



Campus as a Reclamation Classroom

A case study in urban reclamation from Lexington,
KY, USA

Kenton Sena, Ph.D.

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Reimagining Reclamation

- From ASMR to ASRS—how is our focus broader now than just mining?



Reclamation in Urban Spaces



Impacts of active and legacy
landuse

Soil compaction and contamination



Invasive Species



Landscaping constraints/restrictions

Incorporating Reclamation in Teaching

- Pros
 - Research and service as high impact teaching practices
- Cons
 - Travel time
 - Student expertise/ability
 - Project time



Synthesizing Teaching and Practice



Rural mines – prohibitively far away for class trips



Urban sites can be just outside the classroom!



Urban sites also bring practice home to students

A photograph of a university campus street. In the foreground, a large, dark tree trunk stands on a dirt and mulch area. To the right, a paved road with a concrete curb runs into the distance. In the background, there are several large, leafy trees and a multi-story red brick building with white accents. A street sign is visible near the center. The overall scene is bright and clear, suggesting a sunny day.

Case Study: University Drive Project



Context

- UKy – Urban campus in Lexington, KY
- Project site unvegetated and eroding, but mature shade trees overhead
 - Shade + runoff

Project Overview



Mitigate
compaction
(pneumatic tillage)



Amend soil (mulch
and/or biochar)



