

2007

Merging GPS Data with High Spatial Resolution Multispectral Imagery: An Urban Recreation Case Study

Daniel Unger

Arthur Temple College of Forestry and Agriculture, Stephen F. Austin State University

David Kulhavy

Arthur Temple College of Forestry and Agriculture, Stephen F. Austin State University, dkulhavy@sfasu.edu

Jerome E. Benson II

Follow this and additional works at: <http://scholarworks.sfasu.edu/spatialsci>

 Part of the [Geographic Information Sciences Commons](#), [Leisure Studies Commons](#), [Remote Sensing Commons](#), and the [Urban Studies and Planning Commons](#)

Tell us how this article helped you.

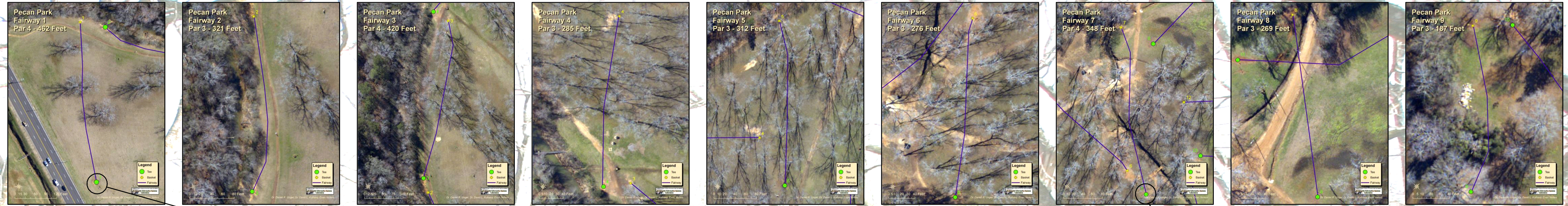
Recommended Citation

Unger, Daniel; Kulhavy, David; and Benson, Jerome E. II, "Merging GPS Data with High Spatial Resolution Multispectral Imagery: An Urban Recreation Case Study" (2007). *Faculty Publications*. Paper 9.

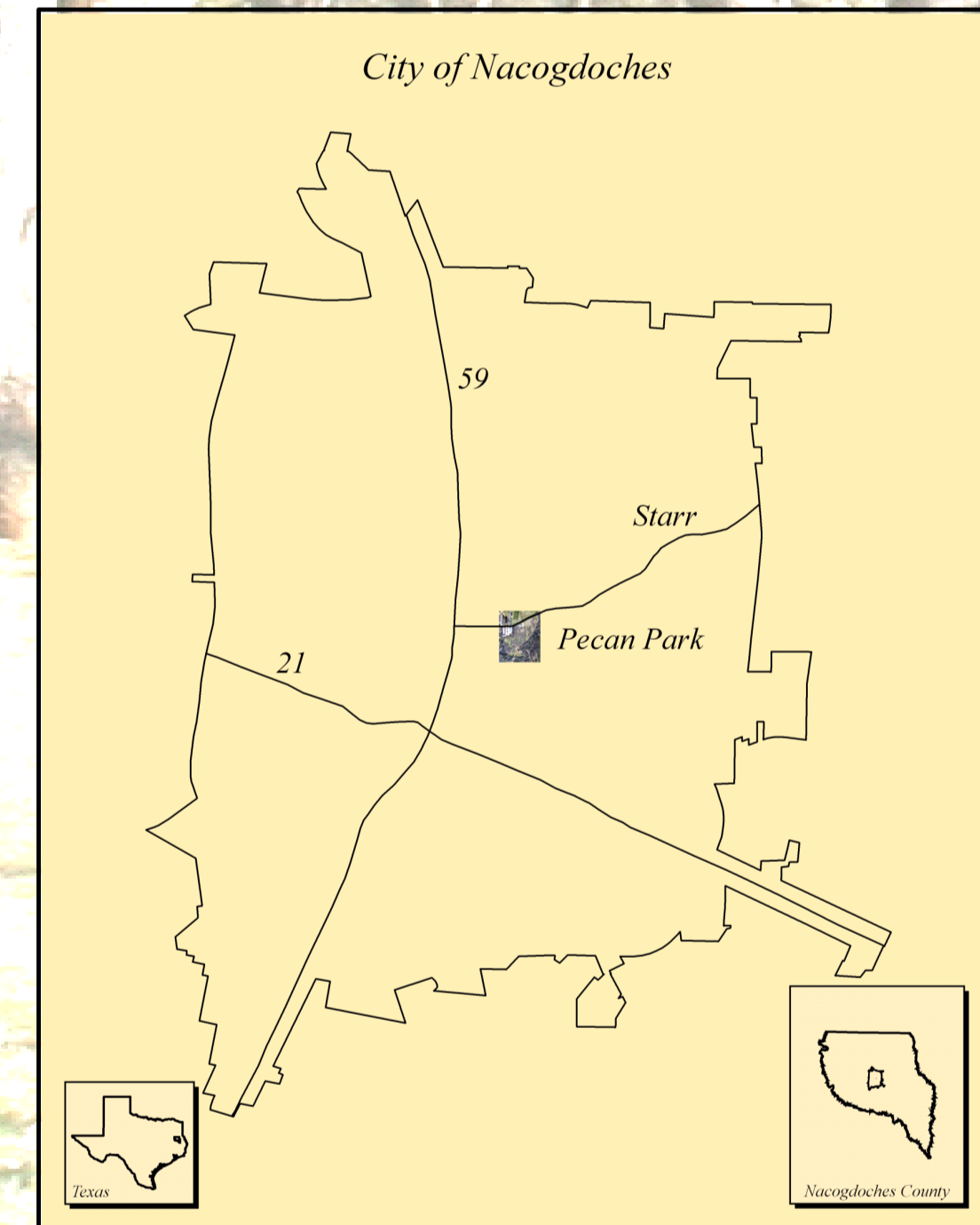
<http://scholarworks.sfasu.edu/spatialsci/9>

