

# AN URGENT ENQUIRY: WEXFORD



22/3/2018

The Raven Nature Reserve, The Wexford  
Wildfowl Reserve

DOMINIC  
BERRIDGE  
NATIONAL  
PARKS  
& WILDLIFE  
RANGER



JOHN  
KINSELLA  
WEXFORD  
WILDFOWL  
RESERVE  
STAFF



22/3/2018

## The Raven Nature Reserve, The Wexford Wildfowl Reserve

An Urgent Enquiry: Wexford began with a tour of The Raven Wood Reserve given by National Parks and Wildlife Ranger Dominic Berridge. The Think Tank then went onto the Wexford Wildfowl Reserve and was given a tour by John Kinsella of the interpretation centre and observation tower looking out over various bird hides on the North Slob.

National Parks and Wildlife Ranger Dominic Berridge met the Think Tank group at the entrance to the Raven Nature Reserve, located at Raven Point on the north side of Wexford. Acting as a forest docent of sorts, he explained that Raven Point is a sand spit, a depositional zone where sand strains mostly southward, creating sand banks and silting deposits in the wide Slaney estuary. The sand dunes have been forming since the 1600s as the wind blew sea sand into patches of Marram Grass that grew up through the accumulating sand and anchored it into hillocks or dunes.

In the mid-1880's the creation of the adjacent North Slob, the fields adjoining the forest to the west, for agricultural purposes land locked the sand spit on its western side. The site is now part of a major sand dune system, which is largely stable except for the lagoons and sand bar at its southern tip. The artificial bank on the North Slob was built as a continuation from the natural bank and clay was brought from nearby heights and from one of the small islands for the construction. The banks were eight feet (2.5 metres) wide at the top and enclosed more than 2,400 acres. By 1849 the North Slob project had been completed, conquering what had appeared to be insurmountable natural impediments along the way.<sup>34</sup>



Figures 20 & 21: The Think Tank Group walking the dunes at The Raven Nature Reserve, 2018

Tree planting in the Nature Reserve has taken place since the 1930s in order to prevent coastal erosion.<sup>35</sup> The trees mainly Corsican pines, along with other non-native species, provide a sanctuary for wildlife such as the red squirrel and have also anchored the west side of the reserve, draining of the North Slob. The isolation and the inaccessibility of parts of the slob and the sand banks off its southern tip have attracted and maintained a

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<sup>34</sup> Wexfordwildfowlreserve.ie. (n.d.). *Wexford Wildfowl Reserve*. [online] Available at: [http://www.wexfordwildfowlreserve.ie/?page\\_id=30](http://www.wexfordwildfowlreserve.ie/?page_id=30) [Accessed 18 Apr. 2018].

<sup>35</sup> Wexford Walking Trail. (n.d.). *WWT\_Raven Point Wood - Wexford Walking Trail*. [online] Available at: <http://wexfordwalkingtrail.ie/raven-point-wood/> [Accessed 18 Apr. 2018].



sanctuary for birds such as waders, Snow, Brent and Bean geese, Little Terns and Crossbills.<sup>36</sup> The dunes are rich in wild flowers, including several rarities, such as the sub species of Round-leaved Wintergreen, which is found only in Ireland on the site.<sup>37</sup>

After the walk through the trails of the Raven, the Think Tank group left for the Wexford Wildfowl Reserve. The Wildfowl reserve is jointly owned by BirdWatch Ireland and NPWS and is situated in 936 hectares of reclaimed sloblands. It is also a designated Ramsar Site, part of a Special Protection Area (SPA), a proposed National Heritage Area (pNHA), as well as a National Nature Reserve. It is one of Ireland's finest bird sites and is an internationally important wetland. Habitats include wet grassland and tillage, a brackish-water drainage channel and reedbeds. Pools have been created to attract passage waders and wildfowl.

John Kinsella gave the group a tour of the interpretation centre filled with scientific illustrations, preserved specimens of birds and eggs, dioramas of ecosystems and interactive educational games. He noted that are hides for bird watching as well as guided tours, on request. From here Kinsella, took the group on a tour of the observation tower.

Once up there, he explained the significance of the site further, noting that the area is renowned for the wide diversity and density of its birdlife. Up to 10,000 Greenland White-fronted Geese occur in winter, a third of the world population. Internationally important numbers of Bewick's Swans and Pale-bellied Brent Geese occur. It also attracts waders and wildfowl from Wexford Harbour, where an internationally important flock of Black-tailed Godwits and good numbers of Scoters winter. Slavonian Grebes are regular. Breeding birds include Pochard, Shoveler, Reed and Sedge Warbler, Cuckoo and Tree Sparrow.<sup>38</sup>



Figure 22: The Observation Tower at the Wexford Wildfowl Reserve, 2018

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<sup>36</sup> Guilfoyle, M. (2016). A Walk for the Weekend: Straight to Raven Point. *The Irish Times*. [online] Available at: <https://www.irishtimes.com/life-and-style/travel/a-walk-for-the-weekend-straight-to-raven-point-1.2537894> [Accessed 18 Apr. 2018].

<sup>37</sup> Npws.ie. (n.d.). *The Raven Nature Reserve | National Parks & Wildlife Service*. [online] Available at: <https://www.npws.ie/nature-reserves/wexford/raven-nature-reserve> [Accessed 18 Apr. 2018].

<sup>38</sup> Bird Watch Ireland. (n.d.). *Wexford Wildfowl Reserve, County Wexford*. [online] Available at: <https://www.birdwatchireland.ie/Default.aspx?tabid=220> [Accessed 18 Apr. 2018].

# WATER CONVERSATIONS

ANNA MACLEOD



22/3/2018

## Presentations at Wexford Wildfowl Reserve

Anna Macleod is a visual artist and independent researcher based in Leitrim. Her art work utilizes a variety of methods and processes to mediate complex ideas associated with contemporary, historical and cultural readings of place. She employs quasi-scientific methods, interdisciplinary collaboration, performance and socially engaged activism to critique contemporary landscapes and to build metaphoric spaces for re-imagining the future. Recent projects have focused on socio-political and cultural issues surrounding water.

She has exhibited widely nationally and Internationally. Recent residencies include: Water Rights Residency, Santa Fe Art Institute, New Mexico, USA in 2017. Joya, Arte & Ecologia, Velez Blanco, Almeria, Spain in 2016. Food Water Life, themed residency with Jorge and Lucy Orta, Banff Art Centre, Alberta, Canada.



