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CONTACT:

Kyle Semmel
Communications Manager
(716) 687-1225 ext. 112
ksemmel@wnylc.org

Land Conservancy Naturalist Encounters Cicada that Only Exists in the Niagara Region

The Western New York Land Conservancy's naturalist Erik Danielson has encountered a species of cicada endemic to the Niagara region: *Okanagana noveboracensis*. This rare sighting occurred while he was doing an inventory of the plants in the Niagara Gorge at Whirlpool State Park, an amazingly beautiful park in Niagara Falls managed by NYS Parks. Danielson, who was working in the gorge as part of the Land Conservancy's Restore the Gorge project, noticed the Cicada clinging to a shrubby Carolina Rose. After he'd snapped a few photos, it flew away, and Erik continued his inventory.

Within a few days, the images Danielson posted to iNaturalist were identified by entomologist Will Chatfield-Taylor as one of the rarest cicadas in the genus *Okanagana*, *Okanagana noveboracensis*.

Little is known about this cicada. Like many insects, it has no common name. But its scientific name would translate to something close to "New York Cicada." Although it was collected, described, and named in the 19th century, its classification as a distinct species was uncertain until a paper published in 2010 clarified its description and relationship with other similar species. What's interesting about this particular cicada is that all known collections of it have been found only within the vicinity of the Niagara Gorge, a range stretching from Buffalo west to Hamilton, Ontario. Because of this extremely limited distribution—it occurs nowhere else in the world—you might even call it the "Niagara Cicada."

Based on some of its more common relatives, it may have a preferred host plant, most likely a tree. Unlike the synchronized mass emergence of Periodical Cicadas, this species reproduces in multiple staggered broods so that every year, larvae that have lived for several years underground emerge as adults to mate and produce the next generation. There are no periodical cicadas endemic to Western New York.

"This cicada is an important emblem of the gorge's unique and sensitive ecology," Erik Danielson said. "Because it's endemic to this limited area centered around the Niagara Gorge, it's crucial that we protect its habitat if we want it to survive and flourish. It really highlights the reasons why the Restore the Gorge project is so focused on preventing invasive tree species from replacing the Gorge's native trees, which may be the host plants this cicada depends on."

Large blocks of forests may be key to sustaining the long lifecycle of *Okanagana noveboracensis*. This cicada lives in the Niagara Gorge's extensive woodlands and in the forests of the Dundas Valley, near Hamilton, ONT. Unfortunately, the surrounding landscape of the Niagara Region has been heavily developed, making these two blocks of habitat critical to the long-term survival of this local cicada.

The Restore the Gorge project is a multi-year effort by the Land Conservancy and its partners to fortify the gorge and restore its health. Since 2017, the Land Conservancy has removed invasive plant species and replaced them with native trees, shrubs, grasses, and wildflowers from the Gorge Discovery Center to Devil's Hole State Park. This project is made possible thanks to funding from Phase II of Governor Cuomo's Buffalo Billion Economic Development Initiative, the Greenway Ecological Standing Committee, Empire State Development's Yahoo! Community Fund for Niagara County, a New York Sea Grant, and the National Fish and Wildlife Foundation.

The Western New York Land Conservancy is a regional, not-for-profit land trust that permanently protects land with significant conservation value in Western New York for current and future generations. The Land Conservancy envisions a future in which open spaces, working lands, wildlife habitat, and scenic beauty are cherished and protected as part of the landscape and character of Western New York. The Land Conservancy is accredited by the Land Trust Accreditation Commission and is one of 1000+ land trusts nationwide, including 87 in New York State. Land trusts have protected over 56 million acres of land. To learn more about the Land Conservancy, visit wnylc.org.

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