ENDANGERED, INVASIVE, BENEFICIAL
Essay by Stephanie Hanes Wilson

Endangered

In early 2019, a group of international scientists made headlines when they warned that nearly a million of the world's species were threatened with extinction. Around the same time, the IUCN – the International Union for the Conservation of Nature, which keeps the widely-cited "Red List" of threatened and endangered species – announced similarly dire findings. None of the species it analyzes had become more secure over the prior year, the group said. To contrary, nearly 30,000 of those 105,000 animals and plants were at risk of dying out, some imminently.

Across the environmental spectrum, scientists and policymakers reacted to these findings with alarm, but not surprise. For some time now, many have been warning that we are in the midst of the "sixth great extinction." In other words, there have been five times in the past half billion years that a large percentage of life on earth disappeared. Now, environmentalists fear, we are seeing number six.

Human behavior is to blame for this new extinction. Habitat destruction, over-hunting, the dramatic increase in greenhouse gas emissions are among the myriad ways that people have impacted the earth like no other species.

This world-wide endangerment is terrifying and overwhelming.

It can also, in Christine Neill's hands, be joltingly beautiful.

For years, Neill has found herself drawn to those places in nature where toxicity and danger merge with the radiant. More recently she has embraced the *endangered,* those species and places that face the greatest existential hazard. "Disappearing Cavendish," for instance, has as its main subject the Cavendish banana – the most commonly eaten banana in the world, long favored by big agriculture, and now threatened globally by a devastating fungal disease.

The story of the Cavendish is layered in a way characteristic of Neill's work.

In the middle of the 20th century, the Cavendish was the answer to a different, devastating fungal infection. That disease was threatening to wipe out the Gros Michel banana, the variety that had been planted across the tropics by colonizers and their corporate successors. As growers scrambled to find an alternative, they came across the Cavendish.

It was not as tasty as the Gros Michel. But the Cavendish traveled well. And most importantly it seemed be resistant to the Panama Disease, which was not only destroying fruit but the economies and livelihoods that depended on it.

And so the banana growers swapped one monoculture for another.

There is a risk, though, when large corporate farmers decide that one, and only one, variety of plant will be grown. Not only does it push out other species by human selection and habitat consumption, the lack of genetic diversity makes it shockingly susceptible to disease, climate changes and newly introduced pests. A monoculture is inherently endangered. And so, in some ways, it should not be surprising that the Panama Disease itself adapted and now threatens the

Cavendish. In other words, nearly all of the banana plants in the world are endangered.

In Neill's "Disappearing Cavendish," the forms are pleasing; the plants themselves gracefully fade into transparency. The work is light, even airy.

"A friend of mine saw that painting," Neill recalls. "She said, 'it's such a devastating story, but the painting has bright colors, is calm.' And I feel, well, that's the way things are happening. It's slow, it's not like the fires in California. It's happening around us and we're going on with our lives."

Neill recalls walking the beach on the remote, eastern coast of Puerto Rico, and picking up pieces of white coral. They were gorgeous, she remembers; a bleached ivory color that she didn't recognize. She took them home and put them in a jar.

Later, she learned, the coral was white because it had become stressed by warming ocean waters and had expelled the zooxanthellae algae that normally lives in its tissues. This algae provides the coral with its color and most of its food; without it, the coral staves. The white coral, it turned out, was endangered coral; a sign of endangered oceans and an endangered world.

Neill's piece, "White Death," shows all of this – coral fading gradually to white, the algae on a separate layer, dancing away.

Invasive

In the late 1970s, when Christine Neill first moved into her leafy Baltimore City neighborhood, the streets were lined with elm trees. Soon, though, they began to die, victims to what has become known as the "Dutch elm disease" – a devastating fungus discovered by Dutch scientists and spread widely by bark beetles.

The fungus, which by 1989 had killed an estimated three quarters of North America's 77 million elm trees, is thought to have originated in Asia. Scientists believe it jumped across national borders with international commerce – death brought by a tiny, infected bark beetle nearly invisible in a shipping container; or perhaps by a compromised log, buried beneath a cargo of timber. It was one of the first times an invasive species sparked a widespread community response.

Neill and her neighbors were part of this effort and fought the fungus. They looked for signs of infection in their trees, they pruned branches faithfully, they made sure nobody brought in out-of-state wood to burn.

But still, the trees died. There are no elms left in the city, just as there are few clams left in the Cape Cod sand, which Neill remembers digging with her father so he could make chowder. Later, the Emerald ash borer would attack the trees outside of Neill's house in New Hampshire; and the tall, purply-pink loosetrife would take over the New England wetlands she loves, beautiful but *invasive.*

"These things are happening in my lifetime," Neill says.

It is little surprise that Neill has been attracted to this shifting equilibrium. She sees, and then creates, a harrowing beauty from the interplay between the

invasive and the existing, this life-or-death dance taking place while we go about our daily lives.

Sometimes, as in the case of the elms, the march of the invasive is brutally apparent. It is in the spider-like markings on the bark of dying trees; the felled trunks and denuded branches.

Other times it is like lace.