Figure 23: Anna Macleod, *Atomic Journeys: New Mexico Banner Project*, 2017

The following four pages are a composite overview of Anna Macleod's presentation and select projects from her ongoing body of work entitled *Water Conversations*, in development since 2007. Articulated as a series of actions, small sculptures, posters, drawings and public interventions, the project explores the complex interstices between landscape, science and technology, culture and geopolitics. The collaborative aspect of the work has led to working partnerships with artists, scientists, cultural geographers, activists, engineers and local historians.

The above image is from the *New Mexico Banner Project*. The project itself consisted of a series of handmade embroidered banners relating to the nuclear industry in New Mexico from uranium mining in western New Mexico, to weapons making at Los Alamos and the subsequent dumping of depleted material at Carlsbad. The Red Water Pond Road Community Association ( RWPRCA) is a grassroots organisation of Navajo Nation families who have experienced and lived with the impacts of uranium mining and milling in the Church Rock mining area since the 1940's. The community hosts the annual Uranium Legacy, Remembrance and Action Day, a day of protest, awareness raising and memorial that takes place on the 16th July, the anniversary of the 1979 Church Rock Uranium Spill. The Red Water Pond Road banner was designed through a co-hosted a banner design workshop at the RWPRCA headquarters with artists Holly Keasey (UK) and Courtney Leonard ( Shinnecock Nation, NY). The aim of this workshop was to develop a design for a banner to be hand made by me as a gift of solidarity to the community for use at future commemorative, lobbying and protest events. The workshop was attended by up to twenty Red Water Pond Road community members and the design ratified by the community elders.<sup>39</sup>

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<sup>39</sup> Anna Macleod. (2018). *Water Conversations*. [online] Available at: <http://www.annamacleod.com/water-conversations#/new-mexico-banner-project/> [Accessed 24 Apr. 2018].





Figure 24: Anna Macleod & Courtney Leonard, *Walking Cochiti Dam*, , 2017

*Walking Cochiti Dam* is a project in collaboration with Santa Fe based artist Courtney Leonard that focuses on land and water rights at the Cochiti Dam, Cochiti Pueblo, New Mexico. This performative work involved working with community members of the Cochiti Pueblo to articulate the complexities of dam building on reservation lands in the USA as part of the Reclamation Act of 1902 and 1960's Flood Control Act. The controversial Cochiti Dam was built in 1975 by the US Army Corp on the most sacred mountain and burial site in Cochiti Pueblo. The lake silt bed is now contaminated with waste plutonium washed down the Rio Grande from Los Alamos 'Atomic City', where the US government research programme, 'The Manhattan Project' produced the first atomic bombs between 1942 – 45.

In recognition of water as a living body, walking in this performance brings into focus the injured landscape of human interventions into sacred natural bodies. The redemptive walk with water at Cochiti Dam is conceived as an act of contemplation on the historical and contemporary complexities of the dam site, governmental river management policies, and the physical and psychological interruption this dam has brought to the Cochiti Pueblo lands. In the performance, Leonard and Macleod use clay vessels to carry water from the recreational lake to the point of release of the dammed river as a metaphoric liberation of the water from confinement.<sup>40</sup>

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<sup>40</sup> Anna Macleod. (2018). *Water Conversations*. [online] Available at: <http://www.annamacleod.com/water-conversations#/walking-cochiti-dam/> [Accessed 24 Apr. 2018].



Figure 25: Anna Macleod & Padraig Cunningham, *A Portrait of Lough Key*, 2017

The Park Project in association with Lough Key and the Roscommon Arts Centre commissioned Anna Macleod and Boyle based artist Padraig Cunningham for the 2017-2018 iteration of the Park Projects. They worked with community members to create a portrait of Lough Key as a time-scape through the life cycle of the Mayfly (order: Ephemeroptera) from the Greek, meaning 'living a day'. The exhibition, entitled *A Portrait: Lough Key*, at Roscommon Art Centre explores the motif of the Mayfly as a portal to the complex reflective upside down worlds of this body of water, a delicate and vulnerable world of domesticity, constant flux and potential.

These aquatic insects are seen all over the world in clean freshwater habitats, their lifecycle from larval, nymph and adult growth are temperature dependant and as such, function as an indicator species for climate change and environmental health. The importance of the Mayfly to the ecosystem and economic life of the Lough cannot be underestimated. In the communities that continue to live in the vicinity of this watery world, Lough Key commands huge, almost visceral, affection as a repository of memory, of time passed in aquatic suspension, as an intense emotional mirror of celestial and temporal bodies. The constant movement of the water, its undercurrents and surface tensions create a hypnotic dream world of interconnected realms of the states of water, as vapour, as liquid, as solid.<sup>41</sup>

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<sup>41</sup> Anna Macleod. (2018). *Water Conversations*. [online] Available at: <http://www.annamacleod.com/water-conversations#/portrait-of-lough-key/> [Accessed 24 Apr. 2018].



