

# ED53A-3464 Using the Citizen Science Picture Post Project as the Foundation for Campus Environmental Monitoring by Undergraduate Student Researchers

Kimberly Bowen, Laura Guertin, Penn State Brandywine, Media, PA, [kimmiebowen@psu.edu](mailto:kimmiebowen@psu.edu)

## Abstract

Penn State Brandywine is utilizing the citizen science Picture Post network as a foundation for collecting campus environmental data and for undergraduate student research investigations. The Picture Post is an environmental monitoring project a part of Digital Earth Watch, a citizen science initiative funded by NASA. Picture Post creates opportunities for educators and community members to take digital photos from octagonal platforms on posts registered as part of the Picture Post national network and then share these photos online. Penn State Brandywine joined the Picture Post project May 27, 2014, to begin a long-term monitoring program, starting with an environmental baseline of the campus landscape. Four post locations were selected on campus based upon projected major construction projects. Photos at each post are being taken by students on a weekly basis and uploaded to the Picture Post website. The campus community and beyond are also being encouraged to take their own photos to upload to the website. Instructional signage has been placed on each post, and a Penn State Brandywine Picture Post website (<http://sites.psu.edu/picturepost/>) has been created to explain the project and campus objectives in more detail. This project was started by a student as part of her undergraduate summer research experience and will continue to be managed by students in future semesters. With just a half-year of Picture Post photos, it is evident that there are documented changes in the environment because of construction and expected seasonal variations. The Picture Post photos have provided enough data for an initial undergraduate research project with a student analyzing and comparing the variations in the greenness factor of the photos with supplemental temperature and precipitation data. This project will continue to provide opportunities for citizen contributions to the network as well as data for student investigations of the changing campus environment.

## What is Picture Post

Home | Stuff You Can Do | Buy | Build | Community | Forums | Help | My Page | Login

Featured Picture Post panorama: [Poker Hill Farm 1](#).

What is Picture Post? Watch the video. Sign up for our monthly newsletter. Download our iPhone App.

picture post

Picture Post is a part of the Digital Earth Watch (DEW) network. DEW supports environmental monitoring by citizens, students and community organizations through digital photography and satellite imagery.

You can...

- contribute photographs to any Picture Post
- add your own Picture Post
- measure environmental change in your neighborhood, and
- contribute to science networks.

Learn how! Read our Newsletter. Download our iPhone App.

Double-click on the map to zoom. Click and drag to pan around. Map of All Posts | [List of All Posts](#)

Map data ©2014 Google, INEGI 1000 km

Picture Post © 2014 University of New Hampshire, Durham, NH 03824

About | Buy | Build | Terms of Service | Forum Guidelines | ADA Disclaimer | Privacy Policy | Contact | Report Bug

## Why Picture Post at Penn State Brandywine

- Starting long-term monitoring on campus, local data
- Document environmental changes due to construction & climate
- Provide undergraduate research opportunities onsite

## Why Four Locations

### Post # 1 Lion Has His Eyes on You

- Center of campus buildings
- High student and faculty traffic
- Capture environmental changes
- Current landscaping modifications

### Post #2 Wild for Wildflowers

- No buildings or student foot traffic
- Beautiful field of wildflowers
- Environmental changes



