Community Spotlight

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Seed Dispersal in Tropical Forests: Learning How Plants Move Around (Version 1.0)

By Sunshine Liberty Brosi

Module Description:

This module focuses on the dispersal of seeds from trees in fragmented tropical forests. Students use data from published studies to understand patterns of seed dispersal and apply these ideas to the design of a conservation area.

Understanding differing dispersal mechanisms (wind & animal) and their impact on seed shadows and conservation actions is an essential first step in conservation. Comparing two types of tropical tree species, a wind-dispersed species and a bird-dispersed species, students consider factors that may limit dispersal for each type of tree. Students explore concepts such as seed shadows, the relationship between seed survival as a function of distance from the maternal tree and the Janzen-Connell hypothesis. Students learn to graph data and discuss the impacts of fragmentation on dispersal.

Teaching Setting:

This resource was implemented in an upper level Dendrology course, but could also be used in Introductory Biology, Ecology, Plant Biology, or High School AP or general biology.

QUBES Citation:

Brosi, S. L. (2018). Seed Dispersal in Tropical Forests: learning how plants move around. Plants by the Numbers II, QUBES Educational Resources. doi:10.25334/Q4B43Z

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Related Materials and Opportunities:

The resource featured in this ROW was adapted from the original resource, *Seed Dispersal in Tropical Forests* by HHMI BioInteractive. The author began the module with a learn-before-lecture approach, where students reviewed the HHMI BioInteractive *Seed Dispersal in Tropical Forests* video online and completed a quiz about the video before coming to class. The author then supplemented the use of the video with an in-class discussion, a seed-sorting activity, and an additional video. Links to both videos and the authors teaching notes can be found in the full resource record.

The author adapted this resource while participating in the Botanical Society of America (BSA)-sponsored Faculty Mentoring Network (FMN), Plants by the Numbers II: Growing Quantitative Literacy Using Botany, in which participants customized and implemented plant-focused modules that address quantitative reasoning skills. Browse all resources developed by the Plants by Numbers II FMN participants. Also check out resources developed during the first iteration of the Plants by the Numbers FMN, which ran during the Spring 2018 semester. Feel free to also join the BSA group on QUBES to stay connected to BSA activities.

The author of this resource was a speaker at the 2018 QUBES/BioQUEST Summer Workshop, where her presentation was titled, *Including the Culture in Biology: Appealing to the Broader Student Demographic*. Learn more about Sunshine Brosi and her presentation at the 2018 QUBES/BioQUEST Summer Workshop here.

The 2019 QUBES/BioQUEST Summer Workshop, Evolution of Data in the Classroom: From Data to Data Science, will be held at the College of William & Mary in Williamsburg, VA on July 14-19, 2019 and will focus on how data science practices can enhance biology education. Participants will work with colleagues to develop and adapt teaching materials that use data and quantitative skills to engage students with meaningful biological problems. We will consider which aspects of data science are most relevant to biology education, and how to incorporate these ideas in the existing curriculum. We will explore effective pedagogical approaches for incorporating data science in the classroom. Look for applications to attend the summer workshop to open in March. In the meantime, if you are interested in attending, please subscribe to receive updates.

The 2019 QUBES/BioQUEST Summer Workshop organizers are seeking four highly motivated future faculty volunteers who will help with the day to day logistics of the workshop in exchange for a registration fee waiver. If you are interested in being a future faculty volunteer, learn more about the Future Faculty Program on the workshop website. Applications will open early 2019.