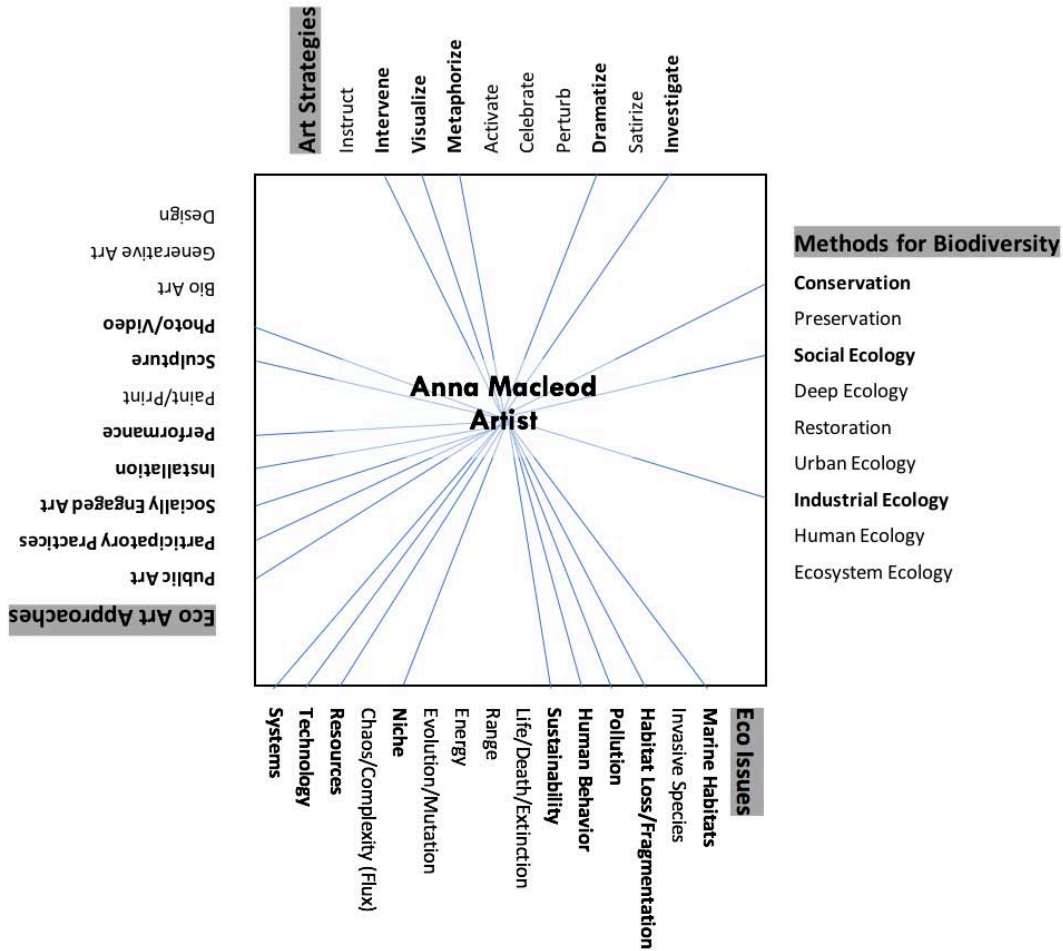


Figures 26 & 27: Anna Macleod & Padraig Cunningham, *Rain Catcher*, 2008

The project entitled *Rain Catcher* was both an intervention and exhibition located on the grounds of The Dock, in Carrick on Shannon in County Leitrim. This work proposes a re-evaluation of the importance of collecting water both as a focal point for social activity and community activism and offers for consideration the potential of alternative, non-chemical and sustainable solutions to water management. This temporary work situates the cultural institution at the centre of dialogue about possibilities for future sustainable practices and at the core of distribution of a life sustaining substance.<sup>42</sup>

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<sup>42</sup> Anna Macleod. (2018). *Water Conversations*. [online] Available at: <http://www.annamacleod.com/water-conversations#/rain-catcher/> [Accessed 24 Apr. 2018].



Anna Macleod's research based interdisciplinary practice is realized in a multiplicity of ways including Sculpture, the lens based practices of Photography and Video and Installation. She also applies the frameworks of Public Art, Participatory Practices and Socially Engaged Art to individual projects. Through these varied media, Macleod employs the following strategies in order to connect to a wider public audience: intervene, visualize, metaphorize, dramatize and investigate. It is through these strategies that the central tenets of marine habitats, habitat loss and fragmentation, pollution, human behaviour and sustainability are expressed. Her practice also investigates notions of niche, resources, technology and systems so as to elucidate the more nuanced aspects of humanity's relationship to the natural world, specially various, life-sustaining water resources. Deeply embedded in her practice are the belief systems of Conservation, Social Ecology, and Industrial Ecology. Macleod's practice acts as a catalyst, redefining public spaces as well as definitions of social and cultural activities in contemporary contexts.

# MÉADHBH O'CONNOR



22/3/2018

## Presentations at Wexford Wildfowl Reserve

Méadhbh O'Connor is an Irish visual artist who works at the conjunction of art, science and environmentalism. She works primarily through sculpture, sculptural installation and multimedia. Her projects range from large-scale spatial installations to ephemeral, biological or temporal works frequently underpinned by earth science and environmental concerns. Most recently Méadhbh was selected to exhibit at the supranational *Antarctic Pavilion* at the 57<sup>th</sup> Venice Biennale of Art, Italy, 2017. She was awarded the *Artist in Residence Award* at University College Dublin (UCD) College of Science, in 2013 & 2017.<sup>43</sup>

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<sup>43</sup> Meadhbhconnor.info. (n.d.). Meadhbh O'Connor, Irish artist, installation artist, contemporary art, art and science.. [online] Available at: <http://www.meadhbhoconnor.info/> [Accessed 23 Apr. 2018].





Figures 28 & 29: Meadhbh O'Connor, *Climate Simulator Film Phase I & II*, 2017

The following three pages are a composite overview of Méadhbh O'Connor's presentation and select projects from time as an artist in residence at university college Dublin in 2013 & 2017 as well as her ongoing body of work entitled *biosystems*.

The first film *Climate Simulator Phase I* is presented as a YouTube instructional, or offered as an open source artwork, that shares with the audience the techniques used to create the imagery in the film. The film involves creating models of the Earth's atmosphere in a small tank of water and photographing the results. The resulting images bear striking resemblances to the atmospheric phenomena seen at a macro scale on Earth, and are created with nothing more than water, salt, a colloid (milk), a plain white light and a camera.

This film demonstrates how deviations in the balance of a few simple elements causes infinitely varied results, as seen in the chaotic nature of our climate system, a reminder of the dangers of interfering with the mechanisms of our atmosphere.

The second video *Climate Simulator Phase II*, documents the artist's purpose-built, recreation of a device used by mathematicians to examine flow patterns and turbulence. This is part of an ongoing project investigating planetary atmospheric circulation leading to Phase III of her project which will be to build the device in a sphere, which she is currently carrying out the University College Dublin College of Science.<sup>44</sup>

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<sup>44</sup> Meadhbhoconnor.info. (2018). *CLIMATE SIMULATOR FILM*, 2017 | MEADHBH O'CONNOR. [online] Available at: <http://www.meadhbhoconnor.info/projects/2017-2/climate-simulator-at-antarctic-pavilion/> [Accessed 24 April 2018].



