

Spotlight on Sustainability

Your Green Team



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Plants. Our Future Friends or Enemies?

Most people are aware that climate affects plants, but fewer people are aware that plants affect climate. Plants are involved in a complex feedback where they take up a great deal of CO₂ emitted by human activity, and emit CO₂ through respiration. Maintaining the balance between plants CO₂ uptake and emissions is crucial to sustaining valuable ecosystem functions and services.

As global warming progresses, are we able to rely on plants to maintain this balance? How can we determine the ways plants respond to climate change, and alter our systems to adapt? Dr. Danielle Way aims to find the answers by studying the physiological and biochemical responses of boreal forests to climate change. Partnering with the SPRUCE project, Dr. Way has conducted experiments within their boreal bog, where 40-50 year old trees are exposed to elevated CO₂ concentrations, as well as temperatures 9 °C above normal through their open top chambers. One year of data analysis illustrates that the ability of boreal tree species to take up CO₂ seems to acclimate to increased temperatures, but the amount of CO₂ that is being emitted through respiration is greater at higher growth temperatures. Looking toward the future, monitoring this data is crucial to determining whether plants will become more of a carbon sink or carbon source in the midst of climate change!



Bees, butterflies, and other pollinators are on the path toward extinction due to habitat loss, pesticide use, and climate change. How can you help? Consider creating a pollinator-friendly garden in your backyard! Plant a variety of shrubs or flowers including Goldenrod, Smooth Aster, and Harebell. It could save a life!



Showcasing Sustainability

This *Spotlight on Sustainability* recognizes the Department of Biology's strategies to improve their sustainable outreach! On top of allowing public access to their greenhouses for faculty and students, the department hosts organizations in the community! For example, the Jewish National Fund celebrated Tu B'Shevat—the New Year for Trees—by utilizing Western's greenhouses to plant trees and learn about the seven sacred species including wheat, barley, grapes, figs, pomegranates, olives and dates.

