world produced from the actuality of its ideas extending into the possibilities of its materialities...the sound artwork [is] a sonic possible world that has a concrete semantic materiality which we inhabit in listening and that we thus build presently from the time and space of our perception, and that we extend in negotiations to build the actualities of the real world.¹⁴

Ecological Sound Art

During the first years of the new millennium, as the fields of both sound art and eco-art gained momentum, and concerns around climate change increased, a number of artists began producing work which lay at the intersection of these fields, addressing contemporary environmental issues such as biodiversity loss, pollution, sustainability, global environmental justice, and climate change, through sound works. In October 2006, Joel Chadabe and the Electronic Music Foundation staged Ear to the Earth, a five-day festival of ecologically-focussed sound art in New York which would continue to be held on an annual basis until 2013; and today, Ear to the Earth operates as a worldwide network of sound artists addressing ecological issues, evidencing the existence of a tangible and coherent movement. Despite this, however, there still exists no widely-accepted generic terminology with which to identify this important and growing movement. The term ‘environmental sound art’ is already in use (as in the recent collection *Environmental Sound Artists: In Their Own Words*), carrying the same meaning as its equivalent in the visual arts – that is, denoting works which utilise the environment as site or material, but which don’t necessarily address ecological issues. Thus, continuing to reflect the established convention within the visual arts, this paper proposes ‘ecological sound art’ as the most suitable terminology for the emerging field of environmentalist sound works.

At present, this new movement of ecological sound art is yet to achieve widespread recognition: all current literature on contemporary eco-art is restricted to the visual

¹⁴ Salomé Voegelin, *Sonic Possible Worlds: Hearing the Continuum of Sound* (London: Bloomsbury, 2014), 53.

arts, while ecomusicological scholarship remains largely confined to studies of popular, classical, and folk music, with ecologically-engaged works of sound art unacknowledged by either field. This has serious implications: its lack of recognition as an artistic movement in its own right means that its unique characteristics are not being engaged with, and that it is being excluded from the critical discourse surrounding the wider cultural response to contemporary ecological issues. The final section of this paper is therefore intended to provide the first step towards rectifying this with a brief introduction to the work of some of the ecological sound artists who are currently defining this exciting and important new field.

Ecological Sound Artists

Leah Barclay is a composer and sound artist whose work reflects her belief that “[e]lectro-acoustic music, with the use of natural sounds exposing the state of the world, could be an unprecedented tool in artists taking action in ecological crisis.”¹⁵ Her works are underpinned by her ‘Sonic Ecologies Framework’, a methodology which involves the realisation of collaborative, site-specific sound arts projects incorporating community engagement and education. Examples of such projects include *Sonic Explorers*, an educational outreach programme which engages young people in ecological sound art; *The Dam(n) Project*, which uses sound art as an activist tool to respond to the destructive damming projects which threaten local water supplies in India’s Narmada valley; and *Biosphere Soundscapes*, in which Barclay works with artists and communities to use sound to measure the ecological health of UNESCO biosphere reserves. Most recently, she has been delivering ecological sound works via smartphone apps which respond to the listener’s location; in December, this technology was used to realise *Rainforest Listening* (2015) at the COP21 climate conference in Paris, with rainforest sounds being ‘planted’ around the city with a particular focus on the Eiffel Tower, at which each level immersed visitors in the soundscape of the corresponding layer of rainforest vegetation.

David Monacchi characterises his ‘eco-acoustic’ compositional practice as “multi-disciplinary: a place where technology and science meet music and art to address environmental issues.”¹⁶ His ongoing project *Fragments of Extinction*, sponsored by Greenpeace International, uses sound art to raise awareness of the value of the earth’s primary equatorial rainforests. Monacchi uses his own field recordings as the sonic material for his works, using subtle processing techniques to emphasise the natural musicality of the sounds, and projected spectrogram analyses to allow the audience to see the arrangement of the sounds they are hearing within the frequency spectrum. This functions as a demonstration of Bernie Krause’s ‘Acoustic Niche Hypothesis’, which states that in a healthy ecosystem, “each creature...[has] its own sonic niche...[which

15 Leah Barclay, “Shifting Paradigms: Towards an Auditory Culture,” *Proceedings of ISEA 2012 Albuquerque: Machine Wilderness* (Albuquerque, NM: 516 Arts, 2012): 22, accessed on October 3, 2014, http://socialmedia.hpc.unm.edu/isea2012/sites/default/files/ISEA2012_confproceedings_WEB.pdf.