Figure 30: Meadhbh O'Connor, *Unknown Shores*, 2014

*Unknown Shores*, was a major, large-scale sculptural installation built by Méadhbh O'Connor in 2014 at the culmination of her artist's residency with the University College Dublin (UCD) College of Science. The sculpture, which took on a dual appearance of a ship and a laboratory, was built by O'Connor to signify the beginning of a journey, or rather taking part in a continuous journey.

*Unknown Shores* was initially inspired upon learning about the extraordinary voyage Dr. Emmanuel Reynaud (UCD School of Biology and Environmental Science) undertook studying the world's oceans with Tara Reflections, a non-profit organisation dedicated to high-level scientific research missions on sea. Emmanuel's story reinforced O'Connor's observation during her residency in the UCD College of Science of scientific enquiry as a collective, human pursuit. As the project progressed, its meaning extended beyond its initial inspiration to encompass the journeys, past and present, of the many students and academics who pass through the institution, each of whom making their own unique contribution to the continuity of science and the expansion of human understanding.<sup>45</sup>

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<sup>45</sup> Meadhbhoconnor.info. (2018). *UNKNOWN SHORES, 2014 | MEADHBH O'CONNOR*. [online] Available at: <http://www.meadhbhoconnor.info/projects/2017-2/climate-simulator-at-antarctic-pavilion/> [Accessed 24 April 2018].



Figures 31 & 32: Meadhbh O'Connor, *Biosystems II & III*, 2014, 2017

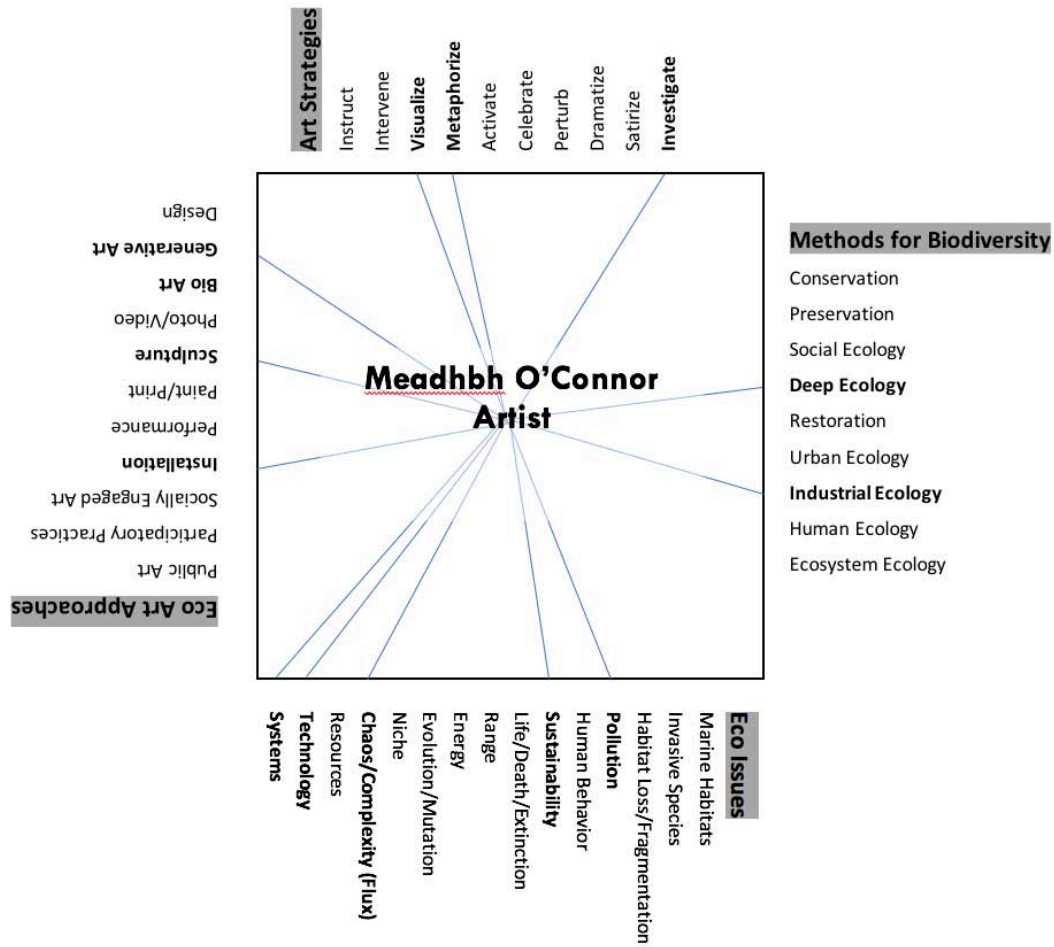
*Biosystem II & III* are sculptural installations consisting of living orbs ranging from 12 – 22" diameter. The concept for both installations was derived from James Lovelock's Gaia hypothesis that propose that living organisms interact with their inorganic surroundings on Earth to form a synergistic and self-regulating, complex system that helps to maintain and perpetuate the conditions for life on the planet.

Many of her projects alternate between carefully constructed and engineered sculptural installations, and ephemeral work that is less controllable and predictable. Many of the ephemeral projects relate to environmental themes. Past installations have incorporated living mushrooms, living plants, peat ash, coal, water and growing salt crystals. Often her projects are large-scale and involve considerable effort and technical prowess to construct.<sup>46</sup>

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<sup>46</sup> The Royal British Society of Sculptors. (n.d.). *Artists: Meadhbh O'Connor*. [online] Available at: <https://rbs.org.uk/artists/meadhbh-oconnor> [Accessed 24 Apr. 2018].





Méadhbh O'Connor's research based interdisciplinary practice is realized in a multiplicity of ways namely Installation, Sculpture, Bio Art and Generative Art. Through these varied media, O'Connor employs the following strategies in order to connect to a wider public audience: visualize, metaphorize and investigate. It is through these strategies that the central tenets of pollution, sustainability, chaos/complexity/flux, technology and systems illuminate aspects of climate change, specifically in relation to weather patterns, entropy and processes of discovery. Her practice and research are founded on the frameworks of Deep Ecology and Industrial Ecology. O'Connor bridges the enquires and methodologies of art and science, opening up reflective spaces between artist, scientists and viewer.

