

Art & Ecology in the West of Ireland: Finding, Understanding & Creating Relationships between Artistic Practice and the Burren

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Abstract

In this essay I describe how my engagement with the Burren in the west of Ireland became the foundation for my doctoral research and subsequently the development of an Art & Ecology Masters in Fine Art. I present a brief overview of the unique ecology of the Burren, including its geological, archaeological and agricultural history, so as to provide a context for both my artistic inquiry and the Burren College of Art students' immersive experience. I then discuss my collaborative practice with small birds and honeybees as a means for exploring and expanding the traditional notion of ecology through artistic practice. This essay, illustrated with original photographs, is a consideration of the importance of biodiversity, the conservation of priority species through artificial habitats, and argues that artists can propose solutions and engender change through their practices. As both an artist and an educator, I seek to help students foster a deeper understanding of the interconnectedness of and humanity's reliance upon ecological systems, and to know that as artists, they can be catalysts for environmental change.



Figure 1: Mullaghmór in the Burren National Park, June 2008

I have become tied to the Burren by chance. Registering for spring semester classes in the city center of Philadelphia in 2007, I found myself inexplicably mesmerized by a poster of a land formation that resembled a collapsed layered cake, framed by an azure blue-sky background. I learned that the formation called Mullaghmór is located in the heart of the Burren National Park in the west of Ireland (Figure 1). The poster was calling for applications for the Burren College of Art summer program Site-Specific Art Community and I applied immediately. Prior to this course, I had struggled to define the ethos of my artistic practice, my relationship to organic sculptural materials as well as my relationship to the natural environment. I felt the need for a radical shift in perspective in order to explore my practice beyond the studio. Six months later my fellow students and I were hiking up that same formation and I have lived in Ireland ever since.

The Ecology of the Burren

As a scientific discipline, the term ecology was first coined in 1866 by biologist Ernst Haeckel who defined it as “the total relations of an animal to both its organic and inorganic environment.”¹ A more contemporary definition developed by the Cary Institute of Ecosystem Studies describes ecology as the study of reciprocal, or bidirectional, relationships between organisms, the systems containing them and the physical world. This definition focuses on the *processes, interactions and the relations* of the natural world rather than on independent physical entities themselves.² Ecology may be understood, at a very basic level, as the study of relationships. It is a process of uniting multiple concepts, facts and figures in order to reach a synthesis of understanding. Or as Barry Commoner succinctly writes in *The Closing Circle*, “The first law of ecology states that everything is connected to everything else.”³ I approach my artistic practice and I encourage students to engage with the Burren with this understanding of interconnectedness; that the true ecology of this place is a result of the dynamic interaction of and balance between environmental, historical, cultural and agricultural facets.

¹ Ernst Haeckel, quoted in Rana, 2009, p. 1.

² “Defining Ecology,” Cary Institute of Ecosystem Studies Website, 2008. www.ecostudies.org/index.html.

³ Commoner, 1971, p. 16.



Figure 2: The Burren, February 2012

A karst limestone landscape, the Burren spans 259 square miles and was formed approximately 340 million years ago under a warm, shallow sea. It has been shaped over millennia by glacial, tectonic, solutational and human processes. The quintessential images you may have of the Emerald Isle do not pertain to this landscape. The predominant color here is grey to the extent that it is often referred to as a moonscape (Figure 2) and it is no coincidence that Burren, or Boíreann in Irish, translates as “the rocky place.”⁴

Although the landscape of the Burren has been famously characterized by Edmund Ludlow as a country where there is not water enough to drown a man, wood enough to hang one, nor earth enough to bury him, this place is more commonly known as the Fertile Rock. Hidden in the grikes and covering the valleys, over 70% percent of Ireland’s nine hundred native plant species are found in the Burren, which represents only 0.05% of the Irish landmass. This rich diversity sustains numerous animals including sheep, feral goats and cattle and has a strong heritage of farming. A traditional farming practice of outwintering⁵ cattle on the uplands, removes the potentially dominant grass and weed species in order to allow the unique mix of Alpine-Artic and Mediterranean flora sufficient light and resources to prosper over their flowering season. It is this practice that preserves the biodiversity of flora and importantly the twenty-four miniature orchid species including the rare bee orchid (Figure 3).