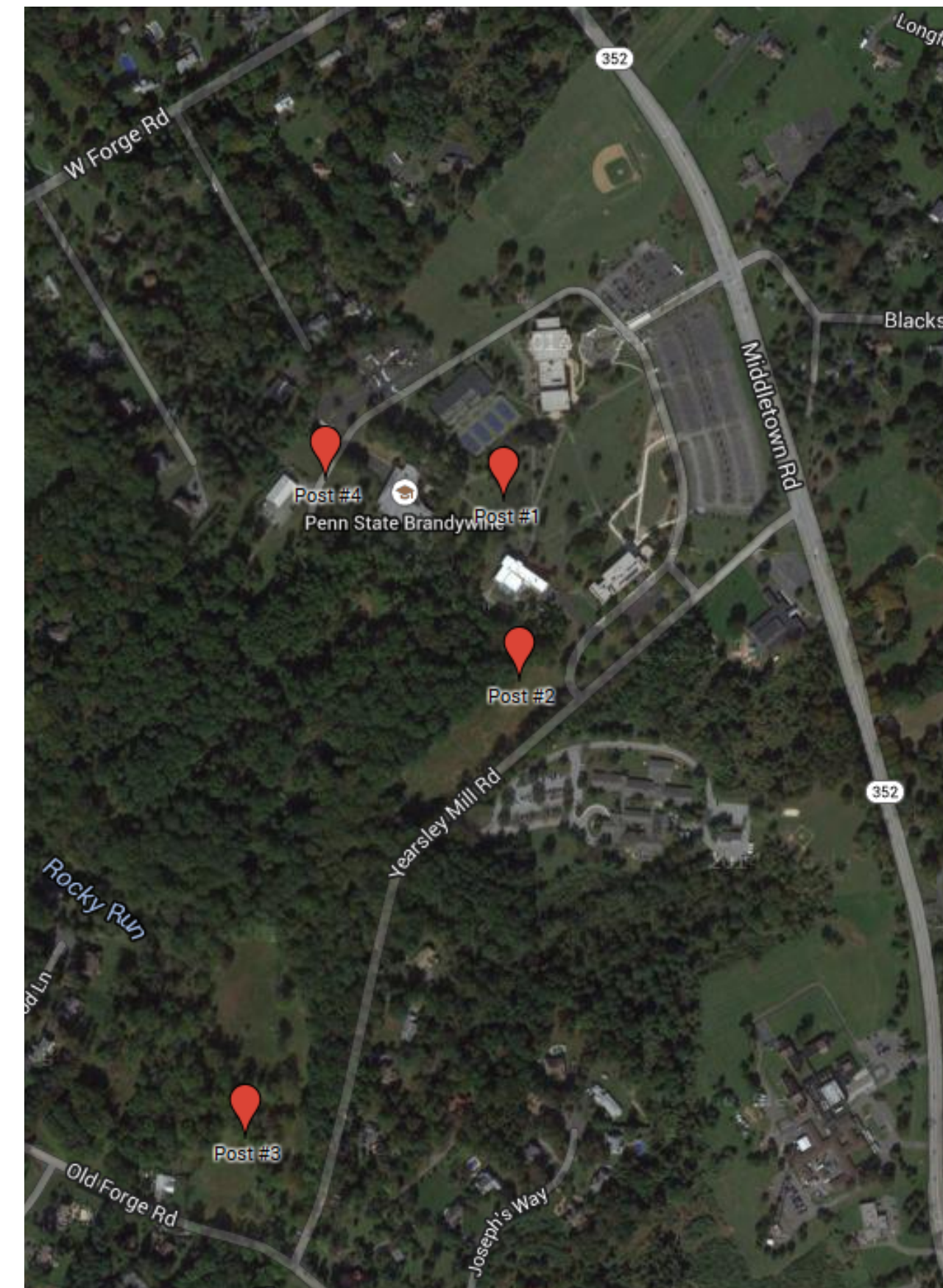
Above: Location of Post # 2 *Wild for Wildflowers*. Penn State Brandywine

### Post # 3 Davis Property & Stream

- Furthest away from campus
- Stream, no human traffic
- Possible future campus garden

### Post # 4 Heritage Rocks and Trees

- Construction of dormitories
- Current landscaping activities
- Environmental changes



Above: Map of locations of all four campus posts

Post: Penn State Brandywine- Wild for Wildflowers

Upload: Click [here](#) to upload pictures for this post.

New Upload! Click [here](#) to upload multiple picture sets for this post.

tags view satellite image make greenness index view exif data

Greenup in spring and development of color in autumn are ways that plants respond to their environment. Changes in the timing of these events are important indicators of climate change. Pictures capture the "greenness" in vegetation that can be used to create a greenness index over time. [Learn more.](#)

- Click to select a column of images below, such as the "N" column.
- Draw a box by clicking and dragging on the large picture on the left.
- Click on the greenness button when you are ready to analyze the area you selected.
- [Help Video](#)

Greenness

Photographer's note: Week 27 Photo Set 2, taken by Kimmie Bowen

1 - 27 of 27 50 per page Deselect All Images

2014-11-18 12:36 [flag](#)

2014-11-10 11:27 [flag](#)

2014-11-04 12:38 [flag](#)