# KAREN DUBSKY

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22/3/2018

## Presentations at Wexford Wildfowl Reserve

Karen Dubsky is a German-Irish marine ecologist working in Trinity College Dublin, and is the coordinator and co-founder of Coastwatch Europe, an environmental NGO and a member of the European Environmental Bureau. She sits on the Environment Pillar steering group, National Biodiversity Forum and on a variety of wetland expert groups. She brings practical wetland protection and restoration experience as well as project design and implementation. She lives in Wexford.

Dubsky speaks and campaigns regularly on environmental issues, especially affecting water quality, wetlands, dunes and bathing beaches, in the Irish media. She has worked professionally in environmental education, and in research and practical projects ranging from wetland protection, over waste, oil and litter prevention and control, coastal zone management, environmental law and biodiversity policy.

Karen Dubsky's presentation introduced the organization Coastwatch Europe (CWE) as an international network of environmental groups, universities and other educational institutions. These groups collectively work with local groups and individuals around the coasts of Europe. CWE primarily protects wetlands by raising public awareness of their value and demonstrating practical ways to save them. The goal of CWE is the protection and sustainable use of coastal resources, and informed public participation in environmental planning and management. Dubsky highlighted the fact that Coastwatch Europe is driven by public participation.<sup>47</sup>

Dubsky discussed several of the research strands and projects facilitated by Coastwatch Europe including marine micro litter, the protection of native seaweed species, the importance of coastwatch surveys in relation the documentation of invasive species and the discovery of the honeycomb reefs in Waterford and Wexford.

Firstly, she discussed the basic premise of a coastwatch survey, stating that it is designed to give an overview of the state of the coast. It involves volunteers from all walks of life checking their chosen 500m stretch of coast (survey unit) once around low tide, and jotting observations down on the survey questionnaire while on the shore. This citizen science work can be augmented with water tests. Data is then collected and pooled to provide a snapshot of coast lines in areas surveyed at that time.

Dubsky then discussed marine micro litter and a recent technological development in citizen scientist survey recording. In recent years, the issue of marine micro litter has become more pervasive throughout the oceans, evidence of which is found along the coastal shores. Marine micro litter are small pieces of litter, the upper size limits measure at 5 mm diameter and if it's a thin filament, 2 cm long. Micro litter may start up as a raw plastic pellet or nurdle discharged from industrial processes or lost as cargo at sea; or it can be a micro ingredient like the micro beads in face scrubs which then enters the sea via sewage outfalls. Micro litter may also start as a larger material such as the plastic sheets, marine rope or plastic twine, which breaks down as it decomposes.

Plastic never biodegrades, but with exposure to sunlight splits into ever and ever smaller pieces, a process called photodegradation. These micro pieces of plastic become so small that they are mistaken for food and ingested by over 180 known marine species. Plastic entering the food chain in this manner then ends up being consumed by humans. In response Coastwatch Europe has designed a visible micro litter app to record what micro litter was observed, where. The app helps to identify sources such as plastic pellet spills at sea to places where micro litter is generated such as boat yards as well as locations where the sea shreds macro into micro litter. The app is designed to make people more aware of micro litter and to ultimately tackle micro litter sources.<sup>48</sup>

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<sup>47</sup> Coastwatch Europe. (n.d.). *Coastwatch Europe*. [online] Available at: <http://coastwatch.org/europe/> [Accessed 11 Apr. 2018].

<sup>48</sup> Ec.europa.eu. (n.d.). *Marine litter - GES - Environment - European Commission*. [online] Available at: [http://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/index\\_en.htm](http://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/index_en.htm) [Accessed 11 Apr. 2018].



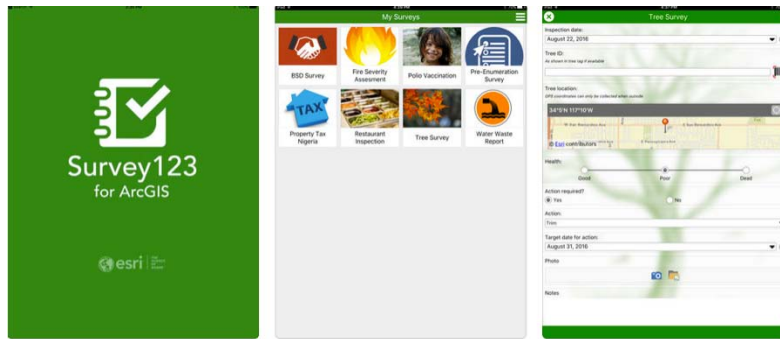


Figure 33: Survey123 app, implemented by Coastwatch Europe

Dubsky then discussed native Irish seaweed species in relation to rising seaweed harvesting and aquaculture interest. Related to this is an urgent concern of how to ensure that sufficient high value sites are protected and that harvesting is sustainable for the marine ecosystems which depend on those seaweeds. In response, CWE developed a Seaweed Citizen Science Pilot Pack to provide information to both those curious about seaweeds and to local community who are grappling with how to protect the wealth of species and habitats. The citizen scientist with the aid of the pack can help both the EPA and NI Heritage services to monitor seaweed species diversity as well as the presence or absence of indicator seaweeds as part of the water framework directive and implementation. The pack also aids in the identification of Invasive Alien Seaweeds such as the very fast growing *Sargassum* which come from warmer pacific seas and are increasingly thriving as the coastal waters around Ireland warm.<sup>49</sup>



Figure 34: Coastwatch volunteers hold a strand of invasive *Sargassum* seaweed

<sup>49</sup> Dubsky, K. (n.d.). *Seaweed Citizen Scientist*. [PDF] Coastwatch Europe. Available at: [http://coastwatch.org/europe/wp-content/uploads/2016/10/Seaweed\\_Information\\_Draft\\_2016.pdf](http://coastwatch.org/europe/wp-content/uploads/2016/10/Seaweed_Information_Draft_2016.pdf) [Accessed 11 Apr. 2018].

Finally, Dubsky showed the Think Tank an example of a honeycomb reef, a fascinating structure that has been discovered along the Irish coast as part of coastwatch surveys. Honeycomb reef is created by a small worm (*sabellaria albeolata*) that lives inside small tubes that it builds from sand and shell. When thousands of these worms work together they can form massive reefs along the coastline and form useful habitats for other marine life. Two sites, one in the Waterford estuary and one in Wexford were found to have large honeycomb reefs. The reef in Waterford measured over a kilometre long and members are now working to find out if it is the biggest of its kind in Europe. On the Wexford side, another volunteer found a healthy honeycomb reef 10- 55m wide straddling low water. He walked two 500 m survey units from Booley Bay towards Duncannon and still hadn't reached the reef end.<sup>50</sup>



Figure 35: Honeycomb reef

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<sup>50</sup> Biodiversityweek.ie. (n.d.). Coastwatch volunteers uncover massive honeycomb reef on South East coast | Biodiversity Week. [online] Available at: <http://biodiversityweek.ie/honeycomb-reefs/> [Accessed 11 Apr. 2018].

