Teaching resources for “Live from the Field: Forest Restoration” event April 23, 2025

Pre-event student reading assignment (5-10 minutes total)

Module 1 - Restoring Tropical Forests:
- https://www.learngala.com/cases/restoring-tropical-forests/1
- https://www.learngala.com/cases/restoring-tropical-forests/2

Module 2 - Functional Trait-based Restoration:
- https://www.learngala.com/cases/functional-trait-based-restoration/1
- https://www.learngala.com/cases/functional-trait-based-restoration/3

Online Modules, Implementation plans, and Teaching Notes

Title of module: Restoring tropical forests: Is planting clusters of trees a cost-effective and ecologically sound strategy to restore tropical forest?
Module Authors: Karen D. Holl and Rakan A. Zahawi
Gala link to module: https://www.learngala.com/cases/restoring-tropical-forests

1) Implementation Plan Author: Michael Britton
Audience/Context: Biology majors
Link to QUBES publication of Implementation Plan: doi:10.25334/R3FN-YF06
Citation for QUBES pub of Implementation Plan:
Britton, M. (2023). Restoring tropical forests: Implementing an online module about restoration and succession in an advanced undergraduate ecology course. OCELOTS FMN: Implementing an online module in tropical biology, (Version 2.0). QUBES Educational Resources. doi:10.25334/R3FN-YF06

Short quotes from Teaching Notes:
- Students enjoyed the module and the learning materials. The discussion in my general ecology course focused on the process of succession and how restoration can be viewed as a form of succession. Moreover, we used the various outcomes of the restoration processes as evidence that succession does not follow a single, predetermined path and that human activity, historical factors, and other influences are important in determining the process of succession/restoration.
- Students enjoyed the module and the included information. They liked that the restoration case study provided a real-world example of the variation in successional processes (they are often taught that succession follows A to B to C etc. in introductory biology courses).

- This activity allowed a real-world extension and case study of our unit on succession. It provided a nice illustration that succession is not a rigid, formulaic process but one that varies according to a variety of factors.

2) Implementation Plan Author: Akbar Reza
Audience/Context: Biology majors course in Indonesia
Link to QUBES publication of Implementation Plan: doi:10.25334/51FW-T193
Citation for QUBES pub of Implementation Plan:

Reza, A. (2023). Restoring Tropical Forests: Implementing an online module in an undergraduate biology course in Indonesia. OCELOTS FMN: Implementing an online module in tropical biology, (Version 2.0). QUBES Educational Resources. doi:10.25334/51FW-T193

Short quotes from Teaching Notes:

- I was really satisfied with the engagement of the students after experimenting with several pedagogical approach (e.g mind map, roundtable, role play, and flipped learning).
- The majority [of students] said that the evidence-based study and the various pedagogy approaches was a fun way to understand the theoretical concepts.
- [With this module activity there was] more engagement instead of a classical one-way lecture and [the module] enriched the class with evidence-based situations that deal with uncertainty and complexity.

3) Implementation Plan Author: Branko Hilje
Audience/Context: Forest ecology course in Costa Rica
Link to QUBES publication of Implementation Plan: doi:10.25334/MJWG-2562
Citation for QUBES pub of Implementation Plan:

Hilje, B. (2023). Restoring Tropical Forests: Implementing a module in an undergraduate majors' course in forest ecology in Costa Rica. OCELOTS FMN: Implementing an online module in tropical biology, (Version 2.0). QUBES Educational Resources. doi:10.25334/MJWG-2562

Short quotes from Teaching Notes:

- I believe the students engaged with the module. The fact that the information for the module was collected in Costa Rica established a known context for the students.
- My students seemed engaged with the module. They commented about enjoying the module and learning in a different way.
- [This module] fits it very well [in my course curriculum] since it covers one of my Lecture topics about human impact on habitats, forest fragmentation, and restoration.

Title of module: Functional trait-based restoration. Can hybrid restoration enhance invasion resistance and ecosystem services?
Module Authors: Rebecca Ostertag and Nicole DiManno
Gala link to module:
https://www.learngala.com/cases/functional-trait-based-restoration

1) Implementation Plan Author: Raquel Cola
Audience/Context: Biology majors course in Brazil
Link to QUBES publication of Implementation Plan: doi:10.25334/TQKJ-0W97
Citation for QUBES pub of Implementation Plan: doi:10.25334/TQKJ-0W97

Cola, R. E. (2024). Implementing an online module about plant functional traits in the context of restoration ecology for an undergraduate class in Brazil.. OCELOTS, QUBES Educational Resources. doi:10.25334/TQKJ-0W97

Short quotes from Teaching Notes:

- Having quality content, wherein creators prioritize facilitation access to knowledge through analogies, was crucial in helping students truly grasp the concepts and processes involved. Therefore, students' understanding of the proposed concepts was satisfactory.
- I believe that understanding the basic concepts and how functional traits influence the restoration of tropical ecosystems is essential for anyone who studies tropical ecology. Furthermore, implementing this module with the 4DEE and DEIJ strategies in mind is essential to achieving the proposed objectives.

For questions, contact Ann Russell: arussell@iastate.edu