

TRANSFORMING NATURE

Margot McMahon, 310 S. Humphrey Ave, Oak Park, IL 60302 U.S.A. Email: <mcmahonmargot@gmail.com>.

See <mitpressjournals.org/toc/leon/51/3> for supplemental files associated with this issue.

Submitted: 11 September 2016

Abstract

Interpretations of human, plant and animal forms define the sculptures and drawings of Margot McMahon. Humans, plants and animals symbolizing lifeforms may be fused into organic interpretations in bronze, cement Fondu, aluminum, stone or wood. These sculptural symbols, in natural materials, emphasize the importance of interdependent and unique evolved forms of nature.

Ecological Sculptural statements include 1) *Sustaining the Land*, familial portraits that interpret and recognize three families who have, for generations, sustained Chicagoland's ecosystems, prairie, farm and Lake Michigan. 2) *Ecosystem No. 1* is a sculpture-ecosystem that encourages viewers to contribute water to a solar-powered pump and wind propelled vane that distributes the recycled water onto a sedum garden. It takes the collaboration of humans, the sun, and wind for the garden to thrive. 3) *Chicago Tree Project* with *Flock* in Jackson Park and *Checkmate*, in Lincoln Park bring attention to the hundred and thirty thousand condemned trees in Chicago's Parks (Fig.1). *Flock*, composed of a dozen song birds and one owl, is a pleasant reminder of the balance between bird populations and trees as well as the relationship between bird species. *Checkmate* is the interaction of two chess pieces, *Knight* and *Queen* carved from two twenty-foot ash trunks (Fig. 2). *Knight* ferociously checks *Queen* who indicates she has the last move.

Fig. 1. "Knight" of "Checkmate" carved in ash trunk at Belmont and Lake Shore Drive in Chicago's Lincoln Park. (© Margot McMahon. Photo: Margot McMahon.)



Chicago Tree Project, A Fifth Season

In the 1800s Julius Robert Mayer, a surgeon, recognized, "Nature has solved the problem of how to catch in flight, light streaming to the earth, and store this most elusive of all powers in rigid form."

"Flock" is carved from an Ash tree ravaged by the ash borer to represent the fragile nature of song birds with more dramatic weather (Fig. 3). The synergy of birds and trees are symbolized with the choice of material. Like the singing canary in a coal mine, birds are often an indicator of unsafe living conditions. Decades ago, the peregrine falcon and bald eagle population



Fig. 2. "Queen" is the second ash trunk of "Checkmate." (© Margot McMahon. Photo: Margot McMahon.)

decline caused us to understand that our under-regulated pesticide habits were poisoning the environment and us. Now, they are off the endangered species list, and we are healthier. Today the meadowlark and bobwhites have lost half their population due to loss of grass buffers and cow pastures on small-scale farms. Along side the loss of grassland, indicated by fewer birds, soil runoff is clogging nearby rivers and lakes. Populations of insect-eating birds like nighthawks are reduced along with bees due to insecticides. The majestic California Condor and elegant Great Blue Heron are once again gracing our children's lives. We can view these birds as an indicator of reclaimed health in our land and water. Brightly colored and carved "Flock" indicates, in a diseased elm trunk, aesthetic warnings in condemned trees.

Since 2013, Margot has overseen The Chicago Tree Project, an initiative to increase awareness of the dying population of various species of trees due to climate change in Chicago's Urban Parks. Twenty nationwide based sculptors are transforming condemned elm, ash, and locust trees in thirty miles of Chicago's Parks into artistic statements. Artist through Chicago



Fig. 3 “Flock” detail. A Dialogue between a dozen flying song birds and an owl within a diseased and condemned elm tree trunk. (© Margot McMahan. Photo: Margot McMahan.)

Sculpture International have teamed up with the Chicago Park District to select trees offering an unusual canvas for artists to create their concepts. Our urban landscape is compromised by invasive insects and disease that damage our elms and ash trees. Parkway trees recycle our carbon dioxide fumes and provide oxygen, but they are under severe strain throughout the chlorophyll process.

