SOLAR HONEY PRODUCED RESCUING ECOLOGIC PRACTICES AND ADAPTING POLLINATOR FRIENDLY HABITATS IN UNITED STATES

by Kim Assaël

The family-owned enterprise Bolton Bees based in the State of Minnesota (United States), is enjoying commercial and media success for what they call *Solar Honey*. In the space between solar panels, near or even under, they plant suitable native flowers and grasses for a local production of honey addressing the problems of pollinators decline and climate change

The Bolton Bees enterprise has been created in 2014 in St. Paul, outside Minneapolis, by Travis and Chiara Bolton. They have been practicing beekeeping since 2008 in different contexts and their business has been created with the goal to promote local honeys, through local bees and specific pollinator-friendly habitats. Bees loose power searching for biodiversity far away and the Bolton's advocate more local habitat, and more local bee stock to breed their colonies in one place with stable hives.

With this vision, they have been pioneers in pursuing their activities to promote and increase local honey production by taking advantage of the Pollinator Friendly Solar Act approved by the State of Minnesota in 2016. The Law establishes native vegetation and habitat management practices for solar developers and local governments. It aims to recreate the ideal ecological conditions to support populations of bees in solar sites, through native perennial vegetation and foraging habitats beneficial for birds, pollinators, and other small wildlife, and through reducing storm water runoff and erosion at the solar generation site.

This Law proposes solutions to biggest problems concerning land use and conventional agriculture that have impacting consequences for the beekeeping industry in the country. Solar development expands throughout the United States with an expected land footprint of 3 million acres by 2030 and solar parks end up being one more way to destroy bee habitats. More in general, according to the Ecological Society of America, pollinators are facing habitat loss at an alarming rate, due to various characteristics of industrial agriculture. The ScienceDaily Magazine informs that between 2015 and 2016, the USDA reported a 44 percent decline in U.S. honey bee colonies. Bees play a prominent role in food production, pollinating approximately 75 percent of fruits, nuts, and vegetables grown in the U.S and their decline generate a crisis for about one-third of the food production in the country

Soon after the law's approval, taking advantage of the new legislative framework the Bolton Bees beekeepers designed their project to create new grazing habitats for bees within the context of commercial solar developments and to brand the new solar-honey produced in these contexts.

They started partnering with local solar companies interested in creating pollinator habitats and hosting bee operations. Together with them the first step of their project was the implementation of new foraging habitat for

establishing and maintaining native prairie both below and around the solar panels, recreating the ideal ecological conditions to support populations of bees, butterflies and all other beneficial insects.

They followed the guidelines for the establishment of native vegetation developed by the *Minnesota Board of Water and Soil Resources* and the *Minnesota Department of Natural Resources*. These guidelines propose a specially designed seed mix to support populations of bees and the Bolton's enterprise worked to cultivate different varieties of essences and flowering plants, so as to recreate the ideal friendly solar projects habitats where to establish the hives.

Today, in 2021, Bolton Bees has placed in three solar parks of Minnesota their apiaries covering a total of 60 acres, each of which offers a diverse range of natural healthy food sources for bees.

Bees develop traits according to their surroundings and in Minnesota beekeepers need their bees to survive the long cold winters. Bolton Bees disseminates bees that have undergone a rigorous selection process. They select the queens based on their genetic traits and using a process based on evaluations conducted under controlled conditions in each apiary. The result consists in best quality bees staying in Minnesota the entire year, not exposed to the stress of being transported around the country. They do not lack nutritious forage and they are not knowingly being sprayed with pesticides. They are not exposed to an unacceptable level of pests and diseases. They have the genetic predilection to survive a Northern winter.

Through the apiaries installed in the three mentioned solar sites, Bolton Bees recently managed to extract and produce 3,600 pounds of *Solar Honey*. The Bolton Bees' jars indicate the place where each location-specific honey was harvested. Most of the honey will be soon sold at grocery stores, but a portion of it will be given to solar garden subscribers or donated to local community fundraising events. The Bolton's are working to create a certification process and a label for the solar honey, which they hope other beekeepers will adopt, promoting the idea of smarter land use and local beekeeping. Each logo can be customized to inform about the different hives, producers and locations of the products. In this way they are working to create a market among beekeepers breeding Minnesota-hardy bees in a pollinator-friendly habitat. They also want to inspire a new generation of local beekeepers.

The experience of Bolton Bees has been extensively disseminated by articles published in various international journals. The production of honey is a millenary activity and the management of hives is part of the traditional knowledge of farmers all around the world. The decline in the population of bees and other pollinators has also unfortunately become a global problem and its solution requires a recovery of ancient practices with the support of new knowledge, principles and methods adopted by ecological agriculture.

Bolton Bees, supported by their extensive knowledge and technical skills, represent an example of new beekeepers who contribute to the transition of conventional agriculture towards the principles of agroecology, safeguarding local species, soils, water and ecosystems and bringing benefits to local communities

To know more

Boltonbees.com website

Solar-honey.com website

Bolton Bees in Facebook

Bolton Bees through the press

Article in connexusenergy.com

Article in connexusenergy.com

Article in Growlermag.com

Article in nationalgeographic.com

Article in kowalskis.com

Article in parkrapidsenterprise.com

Minnesota Pollinator Friendly Solar Act

ScienceDaily.com

Ecological Society of America

USDA Forest Service and Pollinator Partnership Publication

Minnesota Habitat Friendly Solar Program in bwsr.state.mn.us

Prairie solar tech guidance in dnr.state.mn.us