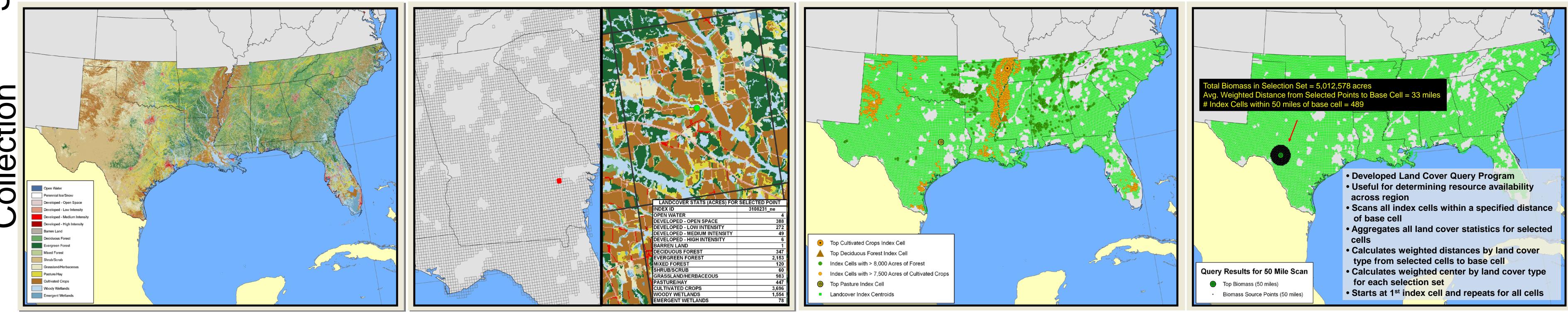


# Potential Biofuel Resource Availability and Distribution Across the Southeastern United States



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# Understand the trade-offs between the geographical availability of feedstock, the distribution infrastructure and the optimal number, size and location of processing facilities



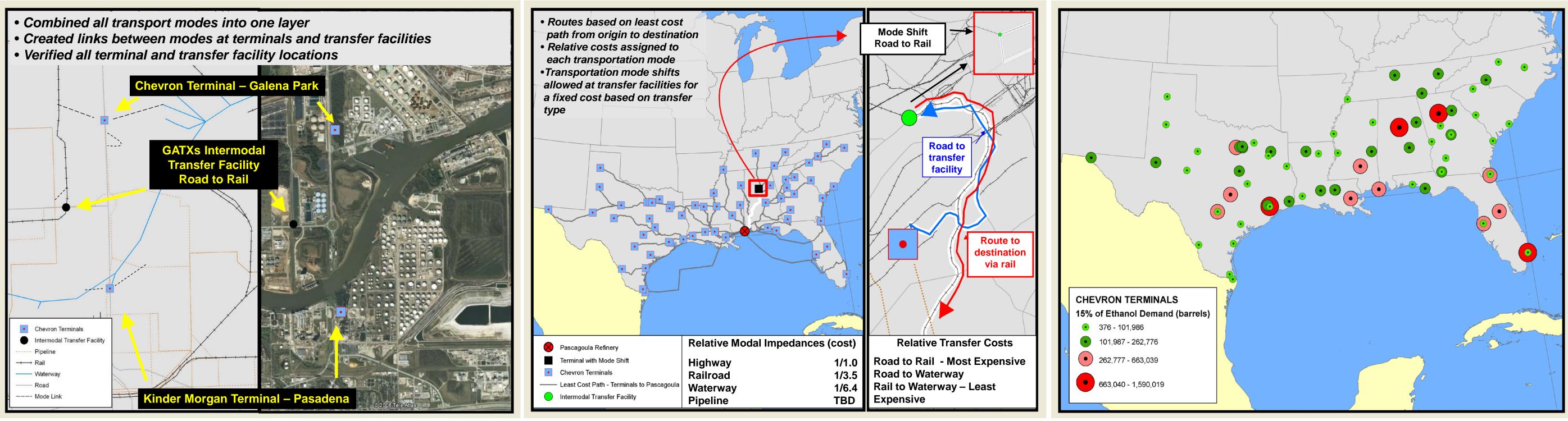
### Landcover derived from satellite imagery