⁴ Dunford, 2002, p. 4.

⁵ Outwintering refers to the circumstance that cattle, due to the extended growing season that is caused by the retention of heat by the larger masses of rock, graze the upland in the winter. Here, rather than being concentrated in sheds in the valley, cattle are fattened by the nutrient rich grasses found in the grikes of the pavement. In contrast to farming practices found elsewhere in Europe, the cattle are then moved back down to the valley in the summer.



Figure 3: The bee orchid with flowers between 0.5 and 4 cm

In the past several years, however, there has been a dramatic decrease in the practice of outwintering cattle. This has led to the encroachment of hazel scrub, a native but now increasingly dominant species. As the hazel scrub rapidly spreads, it damages historical monuments, including ring forts and Neolithic wedge tombs that are dated back as far as 3700 BCE. It also severely impacts the biodiversity of the grasslands. Remarkably, from the study of this one plant it is possible to understand the intricate and interrelated relationships between the Burren's natural environment, history, culture and agricultural practices.

Another remarkable point is the community's active involvement in protecting and celebrating this heritage. Burrenbeo Trust, Ireland's first landscape charity, the Burren Programme, a pioneering agri-environmental program, and the Burren School of Geology are just a few examples of organizations that provide education on, preserve and support the sustainable use and management of this landscape.

The Ecology of Artistic Practice

My doctoral research in the Burren centered on the expansion and implementation of the ecological notion outside the traditional scientific investigation of ecology. I argued that the concept of ecology could be applied as a theoretical framework to analyze the function of an individual artwork. For me, addressing the *ecology* of an artwork means examining the interdependence and interrelation of materials, the creation process, the intended concept and the finished artwork. Central to my initial investigation of the concept of ecology was the synthesis of the elements; specifically the use of organic materials to create sculpture to represent one aspect of humanity's relationship to the natural world.

In order to better understand ecology, I had to learn how an ecosystem functions, how it is sustained by the biodiversity of life within it, and conversely how diversity is dependent upon the health of the ecosystem. It quickly came to light that most ecologists attribute the loss of habitats and subsequent decline in biodiversity on a global scale directly to anthropogenic activity. And on this same global scale, there are numerous scientific, technological and political solutions aimed at the prevention of further habitat and environmental degradation. A core list of such critical solutions includes:

- governmental implementations of carbon emission and clean air policies;
- water regulations aimed at conservation and preservation;
- the replacement of fossil fuel dependency with technologies that utilize renewable resources;
- the prevention of further habitat destruction and fragmentation, and;
- conservation and protection of priority habitats worldwide which simultaneously protects the biodiversity of life and endangered species within these areas.

There are personal and local solutions that minimize environmental impact and degradation. I am specifically interested in generating solutions that help to counter these effects on a local level.

John Dewey writes of the relationship between nature and experience that:

Experience is *of* as well as *in* nature. It is not experience which is experienced but nature - stones, plants, animals, diseases, health, temperature, electricity, and so on. Things interacting in certain ways are experience; they are what is experienced. Linked in certain other ways with another natural object - the human organism - they are *how* things are experienced as well.

Experience thus reaches down in to nature; it has depth. It also has breadth to an indefinitely elastic extent.⁶

In order to experience, and not simply study ecology, it became necessary for me to engage and interact with the ecosystems and the biodiversity of life within the Burren. I wanted to create art that had a beneficial impact on my surrounding environment. More than that, I wanted to create art in conjunction with my surrounding environment.

From this crystallization of my intention, I listed the aims of my enquiry to include the following: to examine current ecological concerns; to determine the issues that are within my power to change; to initiate accessible solutions that are relevant, meaningful and sustainable not only for myself but for others as well; to employ materials and processes in ways that exemplify my research; to create work that has impact within and outside of an art context. It was also critical that the process and final artwork should contribute solutions at a fundamental level of intervention. In these ways the enquiry's focus on ecology was clarified.