16 David Monacchi, *Prima Amazonia: Portraits of Acoustic Biodiversity*, Wild Sanctuary WSI-056, 2007, compact disc, liner notes.

is] occupied by no other at that particular moment.”¹⁷ In live performance, Monacchi personally embodies the principles of Acoustic Niche Hypothesis by adding his own improvised part to the soundscape, strictly confining his performance to the available acoustic niches; thus, in his own words, “building a powerful metaphor as of one species that performs within a composite ecosystem while trying to find a balanced, harmonic relationship to it.”¹⁸ Monacchi states that his ultimate hope is that “bringing the sound of these biomes into concert halls, and perhaps revealing and interacting with their hidden aesthetic, helps to create an ecological awareness for repositioning our species within nature.”¹⁹

Matthew Burtner, who also terms his work ‘ecoacoustic’, sums up his artistic practice as “a type of environmentalism in sound...tak[ing] the form of musical procedures and materials that either directly or indirectly draw on environmental systems to structure music.”²⁰ His practice encompasses orchestral, electronic and soundscape-based works, interactive sound sculptures, and direct musical engagements with the natural environment. Many of Burtner’s works involve the use of sonification, in which ecological data sets are mapped onto musical parameters which can then be scored and played by instruments, as in *Iceprints* (2009), in which a transcription of a hydrophone recording made beneath the Arctic ice forms the basis for the piano part, with pitch determined by mapping the decline in Arctic ice from 1970-2010 onto the first six octaves of the keyboard, enabling the listener to ‘hear’ the process of ecological change. Burtner has also combined his ecoacoustic compositions with dance, theatre, and video in the three large-scale works which form his ‘Alaskan New Media Opera Triptych’: *Winter Raven* (2002), *Kuik* (2006), and *Auksalaq* (2012). In 2008 Burtner also formed EcoSono, described as “an activism network advocating environmental preservation through experimental sound art”;²¹ and through this he runs an annual ‘EcoSono Institute’, teaching others to create their own ecoacoustic works, and offers sponsorship and support to other musicians and sound artists adopting the practice of ‘ecoacoustics’.

Andrea Polli creates “media and technology artworks related to environmental science issues”²², encompassing compositions, installations and collaborative research projects which employ sonification as a tool to aid understanding of climate data. Her projects include *Atmospherics/Weather Works* (2002), which used sonifications of historic storms to create “turbulent and evocative compositions which allowed listeners to experience geographically scaled events on a human scale and gain a deeper understanding of some of the more unpredictable complex rhythms and melodies of nature”;²³ and *T2* (2006), which translated wind and wave data into

17 Bernie Krause, *The Niche Hypothesis: How Animals Taught Us to Dance and Sing* (1987), 3, accessed on January 28, 2016, <http://www.appohigh.org/ourpages/auto/2010/12/21/52074732/niche.pdf>.

• 18 David Monacchi, “Recording and Representation in Eco-Acoustic Composition,” in *Soundscape in the Arts*, ed. Jøran Rudi (Oslo: NOTAM, 2012), 247–248.

19 Monacchi, “Recording and Representation,” 248.

20 Matthew Burtner, “Ecoacoustic and shamanic technologies for multimedia composition and performance,” *Organised Sound* 10/1 (2005): 10.

21 Matthew Burtner, “EcoSono: Adventures in interactive ecoacoustics in the world,” *Organised Sound* 16/3 (2011): 234.

22 Andrea Polli, “Bio,” *Andrea Polli*, accessed on January 28, 2016, <http://www.andreapolli.com/bio.htm>.

23 Andrea Polli, “Atmospherics/Weather Works: The Sonification of Meteorological Data,” *Andrea Polli*, accessed on January 28, 2016, <http://www.andreapolli.com/atmospherics/>.

image and sound with a view to “increase awareness and appreciation of the beauty, power and importance of the ocean in a warming world.”²⁴ In 2007, Polli undertook an artistic residency with the National Science Foundation in Antarctica, resulting in a book, *Far Field: Digital Culture, Climate Change and the Poles* (2011), and the CD *Sonic Antarctica* (2009), which featured natural and industrial field recordings, sonifications of climate data, and interviews with scientists about the worrying data that their climate research is uncovering.

John Luther Adams composes music which evokes the landscape and ecology of his Alaskan home, stemming from his conviction that “music can contribute to the awakening of our ecological understanding. By deepening our awareness of our connections to the earth, music can provide a sounding model for the renewal of human consciousness and culture.”²⁵ His works are largely orchestral, but have also included electronic music and field recordings, such as *Earth and the Great Weather* (1993), which combines instruments with field recordings from Alaska and the voices of native Inupiat people naming the landscape in their own language. *The Place Where You Go To Listen* (2004-6), meanwhile, is a sound and light installation based upon the real-time sonification of geophysical and climatological data, allowing visitors to experience the fluctuating dynamics of the Alaskan ecosystem as a constantly unfolding piece of music. David Shimoni characterises Adams’ work as ‘ecocentric’, observing that “[i]nstead of making music from nature, in which nature is treated as a resource, [Adams] make[s] music with nature, in such a way that both humans (composer, performers, listeners) and the rest of the natural world retain...a sense of autonomy and creativity in the process.”²⁶

