Engaging Pre-service Teachers and Elementary School Students in the Forestry Reclamation Approach Through Earthworm Inoculation

H.J. Travis, P.N. Angel, and E.J. Fees
Introduction

• Partners
• Forestry Reclamation Approach
• Earthworms and Soil Quality
• Teacher Education and Service Learning
• Community Involvement
Partners in this project:

- Appalachian Regional Reforestation Initiative (ARRI)
- Appalachian Coal Country Watershed Team (ACCWT)
- Indiana University of Pennsylvania (IUP) pre-service elementary teachers
- Local teachers and students
ARRI/ACCWT

• ARRI is a citizen/industry/government program formed to restore forests on post-bond release mine sites in Appalachia
• ACCWT is a partnership between OSM and AmeriCorps*VISTA to help target problems associated with coal mining in Appalachian watersheds
Indiana University of PA

• Pre-service elementary teachers (students in the teacher education program who plan to be elementary teachers) completing their life science course, SCI 104 Fundamentals of Environmental Biology
Local teachers and students

- Teachers and students in areas that are served by ARRI/ACCWT who want to participate in local reclamation efforts to increase awareness and encourage education-related activities
Forestry Reclamation Approach

- Suitable rooting medium for trees
- Loosely graded topsoil
- Compatible ground covers
- Early succession trees and commercially valuable species
- Proper tree planting techniques
FRA in action
Earthworms and Soil Quality

- Evidence supports the value of earthworms in improving soil quality in post-mining soils (Butt, 1999; Ma et al., 2003; Vimmerstedt & Finney, 1972)
Teacher Education and Service Learning

- Service learning incorporates service to the community with classroom academics.
- This project included research, lesson plan design, science content, and peer evaluation.
- Lesson plans focused on inquiry and the 5-E model (Trowbridge & Bybee, 1990).
5-E Lesson Plan Model

- Designed to encourage inquiry and student-centered learning
- 5 sections: Engage, Explore, Explain, Elaborate, and Evaluate
- Leads to improved critical thinking skills and the ability to apply learning to new situations
Community Involvement

- Students and teachers in several locations, including Haysi, VA and Carcassone, KY participated in raising and releasing earthworms at FRA sites last year.
Great publicity for the reforestation project in local newspapers.
As one student noted, “It would be such a great thing to show grandkids and to know that we helped with it, helped bring it back.”
References


Questions?

Holly Travis
Indiana University of PA
h.j.travis@iup.edu