As a sculptor, I became interested in the idea that I could potentially build or sculpt with animal species. Many animals build. Spiders construct intricate webs; beavers build dams; terrestrial and aquatic invertebrates build their own shells and caterpillars weave cocoons. However, the potential for interaction with these species seemed limited given the indeterminate locations of their construction. Since I was interested in positively affecting environmental change, I felt that I needed to work with priority species in order to reinforce the ecosystems of the Burren. As the previously mentioned species are not keystone⁷ or priority species⁸ I sought out animals that were. Research into ecology, ecosystems and the biodiversity of the region revealed to me the importance of honeybees, Blue Tits and Great Tits. Importantly, these particular animals 'build' and do so within artificial habitats, or purpose-built habitats, in this case nesting boxes and beehives. I thus realized the potential to *collaborate* with them inside these habitats in order to create sculpture. Although the term collaboration applied to my engagements with honeybees and birds may be seen to be an unconventional use of the term, I maintain that it is the closest approximate term to describe the ecologically-based, reciprocal relationships developed as part of my artistic practice.

⁶ Dewey, 2000, p. 4.

⁷ A keystone species is disproportionately influential in relation to its abundance as its survival impacts the survival and abundance of many other species within a given ecosystem. Its removal or decline results in a significant shift in the ecology of a community and sometimes the physical structure of an environment. 'Keystone Species,' University of Illinois at Urbana-Champaign Website. <http://www.life.illinois.edu>.

⁸ According to the Joint Nature Conservation Committee of the UK government, priority species are species of high conservation value for reasons that include their inherent value to their surrounding environment, having suffered a significant population decline in the past, or that their habitats are limited to a specific range. Joint Nature Conservation Committee Website. <http://jncc.defra.gov.uk>.

Collaborations with Blue Tits and Great Tits

Birds provide an accurate environmental barometer that allows us to see clearly the pressures anthropogenic activity is putting on the world's biodiversity. Birds are major seed dispersers as well as pollinators and thus play a significant role in maintaining plant community structure and diversity. In addition, small birds are also the top species for eating insects that can destroy crop yields. Any significant decline in their population would have severe implications with regards to the biodiversity of an ecosystem. More important however is the fact that the conservation of bird species is effective and relatively inexpensive.⁹

In the early winter of 2010, I built a series twenty-five nesting boxes, each in the shape of a hexagon, for Blue Tits and Great Tits and located them throughout the Burren (Figure 4). The number of nesting boxes was determined by the time it took to connect with an Irish company who milled sustainably sourced wood, to build the boxes and to find suitable locations throughout the Burren.



Figure 4: A nesting box with offered materials, waterproofed with beeswax

⁹ Direct action in re-establishing habitats and nesting sites for birds saved sixteen bird species from extinction between 1994 and 2004 worldwide. "Critically Endangered Birds: A Global Audit" cited in "Biodiversity Conservation Works, But More is Needed." Bird Life International Online. April 8, 2008. <http://www.birdlife.org>.



Figure 5: the first hexagonally shaped nest

The shape, found throughout nature, is evocative of the interconnectedness of an ecological system. Importantly, at the end of each nesting season the nests must be cleared out of the nesting boxes in order to prevent an infestation of lice, mites, slugs and general dampness. The birds do not return to the nesting box the following season if their dwelling is in anyway less than ideal. When the nest is removed, it is formed in the shape of a hexagon as dictated by the sides of the constructed nesting box (Figure 5).



Figure 6: Hexagonally shaped nest with yellow and white lambs' wool

During the 2011 and 2012 nesting seasons I placed various fabrics outside and inside the nest boxes. The materials included raw silk, dyed wool, yarn and brightly colored feathers. The birds then built their nest on top of and amongst these materials (Figure 6).

This body of work then evolved as I knitted a series of ‘jumpers’ or sweaters for the birds’ nests in response to the question ‘What does it mean to care for my surrounding environment?’ The answer is tongue and cheek but the process, the construction of an artificial habitat and essential function, are still designed to support local bird species.