Merging GPS Data with High Spatial Resolution Multispectral Imagery: An Urban Recreation Case Study

Dr. Daniel R. Unger, Associate Professor; Dr. David L. Kulhavy, Professor; Jerome E. Benson II, Research Assistant
 Arthur Temple College of Forestry and Agriculture, Stephen F. Austin State University, Nacogdoches, Texas 75962



In 1992 a disc golf course was created by Alpha Phi Omega, Nu Sigma Chapter of Stephen F. Austin State University within Pecan Park in the city of Nacogdoches, Texas. Using constructs from Landscape Ecology, in cluding structure, function and change within a land mosaic provided the basis for establishment of the course. The addition of the disc golf course modified the use of the park promoting cultural cohesion among the disc golf enthusiasts. To aid the recreational enjoyment of golf participants, vector maps of each fairway were created when the disc course was developed and located at the start of each hole. In the fall of 2006, with the advent of high spatial resolution multispectral digital imagery, 6 inch spatial resolution multispectral imagery were used as a base map to create fine detail maps representing each disc golf basket and tee with GPS collected fairway data. A kiosk map representing the entire course was created so each participant could orient themself prior to playing each round of disc golf. By incorporating high spatial resolution imagery with GPS collected fairway locations, and using spatial analysis to calculate the absolute distance from a golf tee to each respective basket, we were able enhance the recreational and educational enjoyment of each golf participant.



Fairway 1



Front Nine



Fairway 7

Fairway 12



Fairway 11



Understanding the key flows and movements among landscapes permits us to search for an optimum spatial arrangement (R. T. T. Forman, Land Mosaics, p. 26).

The Geographic Information System is an excellent way to store and retrieve diverse accumulating land-use information (R. T. T. Forman, Land Mosaics, p. 34).

Planning and management must focus on both the grain of the landscape and the grain response of the inhabitants (R. T. T. Forman, Land Mosaics, p. 11).

Fairway 15



Melding the concepts of landscape ecology with disc golf design broadens perspectives and introduces a terminology to designers facilitating landscape understanding. Course designers are responsible for directing disc golfers' "recreational circulation—where the movement itself, and the experience along the way, are the principle reasons for the activity" (Robertson 1995)...A well designed disc golf course fosters a sense of place in the homogeneity of an urban landscape.

It is at the human-scale, where nature and people are seen to interact daily, and where land planning, design, conservation, management, and policy must take place (R. T. T. Forman, Land Mosaics, p. 37).

To accelerate the use of ecology in design, planning, conservation, management, and policy, we must use...landscapes that balance and integrate natural processes and human activities (R. T. T. Forman, Land Mosaics, p. 14).

Designing a land that effectively meshes ecological integrity with basic human needs over human generations will only be accomplished with a healthy dose of landscape ecology at the core (R. T. T. Forman, Land Mosaics, p. 38).

Back Nine