Jana Winderen is a former marine biologist whose works mainly focus on underwater soundscapes. One of her recent collaborative projects, entitled *Silencing of the Reefs*, investigates the changing soundscapes of the earth’s remaining coral reefs and their ecosystems in a bid to better understand them and how they are being threatened by human actions, using the results both for scientific study and for awareness-raising public art installations and concerts. As Winderen states, “it is important to hear this field since it is inhabited by beings who have existed for many millions of years longer than our species...it is an issue of respect, of sensitivity and of developing a questioning approach to the environment.”²⁷

Douglas Quin is a sound recordist and composer whose works *Oropendola* (1994) and *Forests: A Book of Hours* (1999) blend acoustic and electronic musical improvisation with “unadulterated and unedited field recordings, processed soundscapes, electroacoustic instruments, human voice and hybridized sounds that comprise both living voices and electronically generated timbres.”²⁸ His *Polar Suite* (2011), meanwhile, em-

24 Andrea Polli, “T2,” *Andrea Polli*, accessed on January 28, 2016, <http://www.andreapolli.com/t2/>.

25 John Luther Adams, *The Place Where You Go To Listen: In Search of an Ecology of Music* (Middletown, CT: Wesleyan University Press, 2009), 1.

26 David Shimoni, “songbirdsongs and Inuksuit: Creating an Ecocentric Music,” in *The Farthest Place: The Music of John Luther Adams*, ed. Bernd Herzogenrath (Boston, MA: Northeastern University Press, 2012), 237.

27 Jana Winderen, interview by Angus Carlyle, in Cathy Lane & Angus Carlyle, *In the Field: The Art of Field Recording* (Aaxminster: Uniformbooks, 2013), 157.

28 Douglas Quin, *Forests: A Book of Hours*, EarthEar ee9022, 1999, compact disc, liner notes.

plays a wireless sensor bow called the ‘K-Bow’ to enable the Kronos Quartet to ‘play’ sounds captured by Quin at the North and South Poles, articulating them through their string instruments. Quin reflects that the process of “negotiat[ing] the technology and relationship to natural sound, and soundscape into music...allows me and the people I’m working with – like Kronos – to understand...the connective tissue that binds us all together as living creatures and beings on this planet.”²⁹

Walter Branchi composes electronic works designed to complement the natural soundscapes of specific environmental locations, facilitating a deeper listening to, and heightened appreciation of, the sounds of nature. Branchi calls this approach ‘integrated’ or ‘eco-music’, explaining that it represents an attempt to stimulate humankind’s ecological awareness through “music that goes beyond the concept of the world centered exclusively on anthropocentric values, but is based on ecocentric values... interwoven into a network of interdependent relationships with the world outside... [in which the listener] is not the center of the happening, but is included; he listens to music, listening to the environment.”³⁰

David Dunn creates ‘environmental performance works’ which investigate, and often become a functioning part of, living environmental systems. Site-specific pieces such as *Entrainments 1* (1984), *Sonic Mirror* (1986-87), and *Autonomous Systems* (2003-05), involve the soundscape of a natural ecosystem being recorded, processed, played back and recorded again, creating a feedback loop in which “certain participants in the environment – the flies, the birds – begin to ‘play’ the system, interacting with it.”³¹ This ultimately springs from Dunn’s conception of music as “a conservation strategy for keeping something alive that we now need to make more conscious, a way of making sense of the world from which we might refashion our relationship to non-human living systems...I have a gut intuition that music, as this vast terrain of human activity and inheritance of our species, will provide us with clues to our future survival, and that is a responsibility worth pursuing.”³²

Conclusion

The ecological sound artists discussed here represent the tip of an iceberg that, contrary to most, is growing rather than shrinking. At a time when the world is facing grave ecological crises, yet seems unable to respond, perhaps the most urgent issue of all is finding a way to overcome our collective paralysis; and this means finding an alternative approach to the barrage of negative rhetoric which is causing so many of us to close our ears to the problem. As musician and philosopher David Rothenberg

29 Douglas Quin, interview by Leah Harrison, in Karissa Krenz, “Chiming in on the Relationship Between Noise, Sound and Music”, *New Music Box*, accessed on January 28, 2016, <http://www.newmusicbox.org/articles/chiming-in-on-the-relationship-between-noise-sound-and-music/>.

30 Walter Branchi, *Canto Infinito: Thinking Music Environmentally* (New York, NY: Open Space, 2012), 71.

31 Warren Burt, “David Dunn: Autonomous and Dynamical Systems,” in David Dunn, *Autonomous and Dynamical Systems*, New World Records 80660, 2007, compact disc, liner notes.