Once the jumpers are placed inside the nesting box, the blue tit family then builds its nests inside of them (Figures 7 & 8). To be clear not every nesting box that I put out was inhabited. After locating these boxes since 2009 the birds have nested in them on average two thirds of the time.





Figures 7 and 8: Nest Jumper and Nest

These sculptural collaborations are the result of voluntary participation (and/or non-participation) on the part of the Blue Tits and Great Tits. Although the birds and I share an ultimate goal, which is to build a nest inside the nesting box and the procreation of the species; the creation process involves relinquishing a large degree of control over the final outcome both on the part of the birds and humans to allow for simultaneous convergence and juxtaposition of the human and non-human methods of creation. For the birds, the nest functions as a sheltered environment to lay eggs and rear their young. When the birds abandon their nest, the nest's function has been fulfilled. For me as an artist, the abandoned nest brought into an exhibition context exists as an art object symbolic of the reciprocal relationship between the birds, myself, and the ecology of the Burren.

The Nesting Box sculptures have influenced a number of corollary projects, which allow me to further explore and expand the notion of ecology within my practice. One such project is the body of work entitled *The Ecology of the Purple Nest Jumper*. When the nest jumpers are removed from the nesting boxes, they are often inhabited by other organisms, such as mites, fleas, and eventually case-bearing moths. Embracing the disintegration of the nest as part of the ecological cycle, I have turned my focus to these less visible, less glamorous inhabitants.



Figure 9: Installation view of The Ecology of the Purple Nest Jumper



Figure 10: Microscopic Investigations of the Purple Nest Jumper

The larvae of the case-bearing moths, in this instance, began to eat the purple fibers of the jumper and moss of the nest in order to make cocoons or cases for themselves. The installation view in Figure 9 shows a monitor playing a short video documenting the lightning quick, spastic movements of the worm-like larvae as they move in and out of

their purple-tinged cases. Accompanying the video is the purple nest jumper under a bell jar. This display allows the viewer to see the movements of the larvae in their cases as they move around the inside of the glass. Two field, hand-held microscopes and eight microscopic slides invite viewers to engage with the work on another level, to look closer, and to wonder at the beauty of the small and often over-looked.

The prepared glass slides in Figure 10 show the organisms, other than the Blue Tits, which have made their habitats within the nest. They include mites, fleas and the case-bearing moths – in the larval stage and adult stage. When the moths hatch from their cases, they leave behind both the shell of their pupal skin and the case. Placing them on a slide and under the light of a microscope reveals the lacquer-like finish of the skin and the intricate embroidery of the case. The mites and fleas seem monumental and yet prehistoric in their elementary bodily construction.

At the center of each exhibition, the collaborative sculptures highlight not only the importance of priority species, but also the importance of an informed and engaged relationship with the natural environment. The public space, be it the gallery or education center, serves as a platform for discussion, investigation and wonder about the natural world and humanity's relationship to it. The work invites participation and engagement on the part of the viewer by providing microscopes, magnifying glasses, and often times sound pieces and take away nesting boxes as part of the experience of the exhibition.

Collaborations with the Irish Black Honeybee

Honeybees are vitally important to both the biodiversity of the natural environment and to humans. As the main pollinators of this planet they contribute to the production of over one third of all the food humans consume.¹⁰ Currently, Colony Collapse Disorder (or CCD) has had a devastating impact on worldwide honeybee populations particularly in the United States but also in France, Belgium, the Netherlands, Italy, Greece and Spain. Emerging in 2006, CCD is a phenomenon characterized by a rapid collapse in which the vast majority of the adult bees disappear from the hive.¹¹ Other attributes of CCD include the lack of significant numbers of dead bees found in or around the hive, plenty of honey and pollen stores, and capped brood comb. It is as if the hives have simply disappeared. The causes of colony collapse disorder are related to combination of

¹⁰ In terms of weight, 35% of the world food production comes from crops which depend on insect pollination. (National Biodiversity Data Centre. <http://www.biodiversityireland.ie>.) These crops include the majority of fruits, vegetables, oil and protein plants, nuts, spices and stimulant crops like coffee and cocoa. However, the Food and Agricultural Organization of the United Nations (FAO) recently “estimated that out of 100 crop species which provide 90% of food worldwide, 71 of these are bee-pollinated.” (National Biodiversity Data Centre Website. <http://www.biodiversityireland.ie>.)

