

GigaBlitz event seeks citizen scientists to capture images of nearby biodiversity

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From a bike path in Montana to a backwater underneath a highway overpass in Austria, citizen scientists fanned out last June to capture high-resolution images for the first Nearby Nature GigaBlitz. Organizers are hoping for even broader participation in their efforts to document global biodiversity as they prepare for the second GigaBlitz, scheduled for the solstice week of Dec. 19-26.

The GigaBlitz is organized by a trio of biologists and their partners at Carnegie Mellon University's CREATE Lab. It is similar in concept to a BioBlitz, an intensive survey that attempts to identify all living species within an area at a given time. But instead of sending a bunch of volunteers into a park or nature preserve to do a count, GigaBlitz asks people to create high-resolution panoramic [images](#) of their backyards, nearby woodlots or adjacent vacant lots. Participants around the world can then access these images, crowdsourcing the process of [species identification](#).

"The idea is that biodiversity isn't something you find just in a distant national park or some far-flung field site, but it's around all of us, all of the time," said Ken Tamminga, professor of [landscape architecture](#) at Penn State University and one of the event organizers. "Gigapixel imagery is a means for us to record and share data for sites that may be widely separated, but nevertheless are part of our everyday lives."

About 80 people participated in the inaugural GigaBlitz during the June solstice and uploaded images from 15 countries to the GigaPan website,

said Mary Jo Daines, who coordinates the GigaBlitz for the CREATE Lab in the Robotics Institute. The best of these images will be featured in an upcoming issue of GigaPan Magazine, the lab's online publication.

Among them is an image of a residual part of the [Danube River](#) beneath a highway overpass in Vienna, Austria; [croplands](#) in Brazil; and a vegetable garden in Spain. Others are a bike path near West Glacier, Mont.; a forest pond near Hausen am Albis, Switzerland; a botanical garden in Mexico City; and seashell and coral debris on a Singapore beach.

Tamminga and his fellow organizers, Dennis vanEngelsdorp, senior extension scientist in Penn State's Department of Entomology, and M. Alex Smith, assistant professor of integrative biology at the University of Guelph, Ontario, are co-editing the issue.

"Coordinating the first Nearby Nature GigaBlitz was very rewarding and we all learned from each stage of the process," they write in the introduction to the magazine. "In the end, we were delighted in the geographic breadth represented in the submitters."

Now, the organizers are hoping to expand the number of participants and the number of sites, while also encouraging previous participants to revisit their sites so that changes in the habitats can be tracked over time. Tamminga said rigorous study of the images ultimately will depend on development of content analysis software for gigapixel images.

For the upcoming Nearby Nature GigaBlitz, participants again are asked to create gigapixel panoramas, or GigaPans, of nearby habitat during the solstice week. Each will then upload their GigaPans of nature in their neighborhoods to the GigaPan website, where they and other participants can share in the process of identifying the visible plant and animal species.

In January and February, secondary school teachers in South Africa, Brazil and Huntington, W.Va., will explore the GigaBlitz images with their students as part of a biodiversity project. The schools participate in GigaPan School Dialogues, an international program that enables students to use GigaPan technology to exchange information with each other. It works in conjunction with the United Nations Education, Scientific and Cultural Organization (UNESCO).

GigaPan technology, developed by Carnegie Mellon and NASA, can combine hundreds of digital photos into a large panorama that can be interactively explored via computer. More than 5,000 GigaPan camera systems, which can be used with virtually any digital camera, are in use worldwide and available commercially through GigaPan Systems Inc.

Provided by Carnegie Mellon University

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