

Updating the University of Kentucky's Native Tree Trail



By: Lee Moser and Matt Strong
FOR 599 Term Project
Partially funded by: UK Service-Learning Program

The Purpose

- Increase awareness of native tree species
- Encourage residents to plan their landscaping with native trees/plants
- Provide an educational trail for people to enjoy while exercising
- Raise awareness of GPS/GIS applications

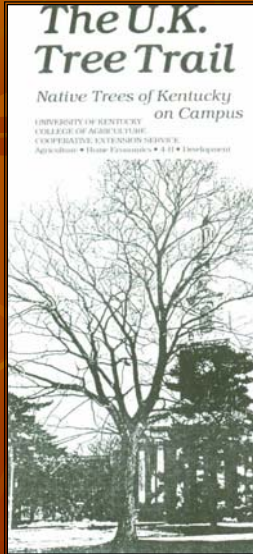
Why Native Trees?

- Represents the natural beauty and diversity of Kentucky's forests
- Avoids the use of invasive/non-native species which can out compete native species
- Provides native habitat for wildlife
- Adapted to Kentucky's climate

The Task at Hand

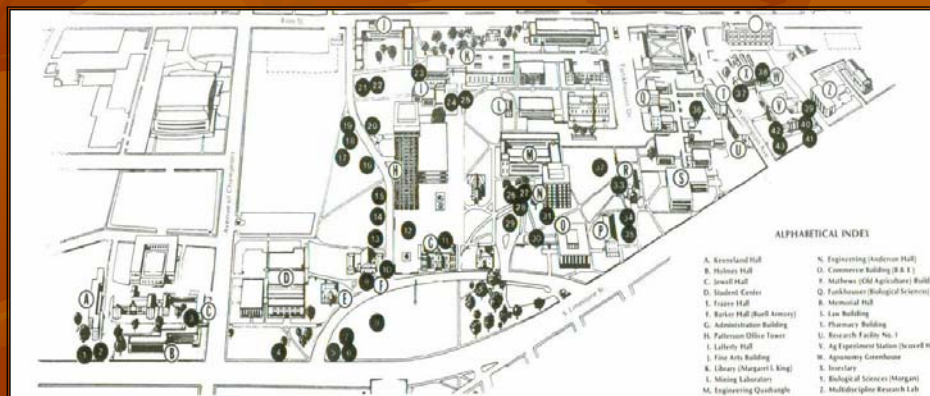
- Update the original native tree trail that was created around 1980
- Reasons for updating:
 - Campus has changed dramatically since 1980
 - Some trees may no longer be standing
 - New trees may be present to serve as representative species
 - New technology available to make maps

The Original Map



- 43 species
- No GPS capability for the map of trail
- No actual linear trail established
- No estimation of trail length
- No color

The Original Map cont...



Tools for Updating the Map

- CAD base maps
- Trimble GeoXM GPS unit
- ARC MAP software
- Digital camera



From: www.trimble.com



From: canondigitalcameras.net



From: www.geoforest.ch

GPS Point Collection

- PDOP less than 8
- 120 epochs at 4 second intervals
- Differential correction (unable to use in this project; .ssf files would not log)



Important Consideration for Trail Building

- Make sure you choose trees that are going to be present for a long time!
 - American chestnut that could have been included; but was fairly close to death
 - Basswood that we were going to include but it was cut down the second time we visited

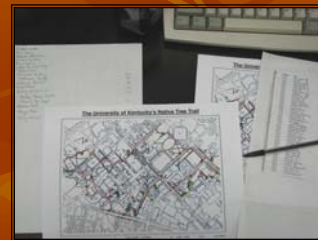
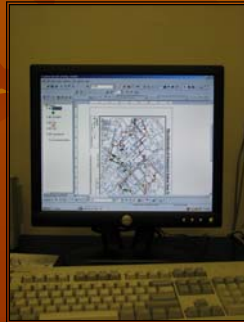


Building the Map

- Projecting the CAD file
- Projected Coordinate System: NAD 1983
State Plane Kentucky North FIPS 1601 Feet
- Projection: Lambert Conformal Conic
- Edited CAD files in ARC MAP to create base map
- Added new roads

Building the Map cont...

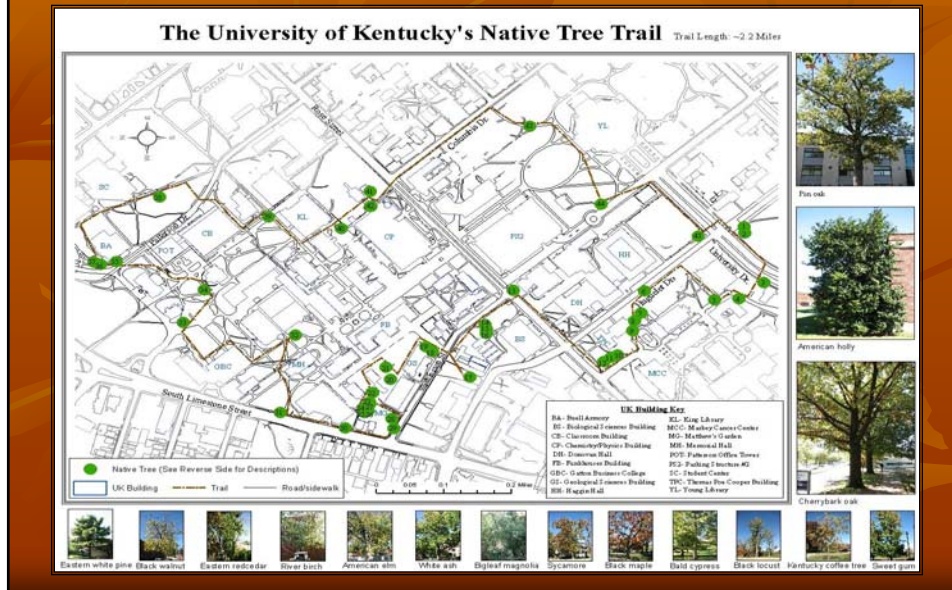
- Imported the shape file created by the Trimble GeoXM unit
- Designed the map



Tree Information

- Common name
- Latin name
- Habit
- Habitat
- Range
- Referenced from: Wharton, M.E., and Barbour R.W. Trees and Shrubs of Kentucky. Lexington: The University Press of Kentucky, 1973.

The Final Product



Conclusion

- Excellent learning opportunity for incorporating GPS, GIS, digital photography, research, and map design.
- Project successfully updated the UK Native Tree Trail
- We hope to continue this project by publishing an article in the UK Kernel.
- Possibility of online publication



Any Questions?

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