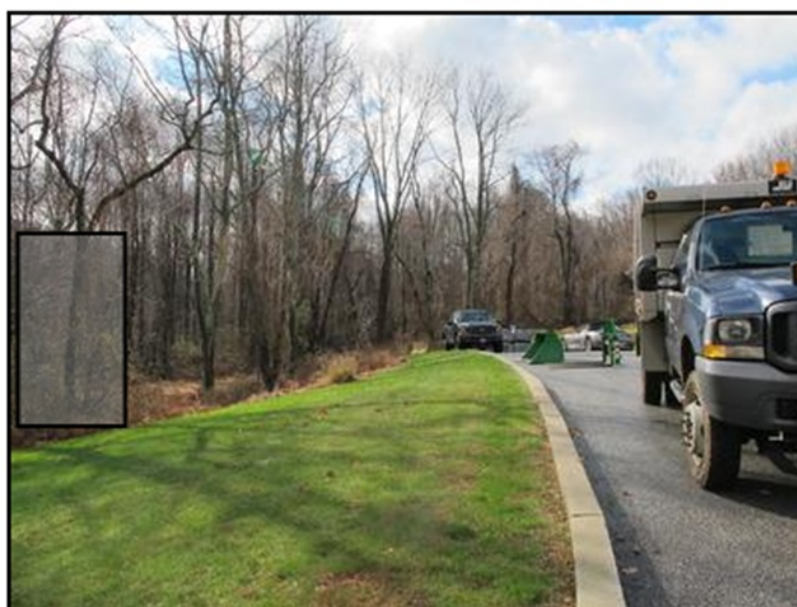
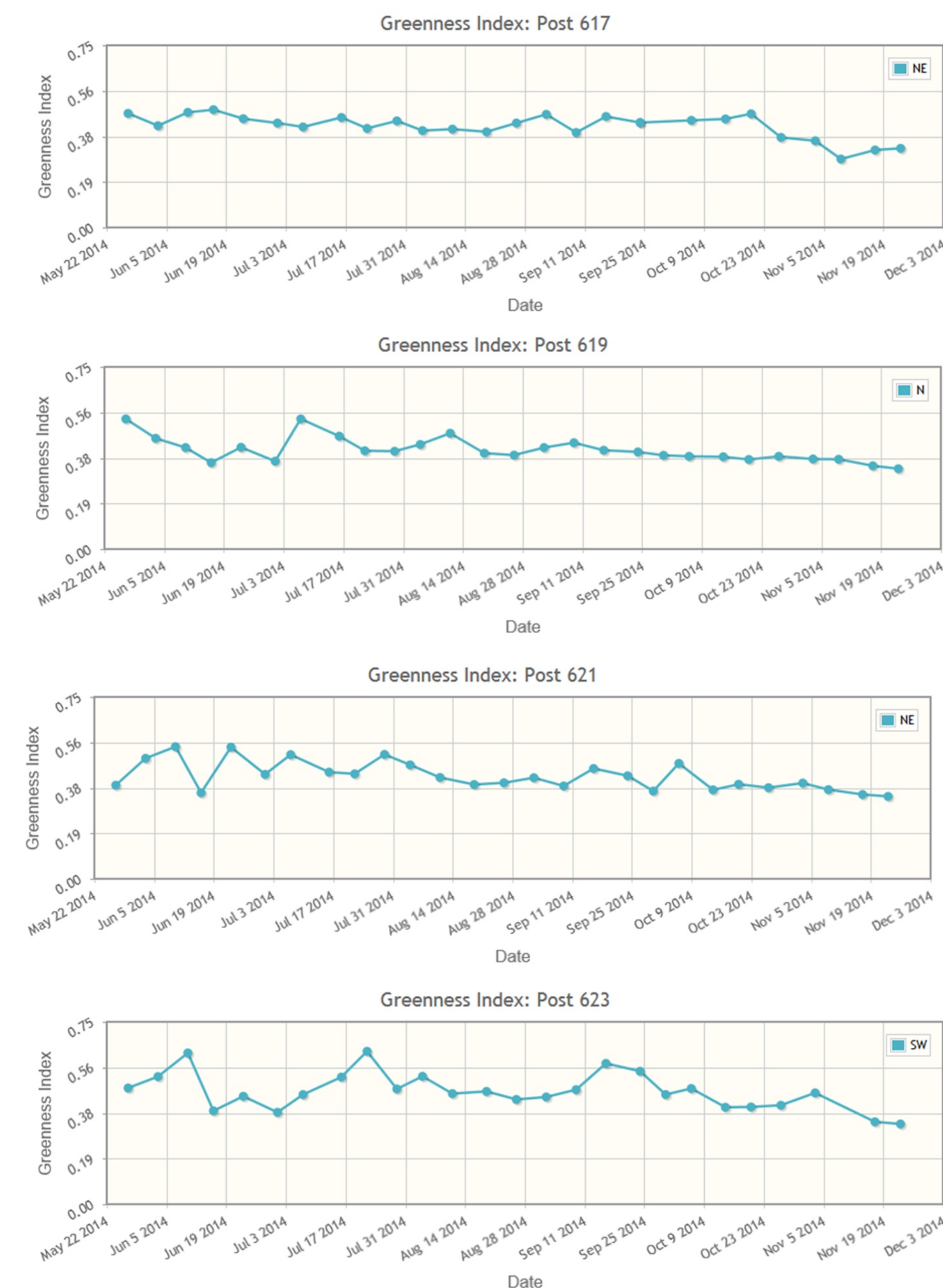
2014-10-27 14:32 [flag](#)