32 David Dunn, “Nature, Sound Art, and the Sacred,” in *The Book of Music and Nature* (2nd edition), ed. David Rothenberg and Marta Ulvaeus (Middletown, CT: Wesleyan University Press), 97.

points out, “[t]hose of us who want our species to pay more attention to the environment will not achieve our goal by only stating scary facts and harboring inadequate feelings of guilt at the damage we have wrought.”³³ The arts can play a major role in raising awareness of these issues, in expressing thoughts and feelings relating to them, and, most crucially, in helping us to conceive creative solutions.

The growing movement of ecological sound artists are doing exactly that: working at the intersection of eco-art, sound art, and environmental activism, they are sounding out contemporary ecological issues in a way that enables us to hear and understand them anew; to inhabit new sonic possible worlds that allow us to reimagine how things could be; and to adopt more environmentally sustainable ways of living, not from guilt, fear, or obligation, but from a renewed and positive reengagement with the ecosystems that we exist within and depend upon, brought to life through sound.

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POVZETEK

V zadnjih letih lahko opazamo, da vedno večje število glasbenih umetnikov v osrčje svojega ustvarjanja postavlja naravovarstveno skrb in s tem neposredno nagovarja pereče teme, kot so krčenje naravne raznovrstnosti, onesnaževanje in klimatske spremembe s pomočjo glasbenih stvaritev, medtem ko organizacije, kot je *Ear to the Earth*, združujejo takšne umetnike in tako izpričujejo obstoj oprijemljivega in koherentnega gibanja. Kulturni odziv, ki ga prispevajo k enim najpomembnejših socialnopolitičnih tem sodobnega časa, predstavlja pomemben trend znotraj zvočnih umetnosti, trend, ki mu je usojeno, da bo samo še naraščal, saj teme, ki jih nagovarja, vedno bolj vplivajo na življenja ljudi širom planeta; kljub temu ga trenutno pesti popoln akademski raziskovalni mrk.

Članek sledi razvoju tega pomembnega in naraščajočega trenda, ki ga poskuša poimenovati »ekološka zvočna umetnost«. Začne se z vpogledom, na kakšne načine je človeštvo uporabljalo zvok, da bi se soočilo s naravo skozi zgodovino, od neolitskih zvočnih poskusov do zvočnih evokacij naravnega sveta in kreativne rabe posnetkov naravnih zvokov. Članek se nato posveti uporabi zvoka kot ukrepa za okoljsko zdravje, kakor ga predstavi Rachel Carson v prelomni knjigi *Silent Spring*, in preide k raziskavi razvoja akustične ekologije in pripadajočemu umetniškemu žanru kompozicije zvočne krajine. Sledi opažanje, kako je vse večja skrb za okolje rodila gibanje eko-umetnosti in kako je njeno priznanje za poseben umetniški žanr po sebi okrog preloma

tisočletja sovpadlo s priznanjem še enega žanra: zvočne umetnosti.

Potem se članek premakne k raziskavi o tem, kako je – v času ko sta zvočna umetnost in eko-umetnost pridobila na veljavi – vrsta umetnikov začela ustvarjati dela, ki so bila na križišču teh umetnosti; o tem, da je vsakoletni festival organizacije *Ear to the Earth* zaznal obstoj oprijemljivega in koherentnega gibanja zvočnih umetnikov, ki so se posvečali sodobnim okoljevarstvenim temam. Vendar članek kljub temu prepozna, da gibanju še manjka priznanje kot tako: tako ni niti dovolj »vidno«, da bi bilo del eko-umetnosti niti ni dovolj »zvočno«, da bi bilo del ekomuzikologije in, še pomembneje, ker nima generične terminologije, preko katere bi ga prepoznali, definirali ali opisali, je v nevarnosti, da izgine med špranjami disciplin. Članek za to predlaga sprejetje termina »ekološka zvočna umetnost« kot najbolj ustreznega za opis te vzhajajoče discipline. Zaključni del ponuja uvod v nekatera jedra filozofije ekološke zvočne umetnosti, njene tehnike in metodologije s pomočjo raziskave nekaterih del umetnikov, ki trenutno krojijo disciplino: Leah Barclay, David Monacchi, Matthew Burtner, Andrea Polli, John Luther Adams, Jana Winderen, Douglas Quin, Walter Branchi in David Dunn. Konec zaznamuje dokazovanje, da je okoljska zvočna umetnost pomembna alternativa vrsti negativnih retorik, ki mnoge zavedejo k temu, da si zatiskajo ušesa pred sodobnimi okoljskimi krizami, namesto da bi uporabili zvok za medij, ki bi spodbudil prenovljen in pozitiven odnos do okolja.