In “Holey Leaves, Violet,” Neill finds the sculptural beauty in a plant partially devoured by slugs and invasive insects. A longtime gardener – and the daughter and granddaughter of devoted gardeners – Neill says she still is struck by the beauty of the holes in summer leaves; the shapes they form, the hidden lives and hungers they represent.

Indeed, as her work suggests, there is complexity, even intrigue, underneath those labels of ”native“ and ”invasive.” Some of our most beautiful landscapes feature plants that lack the correct genealogy. The Baltimore of my childhood is shaded by the doomed Elms and sweetened by the profligate honeysuckle. The latter is an invasive from Japan, but as native as my memories.

Across the world, the invasive acclimates, fits into new climates that we have created, evolves with new homelands, changes them and becomes changed by them. The native, too, evolves. Rarely can a creature – or a society, a family, a country – be the same as it was generations ago, nostalgia notwithstanding. And, one might argue, it should not try.

Still, one only has to look at the scarred Elms to know the tragedy of mismanaged ecosystems, or the dreadful rapidity with which the balance of nature topples with human interference.

Often, we do not even notice the unravelling is taking place. As Neill shows in “Cloud of Witnesses,” it sometimes takes the broad green leaves of the *gunnera* plant to notice the overwhelming number of invasive creatures in the muck beneath and around us.

Then again, varieties of the *gunnera* itself are labeled invasive. In Ireland and Scotland, everyone from environmentalists to bio security experts warn against the big-leafed plant, which is often called the “giant rhubarb.” At home along river banks and in shady gardens throughout the US, it is native to Chile, invasive in Europe.

Everywhere, Neill shows us, it is a witness – and a model, perhaps, for artists throughout this world.

Beneficial

One day not so long ago, Christine Neill looked across one of the sloughs of Lake Okeechobee, those low-lying waterways trudging toward the Everglades, and saw waterlilies. There were thousands of them, dark leaves bobbing on murky waters. Fingers of lemon-yellow petals reached skyward; a sweet fragrance escaped from the wetland stench of biomass and decay. The flowers were stunning; the sort of botanical form that has inspired painters for generations.

But Neill saw something else that day. Those lilies, their stout stems reaching downward into an underwater forest, were part of a complex ecosystem that not only controlled the health of Florida's wetlands but also captured significant quantities of carbon dioxide. In other words, lilies were not just pretty. Nor were they simply beautiful. They were *beneficial.*

Neill walked farther along the boardwalk. She began to photograph and sketch.

Increasingly, scientists are understanding the importance of "blue carbon," the label for that carbon stored in marine and coastal ecosystems. These areas, it turns out, hold a disproportionate amount of the heat-trapping element; it is stored in the muck and sediment and living plant matter of coastal and marsh regions worldwide.

When these environments are healthy, blue carbon stays out of the atmosphere. But when they degrade, the blue carbon escapes as a gas and the earth gets warmer. Lilies in Lake Okeechobee are native, a sign of the waterway's health and its contribution to climate stabilization.

It was all of this, Neill says, that attracted her to the plants and inspired her work, Blue Carbon.

"As often happens, I have compelling experiences when we're outside and looking at the actual nature," she says. "And something that I find intriguing. Then it is combined with an idea that I've previously read about, or maybe I have the images and then read about it afterwards. The image comes together with the concept. In this case it was the phenomenon of blue carbon."

But if lilies, and blue carbon, are beneficial, they also exist on a knife's edge. Their role is layered, like Neill's work, with complexity and intrigue. Like many of her "beneficial" subjects – the milkweed pod that devastates gardens and nourishes butterflies; the thistle that plagues farmers and sustains honeybees; the insects that feast on her vegetable garden and support the food chain – blue carbon itself is not clear-cut. It holds both the possibility and precariousness of environmental balance.

It is this dangerousness, this imagining of the dreadful consequences should these stores of invisible elements be released into our atmosphere, that adds beauty, even honor, to the murky vegetation that Neill revels underneath the recognizable orbs of waterlilies. For it is not only the lilies that are beneficial, but the mess beneath them; the murky muck so often excluded from our artistic images.

Unlike prior generations of artists who looked for some imagined purity in nature, inherent in Neill's work is the recognition that "beneficial" does not mean the same as "good," nor is it the opposite of "bad." That, Neill knows, is not how nature works. She avoids the romanticism that often creeps into botanical portrayals and instead creates something more affecting and emotional. She captures the connections, the intrigues, the nail-biting balancing act in which our natural world exists; her grasp of ecological systems and complexity turns her work into powerful environmental commentary.

Lake Okeechobee and its lilies have been the focus of significant debate recently. Scientists, politicians and environmental activists argue over the correct

depth of the 730-square-mile lake. Some worry that the rising water levels, deeply polluted by phosphorus, could devastate the littoral zones where the waterlilies thrive and where blue carbon is primarily stored. Others argue against draining the lake, which they worry will create water shortages throughout southern Florida and contribute to algae contamination throughout the state, including the infamous “Red Tide” that has devastated beaches there.

Beneficial is harrowing, beautifully, complicated.