These sculptures in trees draw attention to the fact that our trees are live condemned and pay tribute to their decades or centuries of life. Chicago sculptors are recreating trees for a variety of reasons. Some want to draw attention to the large number of trees dying, some want to say this is urban nature, some want to create a symbol of new hope, shelter and food for animal life. Some want to remind others to reduce their carbon footprint by easing your foot off the peddle. All artists, perched in these branches are making a statement in this unique medium.

The sculpted trees are selected from Parks throughout Chicago giving a ripple effect to artist’s expressions throughout many neighborhoods. These are a few reminders of the importance of these trees in our heavily populated areas. The large canopy of leaves in adult trees absorb significant amounts of CO₂ and release oxygen as a waste product of the chlorophyll process that transforms sunlight into energy. The leafy branches offer shade and a wind break. Tree roots grow as deep as the height of the treetop and up to three times as broad as the leafy canopy. As they grow they break up the soil and absorb heavy rains. Losing mature trees compounds global climate change by allowing more carbon dioxide to be trapped in our atmosphere causing greenhouse effect or warming the earth.

These trees are needed for nesting birds and wildlife, for migrating birds to feed and rest and for a large variety of insects to feed and reproduce. The roots reach deep to break up soil and absorb heavy rains. Trees that have died are also contributors to the natural urban environment. Insects and beetle larvae thrive on the bark and wood and become nutrition for wildlife. Woodpeckers, flickers and chickadees thrive on the insects. Microclimate communities of plants grow under dead trees in wooded areas.

Fungi growth rots the wood offering another food source. 611,000 species of mold, fungi and mushrooms are known and labeled, but we have yet to find and identify 86% of plants and animals on land. Teeming inside of these condemned trees is a hidden world unto itself. For instance, thread-like fungi, mycorrhizal, has an underground symbiotic relationship with roots that supply the fungi with sugars or energy from their leaves. Ninety-five% of all plants species have roots coated with the fibrous fungi, a secondary root system. The fungi attach and grow beyond the roots, thereby drawing essential nutrients and moisture from beyond the reach of the roots to nourish the host tree. The most fascinating findings show that these fungi actually form a deep underground network that communicates between trees. Warnings of drought might make a whole grove curl its blossoms and leaves to preserve water. The oldest tree serves as a mother tree with the younger trees growing within her network. The mother tree sends carbon, nitrogen and water through her roots to the fungi. The fungi pass nutrients to the roots of seedlings down in the gloom of the forest. They need these nutrients to be able to grow to the sun. If the mother tree is cut down the entire forest can be compromised.

The Earth has the right to be healthy. Carbon dioxide is exhaled from our every breath. Compounding larger human populations with our increased carbon emissions produced by burning fossil fuels, the trees are left with a strenuous job of absorbing excess CO₂. If we point our fingers to the oil companies, they are likely to say, “We only drill and deliver the fossil fuel, go to the refineries. The refineries may say, “We only clean the oil, ask the distributor.” The gas station attendant might respond with “I only supply the consumer who burns the CO₂,” taking away the earth’s right to be healthy. It is the consumer’s job to reduce emitting more carbon into the air. We are beyond the peak amount of oil that can be affordably extracted from the earth. This is the time to use this energy source to transition to alternative sources of energy with a long-term vision.

Trees may be dying in Chicago at a quickening pace due to stress from changes in climate. Warmer temperatures, new insects, invasive species, and volatile weather are pervasive. These problems compound the difficulties trees already face in the harsh urban landscape. Emerald Ash Borer, an invasive insect, has and will cause thousands of Ash trees in Chicago’s parks and parkways to die in the next few years. Climate change stressors, including drought, heavier snows, and higher winds, make trees vulnerable. With reduced amounts of carbon dioxide transpired by leaves into oxygen, more carbon is trapped in the biosphere. Losing mature trees compounds the global warming by allowing more carbon dioxide to trap the sun’s rays in our atmosphere. Thus, the greenhouse effect is amplified.

Solutions are to replace condemned trees with drought- and pest-resistant saplings like ginkos and heritage oaks. A wider variety of trees can be planted to offer more diversity to protect against extensive losses due to single disease, insect, or climatic factor. Some mature trees can be inoculated for insect damage and disease. We need to be aware and communicative of the changes to compensate for the loss of trees. These changes are hard to predict, but we’ll need to be alert and ready for what happens next.