¹¹ Ross, 2007, p. 225.

circumstances including the invasive varroa mite, diseases such as Nosema, malnutrition, pesticides and migratory beekeeping.



Figure 11: Top bar hive and comb

Although to date no cases of CCD have been reported in Ireland, there have been significant problems attributed to the varroa mite that are thought to be responsible for the spread of deformed wing disease and acute bee paralysis virus.¹² Accidentally imported, the first case of the varroa mite was identified in County Sligo in the late 1990's and has continued to spread nationwide. However, it bears repeating that a solution, which counters the effects of habitat fragmentation and destruction, could be the building of artificial or purpose built habitats such as nesting boxes, beehives, and bat boxes for priority species. Honeybees are such a species and non-commercial or

¹² Jones & Sweeney-Lynch, 2010, p. 149.

small-scale beekeeping within constructed habitats supports the biodiversity of their surrounding ecosystems.

Maintaining a beehive is completely different from maintaining the nesting boxes. Each nesting season the nesting boxes go out in the first two months of the year and, depending on their location, I do not see them again until late June. Every time I inspect the hive, however, I am in direct contact with the honeybees. As every beekeeper will tell you, the bee suit is not a barrier against every sting. The hum of the bees, the activity of their circling flight, the earthy smell of wax and honey, and the banana-candy smell of the bee venom all add up to an immediate and very visceral experience.

As a beekeeper, I have adopted a method called *Barefoot Beekeeping*,¹³ which is an alternative approach to commercial beekeeping. The term barefoot is used as a metaphor for a simple, sustainable approach to small-scale beekeeping using top bar hives (Figure 11). In a top bar hive, the bees build comb as they would in the wild, in wide tear drop formations. As there are no frames and no prefabricated wax foundation used, this process has a much greater potential for the creation of sculptural form. In order to make visible the juxtaposition of the human and non-human methods of creation, as well as the reciprocal nature of the relationship between the bees and myself, I make gentle interventions and aesthetic adjustments to encourage the bees to build irregular sculptural forms (Figure 12).



Figure 12: Small wooden dowels encourage the bees to build three honeycomb formations

¹³ Chandler, 2009, p. 8.



Figure 13: Honey Comb Sculpture with utilitarian frame

Within the hive, honeybees like to maintain what is typically called a ‘bee space,’ of approximately 1 cm between the frames of comb. Knowing the preference that bees have for this, I spaced the frames about 2 cm apart to encourage the bees to build a second layer of comb onto a single top bar. The result is the lighter colored second tear shape. Secondly, I limited the amount of empty bars within the hive. The bees searching for an area to build their honeycomb built on top of the bar resulting in the white crown-like structure on the top bar (Figure 13).

For the sculpture in Figure 14, I placed two frames together in a mirror image. The rectangular space in between the two combs represents the dimensions of a traditional honeycomb frame. Each mounted box contained a small speaker that played a sound recording of the process of beekeeping combined with the hum of the colony. The hexagonal cells surprisingly enhance the recordings, creating a doubled amplification effect.



Figure 14: *Honey Comb Sculpture* with sound recording



Figure 15: *Inside Outside Hive* in situ

The honeycomb sculptures of *The Inside Out Hive*, pictured in Figures 15 & 16, are created through the same process of gentle interventions and intermittent, aesthetic adjustments on my part, so as to encourage the bees to build irregular sculptural forms. I have then inverted each top bar holding the honeycomb and inserted it back into the hive itself. The resulting installation allows viewers a first-hand encounter with the inner structure of the honeybee hive and reveals a fraction of what is hidden in the adjacent hives. Figure 16 shows the sculpture located amongst other traditional hives. The sculpture in situ reflects the optimal role of sustainability, in that it functions best when integrated into existing systems and not isolated from them.



