



Using Science and Celtic Wisdom to Save Trees (and Souls)

Beresford-Kroeger, a botanist and author, has created a forest with tree species handpicked for their ability to withstand a warming planet with tree species handpicked for their ability to withstand a warming planet.

Diana Beresford-Kroeger at her home in Ontario. “If you build back the forests, you oxygenate the atmosphere more, and it buys us time,” she said. Nasuna Stuart-Ulin for The New York Times

By Cara Buckley

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MERRICKVILLE, Ontario — There aren’t many scientists raised in the ways of druids by Celtic medicine women, but there is at least one. She lives in the woods of Canada, in a forest she helped grow. From there, wielding just a pencil, she has been working to save some of the oldest life-forms on Earth by bewitching its humans.

At a hale 77, Diana Beresford-Kroeger is a medical biochemist, botanist, organic chemist, poet, author and developer of artificial blood. But her main focus for decades now has been to telegraph to the world, in prose that is scientifically exacting yet startlingly affecting, the wondrous capabilities of trees.

Dr. Beresford-Kroeger’s goal is to combat the [climate crisis](#) by fighting for what’s left of the great forests (she says the vast [boreal wilderness](#) that stretches across the Northern Hemisphere is as vital as the Amazon) and rebuilding what’s already come down. Trees store carbon dioxide and oxygenate the air, making them “the best and only thing we have right now to fight climate change and do it fast,” she said.

Her admirers, who included the late [biodiversity pioneer E.O. Wilson](#), say what sets Dr. Beresford-Kroeger apart is the breadth of her knowledge. She can talk about the medicinal value of trees in one breath and their connection to human souls in the next. She [moved Jane Fonda](#) to tears. She inspired Richard Powers to [base a central character](#) of his Pulitzer-prize winning novel, “The Overstory,” in part on her: He has called her a “maverick” and her work “the best kind of animism.”

Dr. Beresford-Kroeger has also cultivated an arboreal Noah’s Ark of rare and hardy specimens that can best withstand a warming planet. The native trees she planted on her property in this rural village sequester more carbon and better resist drought, storms and temperature swings, she said, and also produce high quality, protein-rich nuts. If industrial logging continues to eat away at forests worldwide, soil fertility will plummet, and Dr. Beresford-Kroeger, an Irishwoman, is haunted by the prospect of famine.

She is an independent researcher, unaffiliated with any institution, funded by her writings and the sale of her rare plants; she wanted freedom to study and spread her ideas without any strictures.

“Often these kinds of brilliant pioneers are outliers who don’t play by the rules,” said Ben Rawlence, an English writer who found himself “sitting at her feet doing a master’s in the boreal forest packed into three days” while researching his new book “The Treeline: The Last Forest and the Future of Life on Earth”.

“People like her are very important,” he said. “They can integrate the depth of different disciplines into a total picture.”

Dr. Beresford-Kroeger didn’t set out to be an outlier. Born in England and raised in Ireland, she studied botany and biochemistry at the University College Cork before coming to America in 1966 to research organic and radionuclear chemistry at the University of Connecticut. Three years later, she moved to Canada to study plant metabolism at Carleton University, and then do cardiovascular research at the University of Ottawa, where she began working as a research scientist in 1972.

But she faced sexism, harassment and, in that part of Loyalist Canada, anti-Irish sentiment, she said. She left academia in 1982, as much repelled by the toxicity as she was drawn to a deeper calling, rooted in a childhood that was both Dickensian and folkloric.

Dr. Beresford-Kroeger was orphaned at 12. Her father, an English aristocrat, died under mysterious circumstances, while her mother, who traced her lineage to ancient Irish

kings, perished in a car crash. Dr. Beresford-Kroeger was taken in by a kindly if neglectful uncle in Cork, and spent her summers with Gaelic-speaking relatives in the countryside.



A childhood portrait of Dr. Beresford-Kroeger, painted by her father, in her home. Nasuna Stuart-Ulin for The New York Times

There, under the tutelage of a maternal grandaunt, she was taught ancient Irish ways of life known as the Brehon laws. She learned that in Druidic thinking, trees were viewed as sentient beings that connected the Earth to the heavens. She was also versed in the medicinal properties of local flora: Wildflowers that warded off nervousness and mental ailments, jelly from boiled seaweed that could treat tuberculosis, dew from shamrocks that Celtic women used for anti-aging.

As a university student a few years later, Dr. Beresford-Kroeger put those teachings to the scientific test and discovered with a start that they were true. The wildflowers were St. John's Wort, which indeed had antidepressant capacities. The seaweed jelly had strong antibiotic properties. Shamrocks contained flavonoids that increased blood flow. This foundation of ancient Celtic teachings, classical botany and medical biochemistry set the course for Dr. Beresford-Kroeger's life. The more she studied, the more she discovered

that the symbiosis between plants and humans extended far beyond the life-giving oxygen they produced.

“Every unseen or unlikely connection between the natural world and human survival has assured me that we have very little grasp of all that we depend on for our lives,” she wrote in her most recent book, [“To Speak for the Trees.”](#) “When we cut down a forest, we only understand a small portion of what we’re choosing to destroy.”

