

# Discovery

## SUSTAINABILITY

### WHERE THE GRASS IS GREENER

Inside Carole-Anne and Tom Elliott's dream-home-to-be, garbage bags full of clothes litter the floor and mattresses lean against walls. Six-year-old Benjamin bangs a nail into a scrap of wood, while his sister Danielle, nine, whips by on her bicycle as she completes another lap around the octagon-shaped house in Craik, Sask.

Tom shouts over the noise as he gives the town's mayor, Richard Rogers, a tour of the straw-bale home he has been building for the past two years. But this isn't the only unconventional structure on the block.

The Elliotts' neighbour built an underground house out of two railroad shipping containers, and down the road, a private school built using styrofoam and concrete is set to open this summer. Students, primarily international youth, will be fed locally grown food; eventually, the plan goes, they'll grow vegetables in an adjacent greenhouse.

These efforts are all part of the Craik Sustainable Living Project, an attempt to revitalize the community.

In 2001, drought, low grain prices and a livestock-industry crisis were driving away residents. The town of 450 people

was desperate and sought guidance from Lynn Oliphant, the co-founder of Saskatchewan's Prairie Institute for Human Ecology. He proposed an eco-village: a small community focused around economically and ecologically sustainable lifestyles and alternatives to centralized electrical, water and sewage systems.

Craik's first step was the creation of a demonstration building, its Eco-Centre, to showcase alternative energy and construction. The 550-square-metre building was completed in 2004 using 1,500 straw bales and timber from two old grain elevators. The centre's concrete floor absorbs sunlight from south-facing windows and heats the building, and the washrooms feature composting toilets. The Eco-Centre contains the Solar Garden Restaurant, which uses filtered rainwater and as much local food as

possible and bakes breads and pastries in an oven made using 3,000 bricks from a demolished school. Outside, there is a golf course, where grass clippings and organic restaurant waste are used as fertilizer.

Although the Eco-Centre is just off busy Highway 11, the main route between Saskatoon and Regina, the restaurant is barely viable and recently lost its manager (a challenge attributed to competition from fast-food restaurants in the nearby town of Davidson). But the Eco-Centre's three conference rooms are often booked by provincial organizations that want to meet roughly midway between Saskatchewan's two main cities.

The Eco-Centre will remain open,

**Craik's Eco-Centre (BOTTOM) and golf course (TOP) are part of its green identity.**



# Discovery

town officials insist, because it is central to Craik's green identity — a strategy that has attracted more than 30 new residents since 2001. "Things are getting way bigger than I ever imagined," says Hilton Spencer, the town's reeve. "I had originally thought that if we could get three or four new people, I would be happy."

The Elliots came to town from Cold Lake, Alta., in 2008. Tom, who fixes air traffic controller equipment for a living, wanted to move into their straw-bale home within a year. For now, they're renting a second home and plan to make the move this summer, even though it will still be a construction site and the interior could take two more years to finish.

Work is proceeding slowly because the Elliots couldn't get a mortgage for their eco-project. Banks aren't confident about the resale value of straw-bale homes, and since the Elliots bought their land for a dollar — one of 14 lots sold for \$1 to entice new residents — they have no equity. Still, says Tom, "As long as it's liveable, we'll be living in it."

Monica and Brent Kreuger face a similar struggle. The couple, who run the Praxis School of Entrepreneurship in Saskatoon, had to remortgage their home to fund construction of their private school in Craik, which aims to develop critical thinking and leadership skills. They're expecting 60 students for a camp this summer and hope to draw dozens of students during the regular academic year.

Other businesses coming to town include Titan Clean Energy Projects Corporation, which has set up a small biomass processing facility to develop renewable-energy products, such as clean-burning heating briquettes, and Atlantis Research Labs Inc., which has entered a lease-to-own land deal with Craik and plans to build a solar farm and research facility on 12 hectares this summer.

These gains have erased fears that the town will lose its hospital and public school. "Only a few years ago, Craik was grasping at straws," says Oliphant. "It's amazing how fast it has made progress."

Kelly-Anne Riess

## CONSERVATION

### CAPE BRETON'S LICHEN LIFELINE

What botanist Tom Neily calls the "super-tree" looks rather ordinary. Tucked in a forested fen kept moist by sphagnum moss and the nearby Cape Breton coast, the balsam fir (BELOW) is thin and old. Yet while trees containing boreal felt lichen in Nova Scotia typically host only one or two individual lichens, this fir, recently discovered near the community of St. Esprit by Neily (RIGHT) of the Mersey Tobetic Research Institute, hosts a whopping 51. More important, the super-tree constitutes a third of mainland Canada's population of this globally endangered lichen.

Nicknamed "panda bear" lichen, this leafy pairing of fungi and algae, so crucial for absorbing nutrients from rainwater and air that would otherwise be unavailable to forests, is vulnerable to air pollution and logging. The coastal species can be found only in a few places: two sites in Norway, Alaska, Newfoundland (by far the healthiest population but now in decline) and Nova Scotia, a population that plunged by 90 percent between 1980 and 2000 and remains in decline. Nova Scotia Environment ecologist Robert Cameron calls the 13 lichen-bearing trees found in Cape Breton, including the super-tree, a "life ring."

Photosynthesizing algae and a finicky need for moist, coastal microclimates that feature north-facing slopes and mature stands of balsam fir make boreal felt lichen one of the most sensitive to ecological disturbance and thus, says Cameron, an "early warning signal" for



environmental problems. While the distance from industrial activity could explain why Cape Breton is healthier than elsewhere in the province, experts also point to the lack of disturbance in this tucked-away forest. New lichen sites have been discovered in Nova Scotia but, says Neily, they are lost as quickly as they are found. "In my opinion, even cutting the lichen can affect it by changing the microclimate, drying out the

Because the lichen has been protected on provincial and private land, the Department of Natural Resources believes in the recovery of the lichen through Elderkin says its recovery relies on voluntary stewardship by private landowners and buffers from companies on provincial land. NewPage, the largest paper mill in the world, is leasing the roughly 92-square-hectare parcel of provincial land on which all the known Cape Breton super-trees are located, has left 100-metre buffers around the trees and voluntarily increased the buffer along a stream near the

Frances Anderson, a researcher at the Nova Scotia Museum, thinks more protection should be given to these rare lichens. "There is far too much uncertainty about habitat requirements," says Elderkin, "to say bounding off the area to protect lichens with any certainty."

Crouching near the super-trees, Neily says its exuberance of boreal felt lichen — a member of one of the most diverse of leafy lichens, at more than 10,000 species — can't be explained. "It has survived for hundreds of years," he says, "yet it's now being wiped out in just decades" — a sign of its evolutionary extinction.