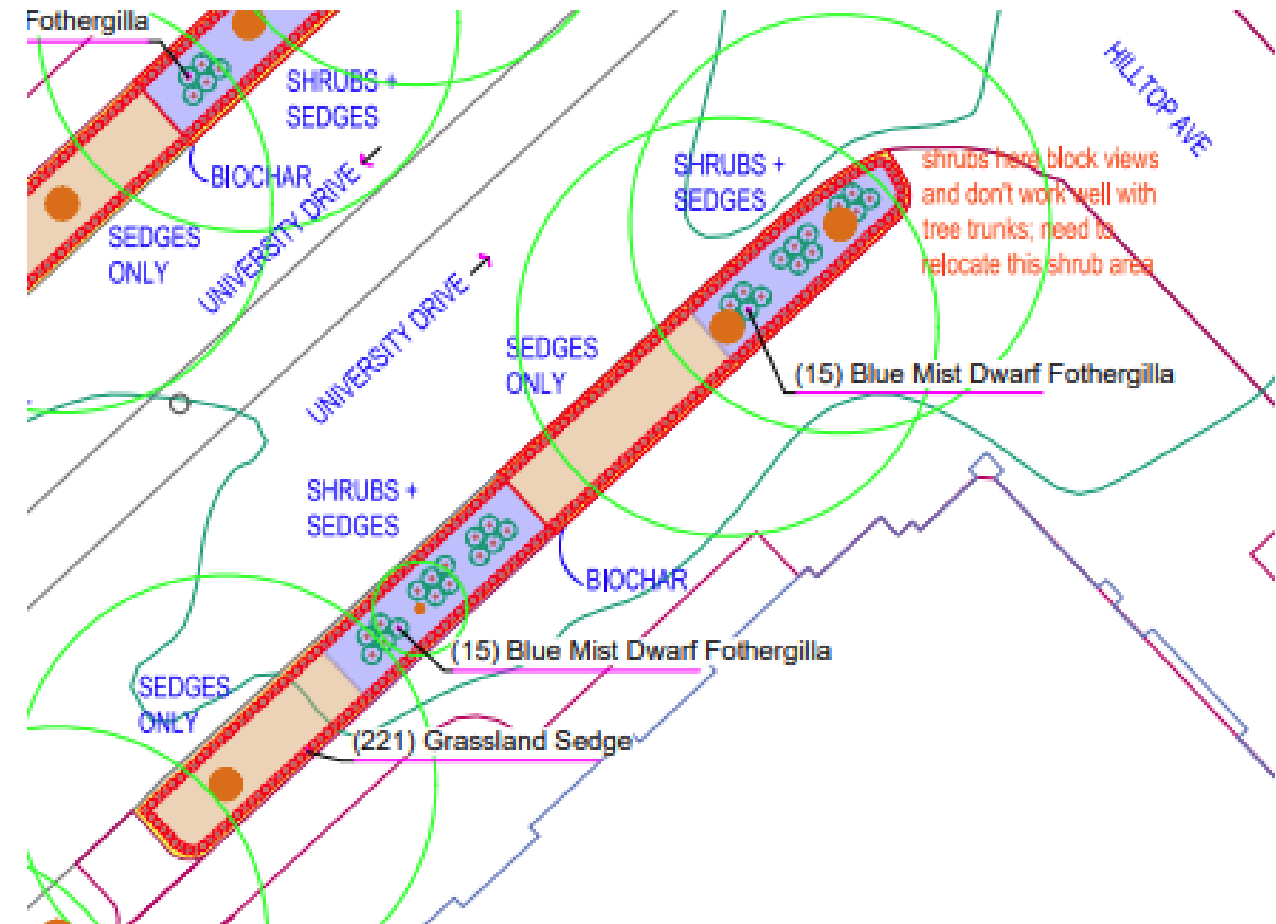
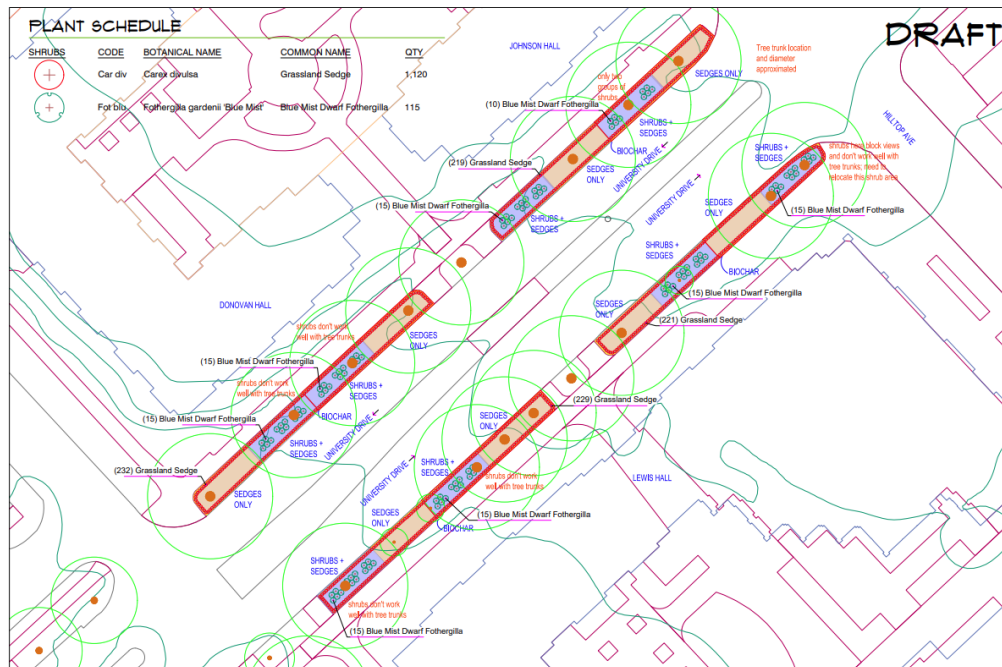
Planting (sedges
and/or shrubs)



Research and
Service Project for
HON 152 class

Experimental Design

- Planting (sedge only, sedge + shrub) and amendment (biochar, no biochar) treatments
- Four replicates
- Four control plots



Project Team

Stacy Borden (UKy Grounds)

Maureen Dreckman (UKy Campus Planning)