# Combination of: National Highway Planning Network • Navigable Waterways • US Railroad Network • Pennwell Pipelines Intermodal Transfer Facilities • Chevron Refined Product Terminals Distr ulti-Modal Network Chevron Terminals Transfer Facility

Multi-modal Transportation Network Inputs

1. Scan database for evergreen site with highest amount of biomass within 50 miles of any index cell. processing)  $\mathbf{O}$  Top Evergreen Site for 50 Mile Scan Index Cells within 50 Miles of Top EG Site Landcover Index Centroids . Calculate routes from selected landcover cells to - EG Routes (selected cells to center) proposed facility site EG Routes Detailed (selected cells to center Û Ō V and and a property of Highways and the fifth the for roads South of the states the former of the second No XI ANN st to the CHEVRON TERMINALS 15% of Ethanol Demand (Gallons) • 15,794 - 4,283,395 000p0g00000p0000p0000g0000 ............................... 4,283,396 - 11,036,592 ................................... My out had a few of a few of • 11,036,593 - 27,847,625 to the state of the second The state of the state of and 11 FAI & A ME & AFreen 27,847,626 - 66,780,794 sabbabbb Rok des ............. Average weighted distance from selected cells to center point =  $\sim$ 32 miles for both road types

> Identification and Transportation of Biomass from Collection Point to Potential Facility