# WHAT DO ARTISTS DO? CHRIS FREMANTLE



22/3/2018

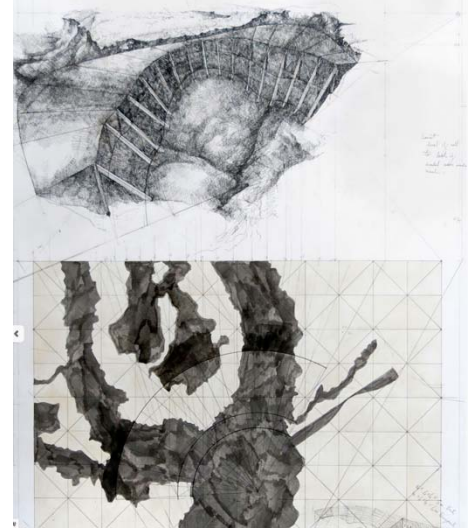
## Presentations at Wexford Wildfowl Reserve

Chris Fremantle works as a Senior Research Fellow and Lecturer at Gray's School of Art, Robert Gordon University, Aberdeen. He has worked as a Producer on public art projects, in healthcare settings, and on art and ecology projects (Greenhouse Britain: Losing Ground, Gaining Wisdom (2006-09); Land Art Generator Glasgow (2014 - ongoing). He established 'ecoartscotland' as a platform for research and practice in 2010. In addition to extensive writing on [ecoartscotland.net](http://ecoartscotland.net), he has co-authored papers and chapters in particular on the poetics of Helen Mayer Harrison and Newton Harrison and on aspects of participation, collaboration and interdisciplinarity. He is the Chair of the Art Focus Group for the Ramsar Culture Network which is part of the programme of the Ramsar Convention on Wetland.<sup>51</sup>

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<sup>51</sup> Design in Action. (n.d.). *Chris Fremantle*. [online] Available at: <http://www.designinaction.com/research/individual/chris-fremantle/> [Accessed 11 Apr. 2018].





Figures 36 & 37: Simon Read, *Falkenham Saltmarsh Tidal Management Scheme*, 2011

In his presentation entitled *Urgent Enquiry: What do Artists Do?* Chris Fremantle discussed several eco-arts practices as well as clear and concise overview of how arts could make accessible dimensions of climate change transformation processes to a wider public. The following pages are a composite overview of the presentation.

Fremantle introduced the discussion with a project developed by artist Simon Read. Read was approached by farmer David Adams with a proposal to work collaboratively to stabilise the site of Falkenham Saltmarsh on the River Deben in Suffolk. Read viewed the project as a tremendous opportunity to explore whether or not it is feasible to restore and manage saltmarsh that already exists as a parallel strategy to the creation of new intertidal habitat through the process of managed realignment. The intention for the project was that the three built 'soft engineered' structures of timber, brushwood, straw bales and coir would be integrated into the saltmarsh. If the plan works and the site is given a chance to regenerate, in the fullness of time the structure will become absorbed into the marsh and, also in the fullness of time, it will eventually decay.<sup>52</sup>

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<sup>52</sup> Simon Read. (n.d.). *Falkenham Saltmarsh Tidal Management Scheme*. [online] Available at: <http://www.simonread.info/portfolio-items/falkenham-saltmarsh-tidal-management-scheme/#!> [Accessed 11 Apr. 2018].

Table 1

**Dimensions of climate change transformations processes possibly accessible through the arts.**

Dimensions	Potential role of the arts	References
Creative imagination and serendipity	Potential to create spaces for active experimentation and imagination, fostering creative thinking. Serendipity is an integral part of emergent and resilient responses	[21]
Dealing with difficult emotions and dilemmas	Create safe spaces of disclosure and sharing	[38,49,50]
Engaging storytelling	Narratives combine cognitive with emotional resources in the depiction of specific experiences, offering increased comprehension, interest and engagement of audiences	[51]
Science communication	Enrich narrative, visual and experiential aspects of communication and extend its reach	[52,53]
Possibilities for political engagement	Hybrid experiences that bring together art, science and climate change can be fertile ground for collective action by creating sites of encounter, public scrutiny, meaning negotiation and trust	[54**]
Exploring futures imaginatively	Develop metaphors, imagery and narratives of alternative futures	[55]
Pre-figuring potential futures through direct action	Develop and perform direct intervention, experimentation and re-designing in daily situations and social systems	[56]
Engaging with values and beliefs	Unveil values and beliefs behind action and perception, connecting with personal and collective drivers of action	[36]
As part of transdisciplinary learning processes of knowledge integration	Artists as active participants of a transdisciplinary process integrating multiple learning and processes and involving multiple ways of knowing	[56,57]
Shifting awareness and openness to more-than-human worlds	The arts may provide access to different sources of cognitive, emotional and sensual experience, opening up sensibilities to extended ecologies and more-than-human worlds	[58,59*]
Coupling cultural systems with social-ecological change	Art can reveal materially and directly what is happening in social-ecological systems which may lead to the attuning of human perception, value systems and worldviews to changes in the biosphere	[6,60]
Embracing social-ecological complexity	Art embraces uncertainty and tends to trace the ways in which society and nature are intertwined. This approach may open up alternative modes of relations to nature beyond 'command-and-control'	[21,61]

Source: Author

Figure 38: Diego Galafassi, Dimensions of climate change transformation processes possibly accessible through the arts table, 2018

Fremantle then showed the above table, credited originally to Diego Galafassi et. al, presented in an article titled *Raising the temperature: the arts in a warming planet*. The table and Fremantle's elucidation of it lend a detailed understanding of the myriad of ways in which art serves to visualize, instruct, intervene, metaphorize, activate, celebrate, perturb, dramatize, satirize and investigate the complexity and nuances of climate change and its impact on social, political, cultural and even spiritual aspects of human existence.