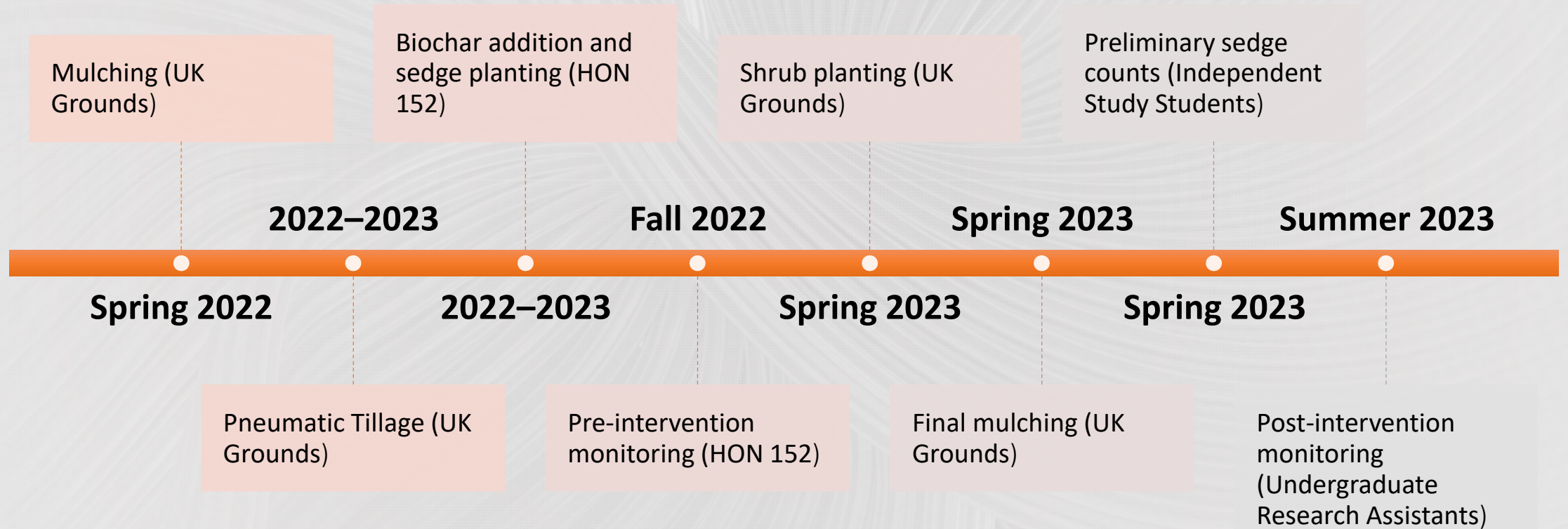
UKy Student Sustainability Council (Funding)

Green Carbon Solutions (Biochar)

HON 152 (Fall 2022)

Additional volunteers

Project Implementation



Project Outcomes—Site

- Shrubs and sedges planted
- Low first-year sedge survival
- Analysis ongoing (compaction and infiltration)
- 46 volunteers
- 100+ service hours



Project Outcomes— Teaching

"The hands-on learning and community service experiences really helped us *connect the real-world with the classroom teachings.*"

"I also loved our class project, as it gave us an excuse to spend time outdoors, and it helped us *learn way more effectively* than just relying on lectures and readings."

"I like how we are able to *actually do things on campus* rather than just learning about them."

Conclusions and Recommendations



LOOK FOR OPPORTUNITIES TO
APPLY YOUR EXPERTISE IN YOUR
OWN COMMUNITY—
DEGRADED/ERODING SOILS,
BROWNFIELDS, ETC.?



CONNECT TO YOUR CLASSES, OR
PARTNER WITH A LOCAL
COLLEGE/UNIVERSITY



COMMUNICATE EXPECTATIONS
CLEARLY TO STUDENTS SO THEY
KNOW WHAT THEY'RE GETTING
INTO



FLEXIBILITY IS KEY!

Acknowledgments

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Biochar donated by Green Carbon Solutions

Stacy Borden, Maureen Dreckman

HON 152 students

Spring 2023 students: Kennedy Snyder, Abe Condra, Spencer Harris, Anna Ackerman, Ellen Williams, and Bryce Charles

Summer 2023 students: Hunter Dockery, Cooper Samuelson

A photograph of three young people working in a garden bed. The garden bed is filled with brown autumn leaves. One person on the left is wearing a brown shirt and blue overalls, crouching and working with the plants. A second person in a blue shirt is also crouching in the middle. A third person on the right is wearing a grey t-shirt and blue jeans, kneeling and holding a black rectangular object. In the background, there is a building with large windows. A black tray with small green plants sits on the ground to the right.

Questions?
