



2022



BioBlitzBG

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The Northwest Ohio Center of Excellence in STEM Education (NWO) in the College of Education and Human Development (EDHD) at Bowling Green State University (BGSU) in partnership with the Toledo Zoo and Xcite Learning, held the second annual “BioBlitz BG” event on a natural habitat prairie for local fifth graders from Bowling Green city schools and seventh graders from Washington Local School district.

Below is a recap of our BioBlitz BG activities held on September 21, 2022. Please discuss and reflect on this information so that we can further deepen all learning. Our goals for the event were simple: **ENGAGE•LEARN•ACT!** It is our goal to engage students in exploration and investigation in nature in order to learn about both living and nonliving components of the local prairie ecosystem and what they and their families can proactively do to maintain its health. Finally, we wanted to inspire students to take action to help protect and preserve both local prairies and planet Earth.

Please send student and teacher feedback, both positive and growth feedback to: nwo@bgsu.edu, with the subject line of BioBlitz BG Feedback. With your help, we can make this event even better in the years to come.

We’d like to thank the **BGSU College of Education and Human Development** as well as our local community sponsor **Lubrizol**, along with support from the **Bowling Green City Parks**, the **Toledo Zoo & Aquarium**, and **Xcite Learning** who made this event possible. We are very grateful for continued partnership and collaboration with our STEM Education community!

Dr. Jodi Haney, Professor Emerita, BGSU & Xcite Learning

Mitch Magdich, Curator of Education, The Toledo Zoo & Aquarium

Dr. Emilio Duran, Professor and Director, Northwest Ohio Center for Excellence in STEM Education, BGSU College of Education and Human Development

Susan Stearns, Assistant Director, Northwest Ohio Center for Excellence in STEM Education, BGSU College of Education and Human Development

Jenna Pollock, Education Program Manager, Northwest Ohio Center for Excellence in STEM Education, BGSU College of Education and Human Development

Lisa Addis, Creative Manager, Northwest Ohio Center for Excellence in STEM Education, BGSU College of Education and Human Development