Freemantle then briefly discussed the importance of preserving and conserving ecosystems and habitats through a lens of ecosystem services. Namely he identified supporting services as services that are necessary for the production of all other ecosystem services including soil formation, photosynthesis, water and nutrient cycling. He identified provisioning services as the products obtained from ecosystems, including food, fuel, timber and medicine. Regulating services were defined as benefits obtained from the regulation of ecosystem processes, including climate regulation, water purification, flood prevention, air quality regulation and pollination. Finally, cultural services were explained as non-material benefits that people obtain through spiritual enrichment, recreation, aesthetic experiences and tourism.<sup>53</sup>

<sup>53</sup> Fremantle, C. (2018). *Urgent Enquiry: What do Artist Do?*. [PDF] Aberdeen: The Robert Gordon University. Available at: <https://openair.rgu.ac.uk/bitstream/handle/10059/2838/FREMANTLE%202018%20Urgent%20enquiry.pdf?sequence=1&isAllowed=y> [Accessed 8 Apr. 2018].



Figure 39: Thomas A Clark & Reiach & Hall Architects, *The GROVE* project, Stobhill Hospital, 2010

As a means to illustrate his perspective of the role of art and artists within broader public spaces, as presented in Figure 35, Fremantle discussed seven additional projects and arts practices.

He firstly introduced, the Stobhill Hospital GROVE project which consisted of the installation of work by five artists across the Hospital. Thomas A. Clark, poet and artist, working closely with Reiach & Hall Architects, wrote a number of short poems which have been installed throughout the Hospital. In response to these poems four visual artists have created video installations, drawings and photographs.

Kenneth Dingwall painted a series of abstract designs in the corners in surgical and endoscopy waiting areas, and placed a sequence of shapes above eye level in the Imaging Waiting Area. Olwen Shone, Andreas Karl Schulze and Thomas A. Clark installed 14 films of natural scenes installed on monitors and projectors within the main clinic waiting area. Over 130 small abstract compositions were also juxtaposed alongside Clark's poems. Urquhart also created *Alphabet*, a series of drawings of indigenous trees which are also keys to the ancient Gaelic alphabet.<sup>54</sup>

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<sup>54</sup> Nhsggc.org.uk. (n.d.). *NHSGGC : New Stobhill Hospital*. [online] Available at: <http://www.nhsggc.org.uk/your-health/public-health/health-improvement/arts-and-health/14-health-by-design-acute-hospitals-and-community-health-care/141-hospitals/new-stobhill-hospital/> [Accessed 11 Apr. 2018].



Figure 40: Common Ground, *A Manifesto for Fields*, 2013

Fremantle next introduced the Dorset-based charity Common Ground. Common Ground has been at the forefront of community conservation and environmental education in England for the last thirty years. They state clearly that they are not a think tank or political pressure group but that they are a small, grassroots organisation that collaborate openly to reconnect people with nature and inspire communities to become responsible for their local environment. Common Ground seeks to build identity and pride in the particularity of places and support different communities in creating a quality of life which is more sensitive to nature, is more caring of the buildings and landscapes which express a continuing history, harbours memories, and perpetuates knowledge of ordinary lives and local culture.

Fremantle discussed one of Common Ground's publications entitled, *A Manifesto for Fields*, which makes 41 arguments for fairer fields with 24 pages illustrated by leading artists. It calls on farmers and land holders to farm holistically, working with nature, culture and locality. It asks that support for agriculture should only be given if it produces wholesome food, reflects and reinforces the cultural importance of fields, improves conditions for farmworkers and benefits society, the welfare of livestock, nature and the land. Fremantle highlighted several of the arguments he believed to be most impactful. They were:

1. Fields should have names not numbers.
2. Fields should be enclosed by boundaries of the local idiom.
4. Fields should embody history as well as present day uses.
5. Wildlife should be at home in fields.
6. Give them a rest – let the fields lie fallow.
10. We need more community fields where people can walk and play.
13. Seasonal festivities should be enjoyed in fields.
41. Fields should feast our imaginations.<sup>55</sup>

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<sup>55</sup> Common Ground. (2018). *Common Ground*. [online] Available at: <https://www.commonground.org.uk/> [Accessed 11 Apr. 2018]





Figure 41: Joseph Beuys, 7000 Oaks, 1982

Freemantle then briefly discussed the practice of Joseph Beuys, his idea of social sculpture and specifically his project 7,000 oaks. In 1982, for *documenta 7*, Beuys proposed a plan to plant 7000 oaks throughout the city of Kassel, each paired with a basalt stone. The 7000 stones were piled up on the lawn in front of the Museum Fridericianum with the idea that the pile would shrink every time a tree was planted. The project, seen locally as a gesture towards green urban renewal, took five years to complete and has spread to other cities around the world.<sup>56</sup>

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<sup>56</sup> Tate. (2018). '7000 Oak Trees', Joseph Beuys, 1982 | Tate. [online] Available at: <http://www.tate.org.uk/art/artworks/beuys-7000-oak-trees-ar00745> [Accessed 11 Apr. 2018].



Figure 42: Ruth Levene, Anne Marie Culhane & 40 others, *A Field of Wheat*, 2015 - 2016

Between October 2015 and September 2016, a collective made up of 42 members of the public, the food industry, farming community, artists and researchers each invested £200 in a field of wheat in Branston Booths, Lincolnshire. Throughout the growing cycle they exchanged dialogue, ideas and resources through a dedicated website and a series of events on and off the farm. Together they learned about the wheat, soil, water, history, rituals, biodiversity, the economics and trading and farming process. They were responsible for key decisions, selling the wheat and the application of nitrogen fertilizer.<sup>57</sup>

The concept was to go on a journey together to understand, question, make decisions and reflect on the complexities of modern wheat farming, unravelling its networks and impacts within a global context. Through bringing different perspectives together they reflected on the history of the designated field, its health, its economics and its culture, and so reflected on farming in general amid the challenges of climate change, resource depletion and economic growth.<sup>58</sup>

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<sup>57</sup> Ruth Levene. (n.d.). *A Field of Wheat*. [online] Available at: <http://ruthlevene.co.uk/works/a-field-of-wheat/> [Accessed 11 Apr. 2018].

<sup>58</sup> Ramsar.org. (n.d.). *A Field of Wheat by Ruth Levene* | Ramsar. [online] Available at: <https://www.ramsar.org/a-field-of-wheat-by-ruth-levene> [Accessed 11 Apr. 2018].



