

# Community Spotlight

Each <u>Community Spotlight</u> features an outstanding group, partner, resource, or member of our community.

## Food Chain Dynamics In A Simple Ecosystem By Jessica Joyner, J. Phil Gibson, Anna Petrovicheva



#### **Module Description:**

Demonstrating predator-prey dynamics rarely fit the timeline of a lecture course or the scope of student experiences. This lab explores food chain dynamics in a microcosm of a simplified ecosystem with a primary producer and a grazer. It can be accomplished in two class sessions (one for experimental setup and the other for data collection). The primary producer is a marine algae and the grazer is brine shrimp (Artemia sp.), both of which are accessible and have low risk in culturing and maintenance. For the ecological context of predator-prey dynamics, the population densities are compared after a 2-week incubation of student designed experiment. Additionally, the concepts of 'bottom-up' or 'top-down' influences on an ecosystem can be taught and discussed in a broader context of ecosystem ecology.

#### **Teaching Setting:**

The module was designed for used in an introductory Ecology course with a mix of Biology and Sustainability majors, most of which were upperclassmen. The resource includes the lab exercise, a hypothesis workshop, teaching notes, and Excel sheet templates to estimate population sizes and compare means among groups via t-test or ANOVA.

### **Full Citation:**

Joyner, J., Gibson, J. P., Petrovicheva, A. (2018). <u>Food Chain Dynamics In A Simple</u> <u>Ecosystem. Plants by the Numbers</u>, QUBES Educational Resources. <u>doi:10.25334/Q4C41H</u>

**Visit Resource** 



## **Related Materials and Opportunities:**

This module is one of several that was adapted by participants in the Botany Society of America (BSA)-sponsored Faculty Mentoring Network (FMN) "Plants by the Numbers" held during the Spring 2018 semester. If you are interested in adopting <u>plant-focused modules</u> that address quantitative reasoning skills, apply by August 24, 2018 to join the <u>"Plants by the Numbers II" FMN for Fall</u> <u>2018</u>. Dr. Phil Gibson also presented a <u>session at the BioQUEST/QUBES</u> <u>Summer Workshop</u> in which he describes the modules used in the BSA "Plants by the Numbers" FMN at the 2018 BioQUEST/QUBES Summer Workshop.

QUBES on Social Media



<u>BioQUEST</u> is a transformative, collaborative community empowering educators to drive innovation in STEM education for all students.

Copyright © 2024 QUBES, All rights reserved. P.O. Box 1452, Raymond, NH 03077 You are receiving this email because you have shown interest in receiving updates from BioQUEST and QUBES.

> Subscribe / Unsubscribe from mailing list View Community Spotlight on QUBESHub Community Spotlight: Issue 1