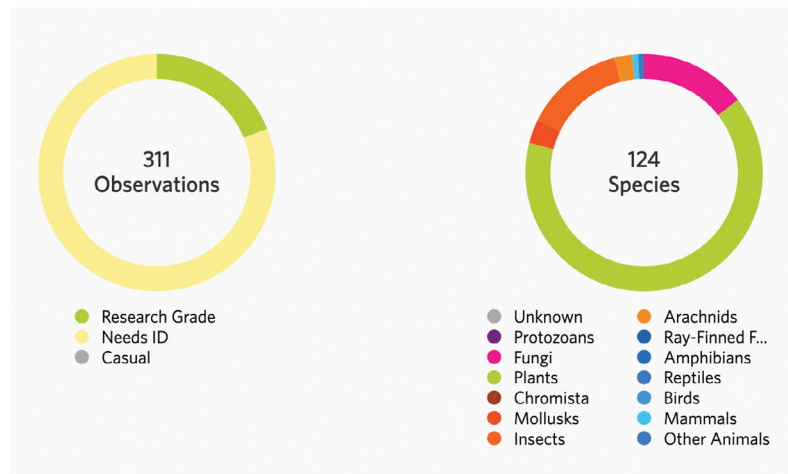
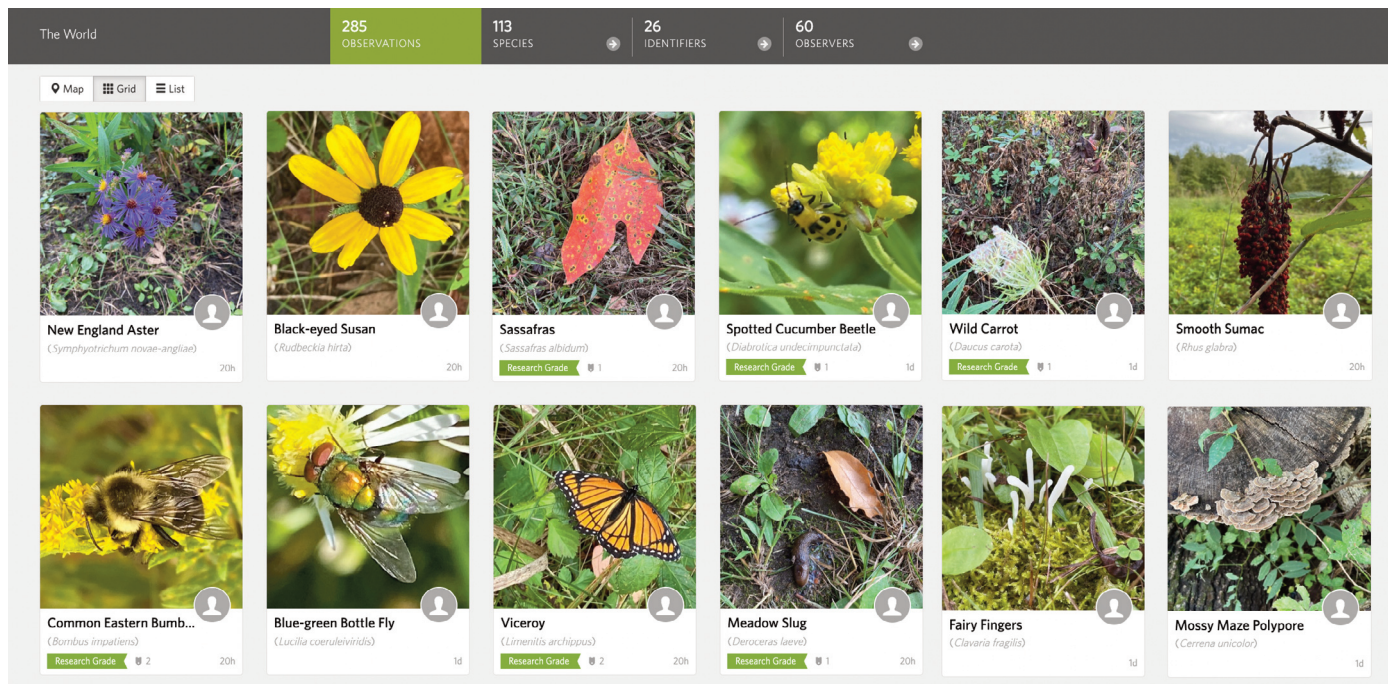


A RECAP OF BIOBLITZ BG 2022

iNaturalist

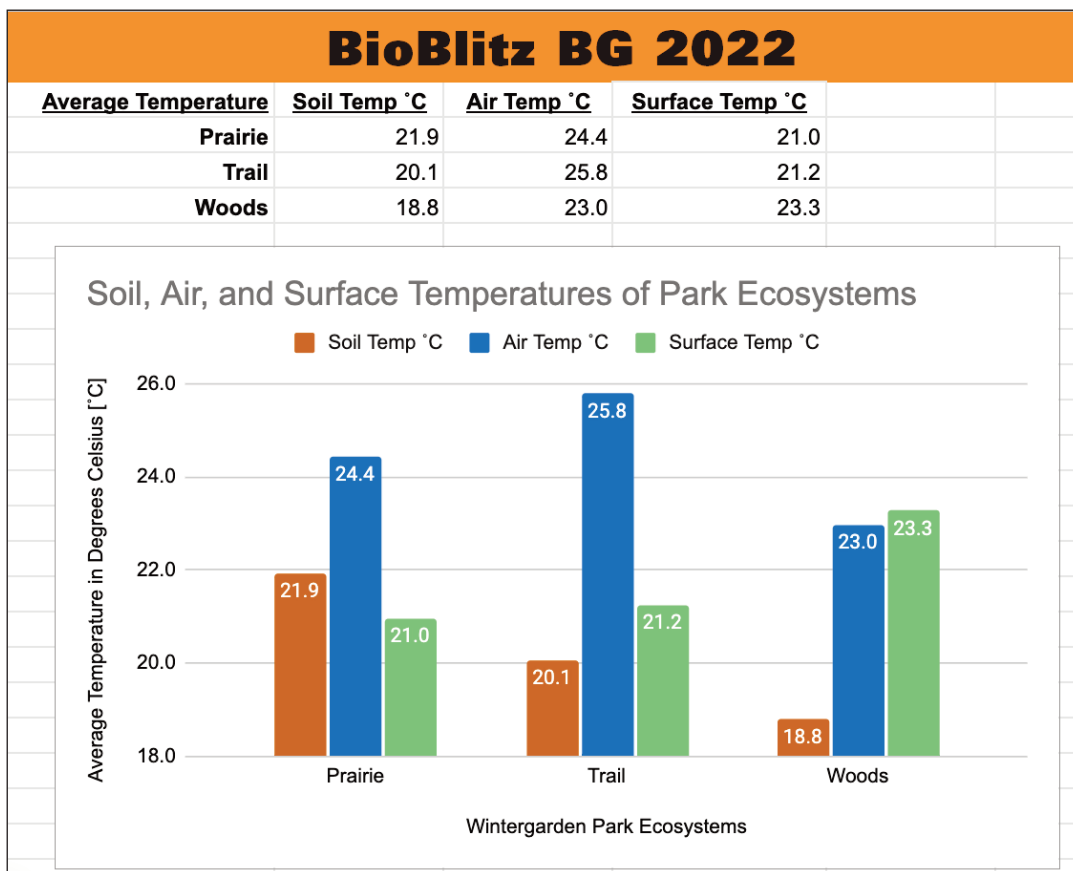
Using the iNaturalist app, we made 311 recorded observations for Wintergarden Park representing 124 species. 59 observations were classified “Research Grade” which means there is community consensus on a precise identification. Lots of plants identified and a few spiders (Banded Argiope Spider!), insects (Asian Lady Beetles!), snails and slugs also observed. Though the BioBlitz is officially complete, the iNaturalist community will continue to verify observations. The hope is that 50% or more of the observations made during the 2022 Project Prairie BioBlitz will eventually be verified and receive “Research Grade”.