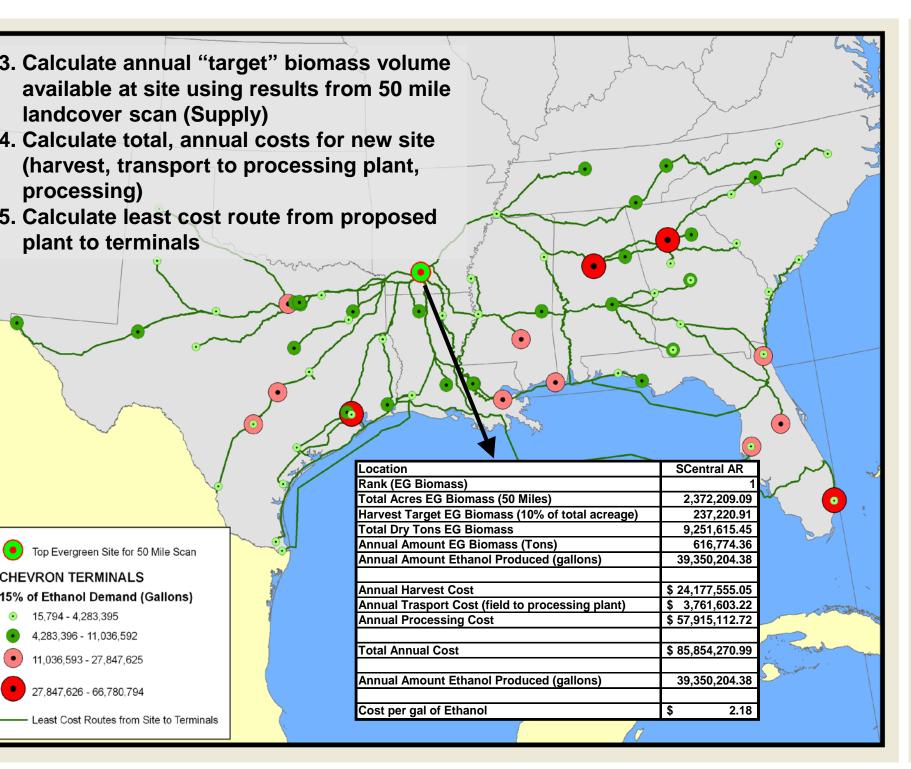




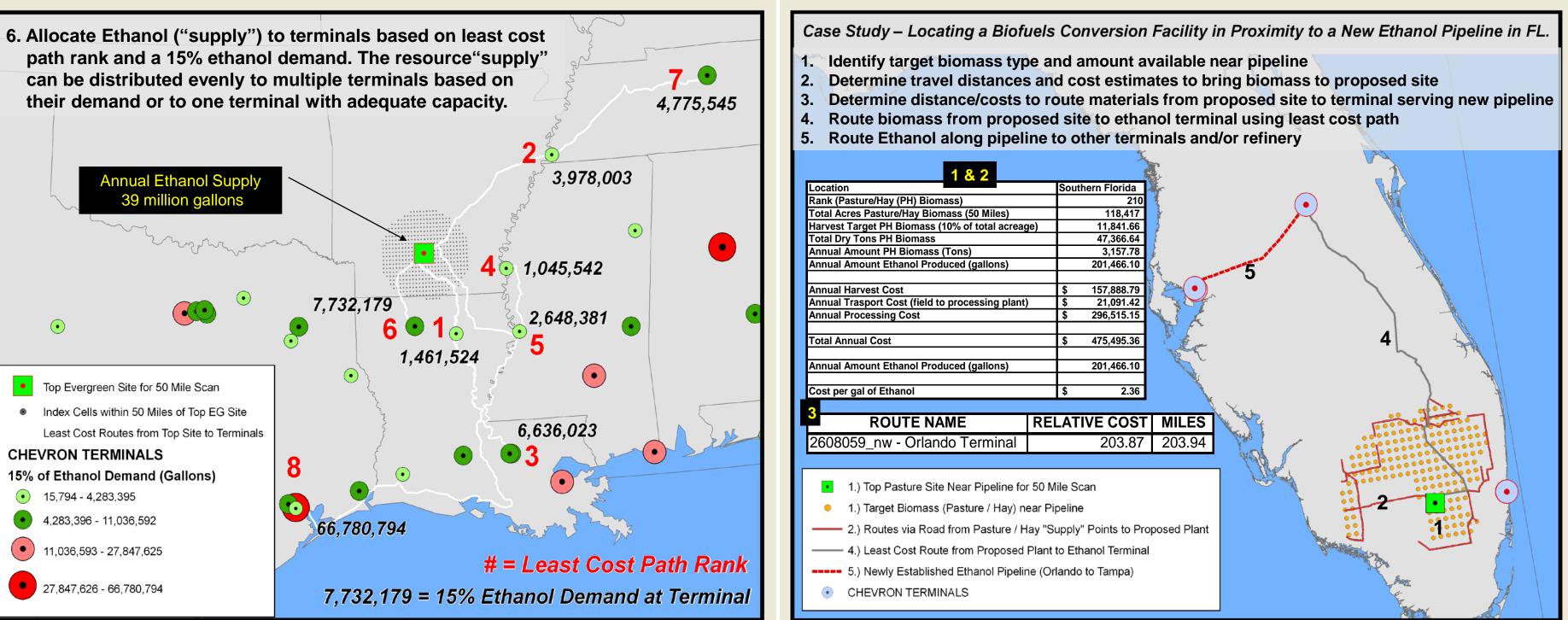
Project Team: M. Realff, T. Giarrusso, S. Muthukumar

Resource database created by indexing landcover

Creating the Multi-modal Transportation Network



Distribution of Biomass from Potential Facility to All Chevron Terminals



### Query the Landcover Index Database

#### Modeling the Distribution of Biomass Using Least Cost Routing

Ethanol Demand Based Allocation of Biomass from Potential Facility to Chevron Terminals

### Scanning the region - automated landcover queries

#### Ethanol Demand Across Chevron Terminals

Locating a Biofuel Conversion Facility in Proximity to a New Ethanol Pipeline in Florida