Figure 16: *Inside Outside Hive* in situ

As a result of the sculptural and ecological engagements, the local population of the Irish Black Honeybee has bolstered and, at a modest level, so has the biodiversity of my surrounding environment. For me, the work is a model for engaged and informed interaction with the natural world; one that is not one-sided or self-interested, but that is sustainable and mutually beneficial. It is my hope that viewers would be inspired to develop this relationship for themselves. This could take the form of habitat building, leaving an area in the yard wild, a reduction in pesticide use, or ideally, they might take up beekeeping. The sculptures created in collaboration with the honeybees and birds not

only highlight the importance of these priority species, they offer an alternative potential for expanding traditional notions of landscape representation and artistic practice.

Before attempting to represent a relationship to a particular area of the natural world, especially the Burren, artists must first seek to understand the interwoven ideologies of place. I pose questions, both to students and myself: How does an artist engage with such a visual arresting landscape? What comment or contribution can be made beyond appreciation or glorification? We begin by looking beyond the immediate visual impact to try to understand the ecology of this intriguing and complex place. Artwork created in the Burren, both my own and the students, is not necessarily a visual representation of the surrounding landscape. Rather, it is a reflection of humanity's relationship to the natural world; it is interconnected, interrelated, complex and continually evolving – much like the ecology of the Burren itself.



Figure 17: The drive up to the Burren College of Art and Newtown Castle. Here in the Burren, the Masters in Fine Art in Art and Ecology is a studio-based, interdisciplinary research program that places at its core the production of art in relation to ecological and environmental issues. This studio-based experience is founded on critical enquiry, giving students the ability to evaluate their work and practices through an informed grasp of the environmental, social, and theoretical concerns that shape the discourse on contemporary art and ecological issues.

Learn more: <https://www.burrencollege.ie>. Photo credit: Andrew Hamilton and The Clare People

References

Bird Life International Online “Biodiversity Conservation Works, But More is Needed.” April 8, 2008. Retrieved from <http://www.birdlife.org>

Burren National Park Heritage and Local Government. "Geology." April 18, 2005. Retrieved from <http://www.burrennationalpark.ie/geology.html>

Burrenbeo Trust Website. Retrieved from <http://www.burrenbeo.com>

California Biodiversity Council's Website. "Biodiversity" 2016. Retrieved from <http://biodiversity.ca.gov>

Cary Institute of Ecosystem Studies. "Defining Ecology." June 30, 2010. Retrieved from <http://www.ecostudies.org/index.html>

Chandler, P. J. (2009). *The Barefoot Beekeeper: A Simple, Sustainable Approach to Smallscale Beekeeping Using Top Bar Hives*. Lulu Enterprises.

Dewey, John (2000). *Experience and Nature*. New York: Dover Publications.

Dunford, Brendan (2002). *Farming and the Burren*. Kinvara: Teagasc.

Joint Nature Conservation Committee Website. "Adviser to Government on Nature Conservation." Retrieved from <http://jncc.defra.gov.uk>

Jones, Richard & Sweeney-Lynch, Sharon (2010). *The Collins Beekeeper's Bible: Bees, Honey, Recipes and Other Home Uses*. London: HarperCollins Publishers.

Kricher, John C. (2009). *The Balance of Nature: Ecology's Enduring Myth*. Princeton: Princeton University Press.

McDonough, William & Michael Braungart (2003). *Cradle to Cradle: Remaking the Way We Make Things*. New York, NY: Farrar, Straus and Giroux.

National Biodiversity Data Centre Website. Retrieved from <http://www.biodiversityireland.ie>

Rana, S. V. S. (2007). *Essentials of Ecology and Environmental Science*. New Delhi: Prentice Hall of India.

University of Illinois at Urbana-Champaign Website. 'Keystone Species.' Retrieved from <http://www.life.illinois.edu>