Want to see our inventory? Go to <https://tinyurl.com/26fsyfn>



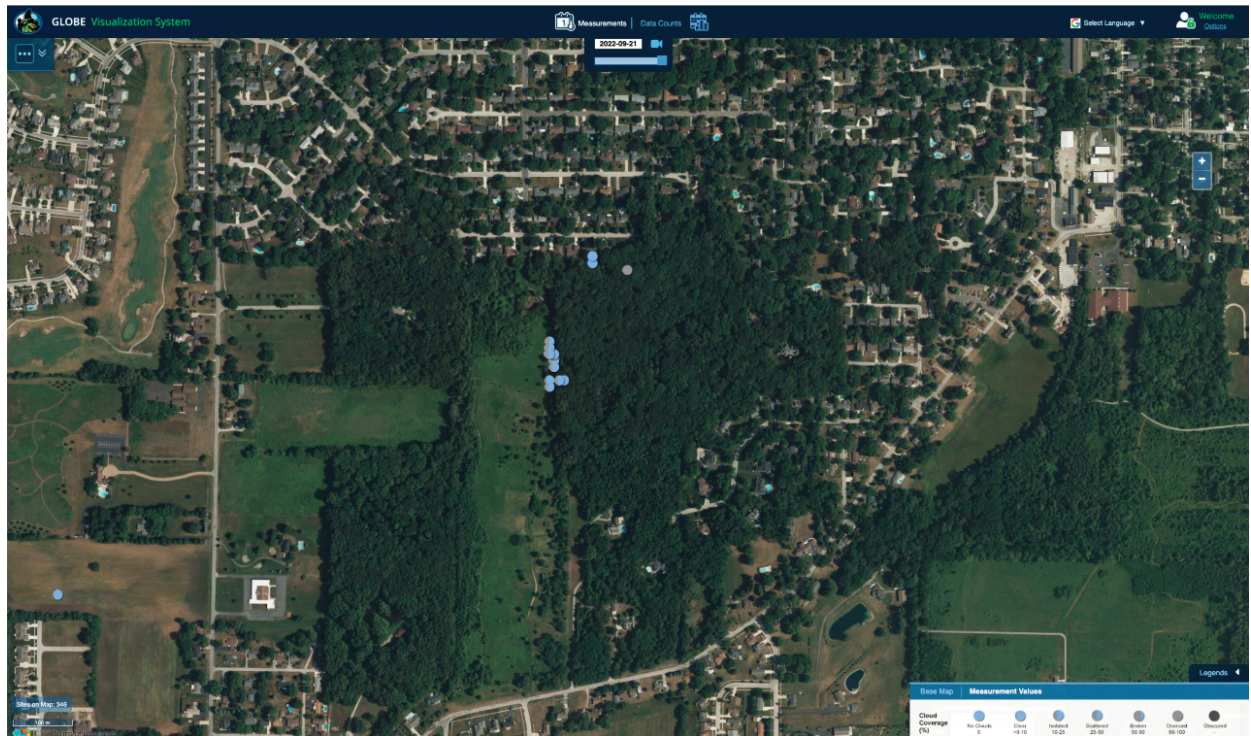
The GLOBE Program: Comparing Soil, Air, and Surface Temperatures and making Cloud Observations

