

Sustainable crops for the future: Post Carbon Institute looks for alternatives in a world starved of fossil fuels; [Final Edition] *Larry Pynn. The Vancouver Sun.* Vancouver, B.C.: Sep 30, 2006. pg. C.7

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Canola grown without pesticides and hand-harvested by scythe for its oil and as a clean source of biofuel. Scattered elsewhere nearby, patches of flax, Jerusalem artichoke, kenaf, miscanthus, soybean, Sudan grass and switchgrass, crops that may one day soon offer green sustainable solutions to the world's looming energy crisis.

"Oil and gas have allowed us to ignore the laws of nature," warns British-born Julian Darley, founder and director of the Vancouver-based Post Carbon Institute. "Not much longer."

Far from the halls of academia, a strange organic classroom thrives in a farm field enshrouded by forest on the fertile south side of the University of British Columbia.

One hectare of the 24-hectare UBC Farm has been granted to the non-profit Post Carbon Institute to experiment with the local growing of crops to help sustain a future world starved of fossil fuels.

"We're right out on the edge," Darley's says of the initiative, known as a Local Energy Farm. "As a human race we have to do something soon or we'll be scraping around eating grass."

The UBC Farm agreed to give space to the institute because it fits with the farm's philosophy of sustainable agriculture, avoiding biotechnology-based crops and pesticides, says farm manager Mark Bomford, an agro-ecology graduate from UBC who grew up in the agricultural Peace River region.

The Local Energy Farm also allows students the opportunity for hands-on experience and provides a source of solid data on crop growth specific to UBC's soil and climate conditions, he added.

The hope is to even convert the crops grown on the farm into biofuel and put it back into the farm machinery, making the local energy circle complete.

The UBC Farm grows 250 different crops, Bomford continues, operating on the belief that organic or low-input farming is more resilient to dramatic weather influences, including those induced by climate change, than large-scale industrial farming that produces vast fields of similar crops.

When people say that organics are not grown intensively enough to feed the world, Bomford argues that those people are not factoring in all the energy costs associated with industrial farming, including the production of pesticides to maintain the crops.

"There is a lot of oversimplification," he said. "You have to look at the big picture."

Based in Vancouver but largely funded by American individuals and foundations, the institute and its various initiatives operate on a budget of \$750,000 a year and a far-flung staff of 10.

Darley founded the institute in 2003 as a way to help various people around the world find their way through the looming energy crisis. His Canadian wife, Celine Rich, is executive director.

"It's not sustainable," he says of modern society and its reliance on industrial food production. "We have to start asking questions: where does it all come from?"

Darley, who holds a master's degree in social research and environment at the University of Surrey, Eng., says he works at the environmental confluence -- finding better ways for mankind to survive, ones that do not involve destroying nature, and the planet itself.

Success has been varied in the project's first year at UBC. Some crops survived but only through intensive weeding by hand. "It was a delicate operation," Darley says with a smile. "The next 100 years will definitely be about hand weeding."

Bomford, looking over a patch of switchgrass that didn't make it, says the project is still in its infancy and that he expects improvements next year, with better management techniques.

Darley is also experimenting at UBC Farm with a new form of wind turbine. Made from wood and fibreglass, it features a helix shape that captures wind blowing from any angle, especially helpful in a cluttered urban landscape. "Even with a relatively small wind, it will always turn. It doesn't care which direction the wind is coming from."

The contraption was built by Tony Duggleby, a member of the institute's board of directors and the head of Katabatic Power Corp. of San Francisco, formerly of Sea Breeze Power Corp. of B.C.

The resins in the fibreglass are made possible by the oil and gas industry, something that Darley reluctantly accepts, for now, as he lays the groundwork for the transition to a post-carbon world.

Not far away from the crops sits a 1.0-by-1.3 metre solar panel - - one of three, among the first of their type -- donated by Day 4 Energy Inc. of Burnaby. The state-of-the-art, copper-based panels are the brainchild of John McDonald, one-half of McDonald-Detweiler fame, designed to concentrate six times as much solar energy as conventional silver-based solar panels.

Bomford adds that the slant of the panels will be changed four times a year, once for every season, to best capture the angle of the sun.

The farm, operated by UBC's faculty of land and food systems, also maintains its own weather station atop a greenhouse, providing site-specific information on factors such as wind speed and direction, precipitation, temperature and humidity, updated regularly on its website.

All interesting stuff, but one still wonders how the farm manages to compete with those forces in the university who would rather see the fields plowed and paved to make way for profitable housing.

The university plans to make that decision in 2012, says Bomford, who argues it is invaluable having such a farm on campus where it is immediately accessible to staff and students. He further argues there is more space devoted to playing fields and golf at UBC than agriculture.

The public seems to have embraced the farm, with attendance increasing to 15,000 a year, up from virtually zero in 1999 as the farm reaches out to the community. "People are more interested in food, energy, and climate," Bomford insists. "It's all tying into a sea change."

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