Deforestation, she continued, was a suicidal, even homicidal, act.

“We’ve taken down too much forest, that’s our big mistake,” Dr. Beresford-Kroeger said during a recent chat in her hand-built home, as her husband, Christian Kroeger, pattered in the kitchen, making lunch. “But if you build back the forests, you oxygenate the atmosphere more, and it buys us time.”

The Beresford-Kroegers live south of Ottawa, down a long country lane on a 160-acre parcel of land they bought decades ago. Their house is filled with well-thumbed books, fingers of sunlight, thriving plants and Boots, their rescue cat. Dr. Beresford-Kroeger writes all of her papers and books by hand, and doesn’t have a smartphone or computer or any social media accounts. When she needs to Zoom, she pops down to the local library and uses a public desktop.

Outside the house, her treasured trees grow, all climate-change resistant to varying degrees: the kingnut, a blue-needled fir and a rare variant of the bur oak. She began creating her arboretum after learning that many key tree species prized by First Nations people for medicines, salves, oils and food had been razed by colonizers centuries ago.

“These trees have fed the continent before in the past,” she said. “I want them available there for people in the future.”

Over the years, she painstakingly tracked down, across the continent and beyond, rare seeds and saplings native to Canada. “I thought, ‘Well I’m going to repatriate these trees,’” Dr. Beresford-Kroeger said. “I am going to bring them back to here, where I know they’re safe.”

She also knew if the “repatriated” plants and trees were shared far and wide, they’d no longer be lost. She and Christian began giving away native seeds and saplings to pretty much anyone who asked. Among the tens of thousands of recipients were local Hell’s Angels, who roared up to their doorstep to collect black walnut seedlings, wanting to

grow the valuable trees on their property nearby. “I put them in the back of their motorbikes, their Harley-Davidsons, she said. “I thought I’d die of a heart attack. But they were very nice to me.”



Dr. Beresford-Kroeger’s husband, Christian Kroeger, read aloud from “Under the Cedars and the Stars,” by the Irish author and Catholic priest Patrick Augustine Sheehan. Nasuna Stuart-Ulin for The New York Times

In her forties, Dr. Beresford-Kroeger turned to writing, though it would take a decade to find a publisher for her first manuscript. She has since published eight books, at least a couple of them Canadian best sellers. One was about holistic gardening, another about living a pared-down life. But her main focus was the importance of trees.

She wrote about the irreplaceability of the boreal forest, which principally spans eight countries, and “oxygenates the atmosphere under the toughest conditions imaginable for any plant.” She introduced her “bioplan”: If everyone on earth planted six native trees over six years, she says it could help to mitigate climate change. She wrote about how a trip to the forest can bolster immune systems, ward off viral infections and disease, even cancer, and drive down blood pressure.

There have been skeptics. One publisher admonished her for being a scientist who described landscapes as sacred, she said. The head of a foundation, while introducing her

following a screening of "[Call of the Forest](#)," a documentary about her life, let slip that he didn't believe a word of what she said.

Bill Libby, an emeritus professor of forest genetics at the University of California, Berkeley, said he initially had reservations when Dr. Beresford-Kroeger offered a biological explanation for why he felt so good after walking through redwood groves. She attributed his sense of well-being to fine particles, or aerosols, given off by the trees.

"She said the aerosoles go up my nose and that's what makes me feel good," Dr. Libby said.

Outside research has supported some of those claims. [Studies led by Dr. Qi Ling](#), a physician who coedited a book for which Dr. Beresford-Kroeger was a contributor, found visits to forests, or forest bathing, lessened stress and activated cancer-fighting cells. A [2021 study from Italy](#) suggested that lower rates of Covid-19 deaths in forested areas of the country were linked in part to immunity-boosting aerosols from the region's trees and plants.

"I was laughed at until fairly recently," Dr. Beresford-Kroeger said, her Irish accent still strong. "People all of a sudden seem to be waking up."

Nowadays, Dr. Beresford-Kroeger is in great demand, a shift she attributes to mounting fears about the environment and a hunger for solutions.

In 2019, Carleton University awarded her a doctorate in biology along with an honorary doctor of law degree for her climate work. The next year, she was a guest on one of Jane Fonda's televised climate action teach-ins. She regularly delivers virtual talks to universities and keynote addresses to organizations ("I had goose bumps talking to her," said Susan Leopold, the moderator of her talk at the 2021 International Herb Symposium). She is helping to plan medicinal healing gardens in Toronto and outside Ottawa as she finishes a new book about how people are spiritually connected to nature. "The publishers can like it or bloody lump it," she said.

During a tour of her forest and gardens, Dr. Beresford-Kroeger spoke with wonder about how ancient Celtic cures were almost identical to those of Indigenous peoples, and waxed poetic about the energy transfer from photons of sunlight to plants' electrons during photosynthesis.

Then she advised a reporter to lean against a tree before writing. People, she said, should look at forests as "the sacred center of being."

“Without trees, we could not survive,” she said. “The trees laid the path for the human soul.”



Dr. Beresford-Kroeger in a grove of dwarf bird's nest spruce on her property. Nasuna Stuart-Ulin for The New York Times