Figure 43: The Harrisons, *Peninsula Europe*, 2007 - Present

Fremantle then discussed the practice of EcoArt pioneers, Helen Mayer and Newton Harrison. The Harrisons have worked for almost forty years with biologists, ecologists, architects, urban planners and other artists to initiate collaborative dialogues to uncover ideas and solutions which support biodiversity and community development. The Harrison's concept of art embraces a range of disciplines. They are historians, diplomats, ecologists, investigators, emissaries and art activists. Their work involves proposing solutions and involves not only public discussion, but extensive mapping and documentation of these proposals in an art context. Past projects have focused on watershed restoration, urban renewal, agriculture and forestry issues among others.<sup>59</sup>

The image above is taken from the Force Majeure series: Peninsula Europe. The Harrisons describe the impetus for the series stating 'Like an oncoming storm front, the Force Majeure is a fluid frontier; a frontier of heat moving across the planet; a frontier of water advancing on lands; a frontier of extinctions touching all lives. It is a frontier from which we retreat, yet within which we must also adapt.'<sup>60</sup>

The United Nations projects that by 2025, nearly two-thirds of the world's population could be living under water-stressed conditions. Europe will not escape unscathed. By 2060, scientists expect a 20% decrease in river flows throughout Southern Europe due to climate changes. Combined with increased food demand, which is expected to double by 2050, Europe's ability to produce its own food could face significant challenges. Given the tremendous stress on resources, the probability of civil strife is high. This project is centred on the question What can art tell us about the possibility of adapting at scale to such conditions?

<sup>59</sup> Theharrisonstudio.net. (n.d.). *The Harrison Studio – Helen Mayer Harrison and Newton Harrison Environmental & Ecological Artists*. [online] Available at: <http://theharrisonstudio.net/> [Accessed 11 Apr. 2018].

<sup>60</sup> The Center for the Study of the Force Majeure. (2018). *OVERVIEW*. [online] Available at: <http://www.centerforforcemajeure.org/#works> [Accessed 11 Apr. 2018].



Figure 44: Goto and Collins, *The Future Forrest: The Blackwood Rannoch, Scotland*, 2015

The next project discussed was *The Future Forrest: The Blackwood Rannoch, Scotland* developed by collaborative partners Reiko Goto and Tim Collins. Goto and Collins have worked together since 2006 and often collaborate with plant physiologists, hardware and software experts, musicians and philosophers to realize diverse range of projects.<sup>61</sup>

Their most recent project, presented officially as a report, features reflections and findings from a year-long artist-led creative inquiry into the ecological and cultural meanings and values associated with the Black Wood of Rannoch in Highland Perthshire.

Working back and forth across the disciplines of art and social science, they produced a deep reading of the historical and current condition of the Black Wood while making a small contribution to ideas about cultural ecosystems services. The report emerged from local community interest in ancient trails that go back to the transhumance, and how they might be gently revealed and mapped without damaging the forest. Out of the discussion questions emerged about management of the forest, the form and function of the forest today, and what the Black Wood means and to whom is it relevant today: Is the Black Wood a ‘forest cathedral’ without a local congregation or national recognition? Can future forest ideals be ascertained solely within the domain of science?

The report explores how cultural values might bring new benefits to ancient Caledonian forests, raising questions about what it means for management and the people of Rannoch and Scotland in general.<sup>62</sup>

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<sup>61</sup> Eden3. (2018). *Goto and Collins*. [online] Available at: <http://eden3.net/project-team/> [Accessed 11 Apr. 2018].

<sup>62</sup> Fremantle, C. (n.d.). *Future Forest*. [online] [ecoartscotland](https://ecoartscotland.net/2015/03/17/future-forest/). Available at: <https://ecoartscotland.net/2015/03/17/future-forest/> [Accessed 11 Apr. 2018].





Figure 45: Aviva Rahmani, *The Blued Trees Symphony*, 2015

The last project discussed was developed by Aviva Rahmani and realized with the help of volunteers and landowners facing property condemnation by eminent domain under the legal rubric of “public good.”

*The Blued Trees Symphony* is a work of biogeographic sculpture. Individual trees were painted with vertical sine wave using a casein slurry of non-toxic Ultramarine blue and buttermilk that grows moss. Each tree represents a musical note located within a larger score that echoes the theme of connectivity to all life. Installed throughout many miles of proposed pipeline expansions, the score corresponds to a pattern that prevents the movement of heavy machinery. Importantly, each 1/3 measure of those miles has been copyrighted for protection.<sup>63</sup>

The goal of the project is to set a legal precedent for climate change policy by copyrighting an artwork that inhabits areas threatened by natural gas pipelines. Importantly, existing copyright law that states that creative expression has protection from destruction.<sup>64</sup> *The Blued Trees Symphony* seeks to replace a dysfunctional legal system that supports a fossil fuel economy with visionary art that recognizes our interdependence with other life, at an intersection between justice, music, environmental science and art.

The work constitutes a single intercontinental, sonified biogeographic sculpture whose permanence is established by the relationship between tree roots, soil and watersheds. It asks the questions:

What if we could identify a point of intervention in chaotic and complex systems that might activate the emergence of a healthy ecosystem? What if the answer to biogeographic degradation is in exercising legal innovations? What if that’s a problem for an artist to tackle? Is there a way to perceive earth systems as matrices of synaesthetic composition?

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<sup>63</sup> Ghostnets.com. (n.d.). Aviva Rahmani : Ecological Artist. [online] Available at: [http://ghostnets.com/projects/blued\\_trees\\_symphony/blued\\_trees\\_symphony.html](http://ghostnets.com/projects/blued_trees_symphony/blued_trees_symphony.html) [Accessed 11 Apr. 2018].

<sup>64</sup> Ear to the Earth. (n.d.). *The Blued Trees Symphony*. [online] Available at: <https://earthtotheearth.org/2017/06/aviva-rahmani-new/> [Accessed 11 Apr. 2018].

Freemantle concluded the presentation by proposing that eco arts practices have the potential to be 'useful' in that they can:

- Create cultural value for human environments
- Create or rediscover cultural value of ecologies
- create new ways of understanding ecological systems
- Use human systems to protect or strengthen ecological systems