Above: Picture Post website of Penn State Brandywine's Post # 2 *Wild for Wildflowers* showing weeks 23-26



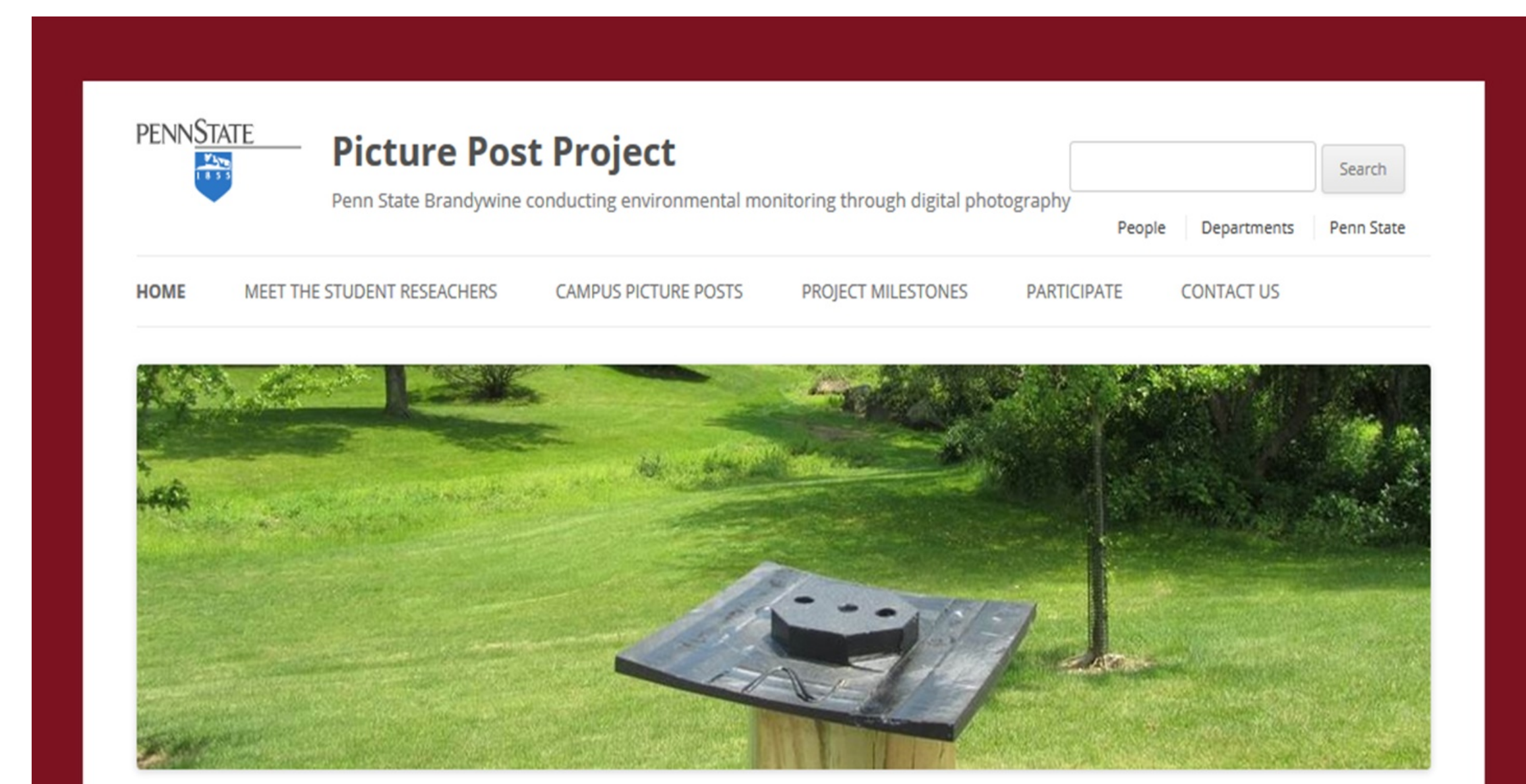
Above: Kimmie Bowen demonstrating how the photos are being taken on the octagonal platform attached to the posts

## Initial Data



## Future Plans

- GigaPan – Creates 360 degree panoramas where viewers can zoom into different places of the photos
- Go Pro – Capturing video while walking to the distant post on campus and capturing visual cues for citizen scientists
- More student participation – Increase the number of people on campus that independently take and upload photos
- Time lapse video - Displaying changes over time through video
- Weather data comparison – Look at features on the greenness graphs to compare with meteorological patterns (temperature, precipitation)



To learn more about our work, scan this QR Code (<http://sites.psu.edu/picturepost/>)

