



USA-NPN

# Salisbury University Phenology Project (SUPP) Annual Report

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## SUPP Overview

Launched in Fall 2021, SUPP is using Nature's Notebook to engage about 180 introductory biology students per year in tracking fall and spring phenophase changes for up to 120 individual trees of eight native species on Salisbury University's campus. This Course-based Undergraduate Research Experience in *Biol 202: Introduction to Biology: Evolution and Ecology* is designed to achieve three goals:

1. The **social goal** is to foster a sense of place, sense of belonging, and sense of community on campus.
2. The **skill goal** to promote a sense of agency with reasoning, communication, and collaboration skills.
3. The **research goal** is to use campus tree phenology as a local measure of climate change and suburban microclimate, and to contribute to the national dataset.



## 2025 Data

In the Spring 2025 semester, 78 students participated in SUPP. Each student selected one of the 120 trees in the study during Week 2 of the course (early February) and collected phenophase data one or more times per week (interrupted by spring break) until Week 13 (late April). Together this cohort contributed **9962 records** to USA-NPN, mostly status and intensity for leaf buds, flower buds, and leaves for Eastern Redbud, Flowering Dogwood, Red Maple, Silver Maple, and Willow Oak.

In Fall 2025 semester, we had 103 students participate in the project from early September through late November (interrupted by Thanksgiving break). Together this fall cohort contributed **11488 records** to USA-NPN, mostly status and intensity for leaves, colored leaves, and falling leaves. Overall, students contributed **21,450** records to the NPN database.

SPRING SUPP				
Common name	Mid Campus Site	North Campus Site	South Campus Site	Total Data Records
Eastern redbud		1067	400	1467
Flowering dogwood	896	1065	990	2951
Pin oak	260	625		885
Red maple	901	403	176	1480
Sassafras			312	312
Silver maple	1291			1291
Sugar maple				
Willow oak	490	1086		1576
Grand Total	3838	4246	1878	9962

FALL SUPP				
Common name	Mid Campus Site	North Campus Site	South Campus Site	Total Data Records
Eastern redbud	10	690	395	1095
Flowering dogwood	905	632	1334	2871
Pin oak	209	534		743
Red maple	1206	560	242	2008
Sassafras			208	208
Silver maple	682		340	1022
Sugar maple			616	616
Willow oak	561	1441	923	2925
Grand Total	3573	3857	4058	11488

In both semesters, most students collected their data via Nature's Notebook, downloaded their own data, then worked in teams to graph their data and present group Capstone projects focused either on comparing SUPP data over time (data collection began in Fall 2021) or comparing data among individuals experiencing different microclimates on campus. It was a great addition this year that students could use the NPN data analysis tools to access SUPP data records from previous semesters.

## Quality Control

Over time, we have improved quality control by providing additional checkpoints during the semester to have students check their NPN data sets, as well as additional troubleshooting guides and videos to show them how to correct their data if they accidentally collected data for the wrong tree, or miscoded data. In addition, we make 120 new aluminum tags, engraved with each tree ID in the SU Rommel Center for Entrepreneurship to replace prior tags with ID's marked in Sharpie, which fade quickly. These new tags will help ensure that students have identified the correct tree from the start of the sampling period.

## Changes to SUPP Tree List

Unfortunately, a few SUPP trees had to be replaced in the past year, including a red maple, an eastern redbud, and three pin oaks. The pin oak population on campus appears to be stressed due to a bacterial infection, perhaps a sign that the pin oak population will migrate north due to climate change.

## Abiotic Factors

Increasingly, students are mining temperature and precipitation data from NOAA to help them interpret the difference between weather and climate, and to have better context for understanding microclimates and urban heat-island effects.

## Student Perceptions

A new reflection prompt has been added to the last assignment of the semester to collect targeted feedback from students about their SUPP experience. Examples:

- *I never knew what I was going to see on my tree, and each week was a surprise*
- *The SUPP project has been a fun way for me to get involved with nature*
- *Before this class, I didn't even know we had an arboretum*
- *It opened my eyes to everything phenology, and I use it in my daily life!*
- *Getting close with a lab group and working with them on a project was really fun*
- *Participating in SUPP helped build real research skills by letting me collect and interpret data used in a national database*

## Sharing Results

As always, students present their work to each other and biology colleagues during their Capstone Presentations and reference their research all semester in their coursework. Further, an Honors student presented SUPP work during the Salisbury University Student Research Conference in April. In addition, we have been posting weekly updates to Instagram ([@whatssupp1101](https://www.instagram.com/whatssupp1101)) to share with the community. We were very pleased this year that our data were incorporated into the analysis of Gallinat et al. (2025).

## SU Nature Rx

The SUPP project has served as a helpful example in the establishment of a new Campus Nature Rx chapter, called [SU Nature Rx](#), emphasizing the benefits of outdoor nature experiences to wellbeing. This program has its own [Instagram](#) that is complimentary to that of SUPP (and sometimes including SUPP posts).