We collected soil, air, and surface temperature measurements to compare the prairie to nearby places (the trail and the woods). Here is a graph of the data collected. Discuss with your students what they think these results mean. Soil temperatures are typically close to one another, as the soil is a great insulator... even still, the prairie temperatures were slightly warmer than the trail or the woods. Perhaps the prairie's soil is more "alive" with microscopic organisms giving off their heat to the environment? The surface temperature of the prairie was slightly cooler than the adjacent woods. Why? Tall prairie grasses give off their heat, helping to keep the environment cooler and more ideal for the plant and animal species living there. The prairie surface temperatures taken in full sun were even cooler than the shaded forest! The prairie air temperatures were just slightly warmer than woods but cooler than the adjacent trail. Why? The prairie plants are living and photosynthesizing, giving off their heat back to the air, keeping the surface cooler. A cooler surface is needed by the animal and plants residing there.

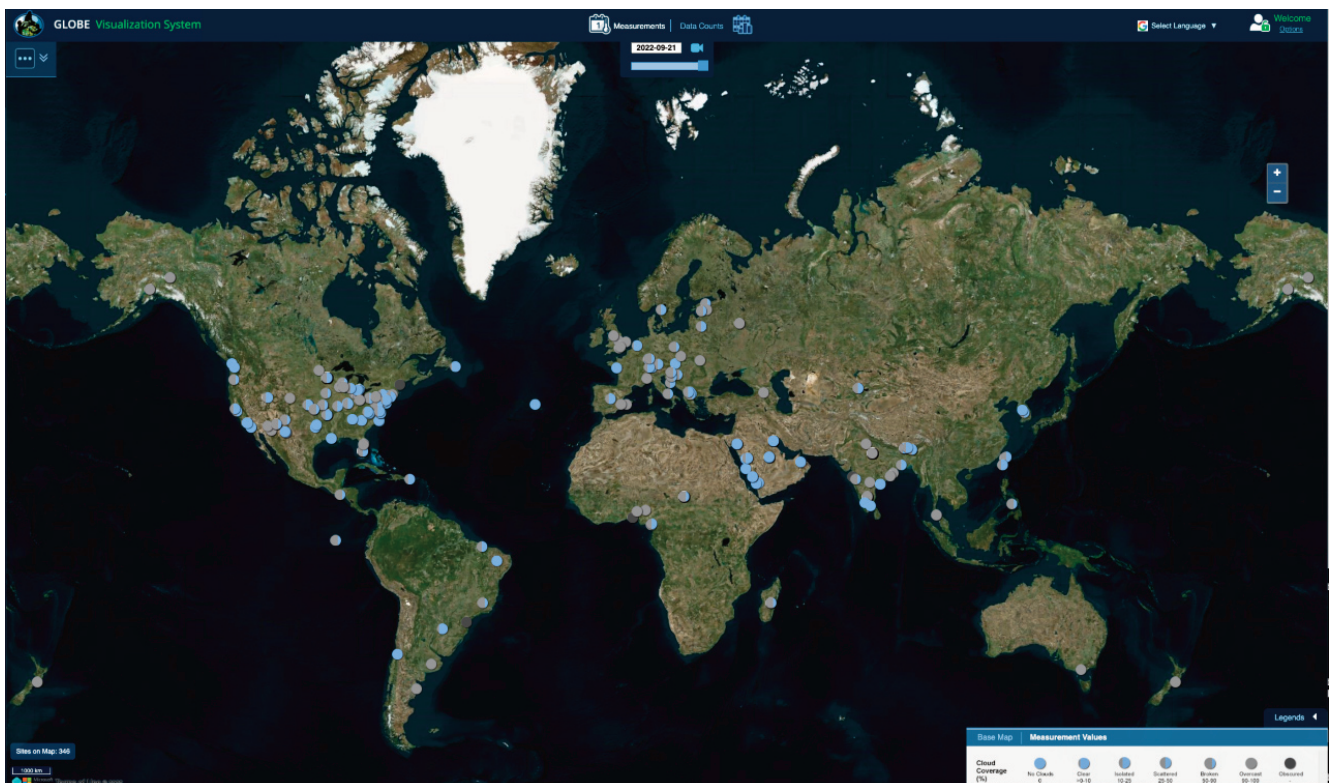


GLOBE Cloud Observations: We also took cloud observations using the GLOBE Observer App. This app allows any person to be a citizen scientist, making important observations used by NASA scientists! Different types of clouds have a different impact on the earth's climate. Cirrus clouds and contrails found high in the sky allow the sun's energy to pass down to earth but then trap that energy in our atmosphere

and ultimately heat up the earth. Low cumulus clouds block the sun's energy from reaching the earth, keeping us cooler. There were sunny skies in the morning in BG, Ohio on 9/21/22, as depicted by our many cloud cover observations! However, the skies turned cloudy quickly as the afternoon storm appeared!



And here's all the GLOBE cloud measurements made around the world on the same day - 9/21/22!



What Are Seed Drops?

Students got messy and made Seed Drops by combining clay (kitty litter), soil, water, and wildflower seeds rolled into golf-ball sized 'drops'. These little balls of clay use a planting technique that is actually hundreds of years old. The clay protects the seeds from hungry insects and birds, while the soil provides organic matter and nutrients. When conditions are right (water, temperature, sunlight), the seed drops will break down and the seeds will germinate into flowering plants that will provide habitat and food for our important pollinator friends.

We used a Monarch Butterfly attracting (as well as other pollinators) wildflower seed mix and can't wait to see all of the Monarch Sanctuaries popping up northwest Ohio in the Spring!



Easy Planting Instructions

Unlike most sowing techniques, Seed Drops should not actually be buried in soil. They need to be placed (or 'dropped') on the soil surface. These plants will grow best in full to partial sun – in a spot that receives at least 4 hours of sun daily. Seed Drops are usually marketed as "throw and grow" - so students were challenged to toss or sling-shot them in random spots to beautify their yard and community! Fall planting works best in our area due to our cold winters with snow cover. Seed Drops do not need to be watered in the Fall as the upcoming snow will help the clay break down, so the seeds are ready to grow when the ground warms up in the Spring.

How to Make Seed Drops

1. In a solo cup, add & combine the following ingredients as described below:

- 1/2 cup Unscented kitty litter (i.e. clay)
- 1/2 cup Water and mix well with a spoon
- Add 1/4 cup of potting soil and mix well

NOTE: Add more water if the mixture will not combine or more clay if it is too thin (want cookie dough consistency)

- 1 teaspoon (5 cc scoop) of mixed native pollinator seeds appropriate for your region and mix well

2. Form 5 or 6 golf-ball size globs by rolling the ingredients in your hands.
3. Put the Seed Drops in a paper bag (left open) and let them dry for several days
4. Simply drop them on bare soil (rake the soil up a bit if possible)
5. Next spring, watch for the seeds to germinate and grow

"To Plant a Garden is to Believe in Tomorrow"- Audrey Hepburn

Solar Balloon: Ask your student how the 50-foot black bag rose into the air. This was a fun demonstration to show that the color of the bag (black) absorbs the sun's energy and heats up the air molecules inside the bag. When the air molecules are heated, they move away from each other, providing LIFT to the solar balloon! On a sunny day when the air surrounding the bag is cool, the heated bag can reach heights of up to 400 feet... that is... if the conditions are just right! You can purchase a solar bag online, this one was purchased at <https://www.stevespanglerscience.com/>



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