# Challenges and Possibilities in the Spatial Portrayal of "Urban Use" in Endangered Species Risk Assessment on Pesticides

SETAC Portland, 2010

November 8th, 2:20 pm

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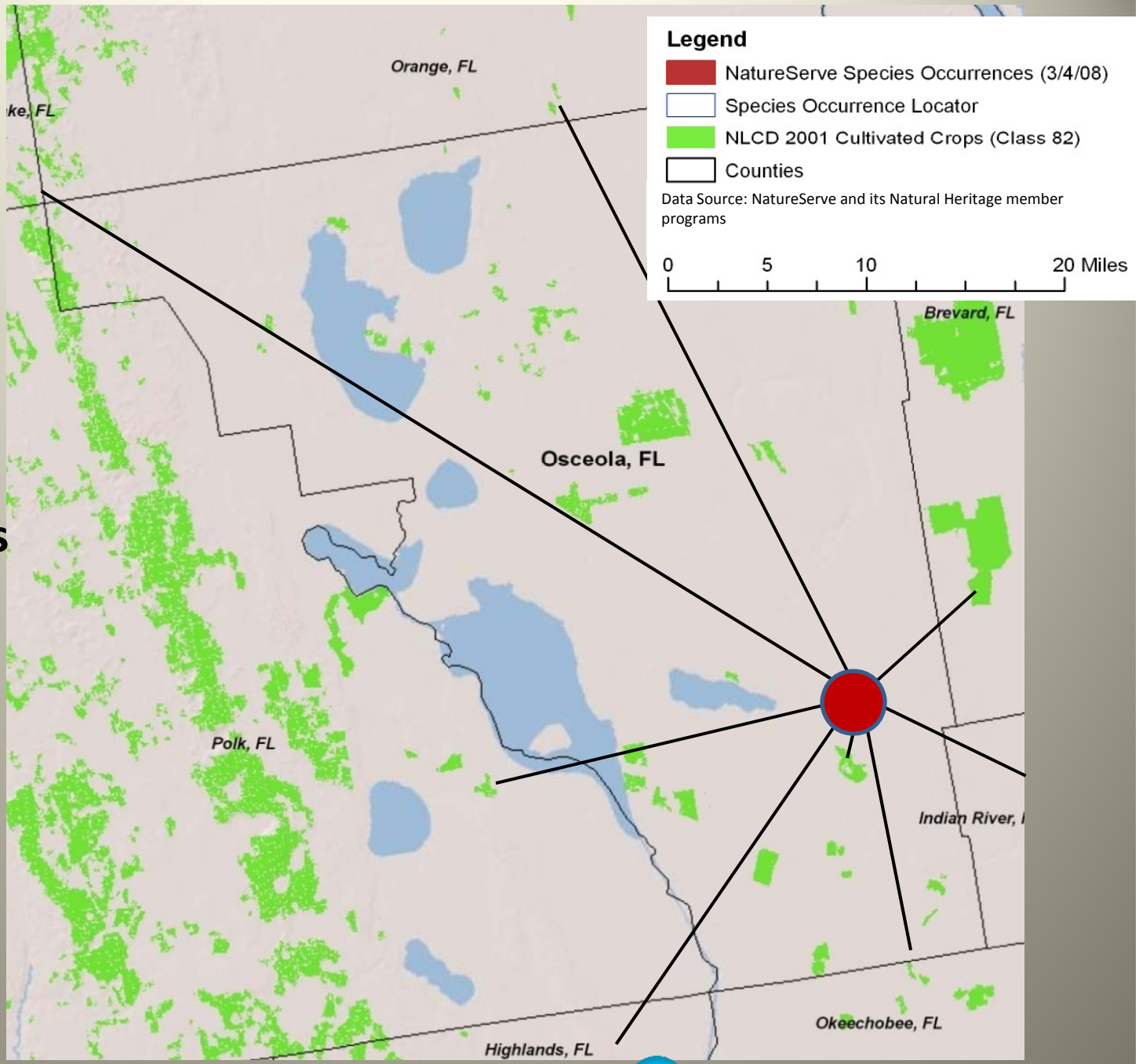
Compliance Services International;
Tilghman Hall, Bayer CropScience

**Defining proximity of species locations to potential agricultural use is achievable**

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# Challenges to defining urban and urbanization

- What defines “urban”?

- Land use trend is towards *more* not *less* urbanization

http://www.farmland.org/resources/fote/default.asp

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# Challenges to defining potential exposure




- Wide variety of uses
- Very few urban pesticide use reporting/monitoring systems in place
- Retail sales data
- Trend is towards more judicious and selective use and increase in Integrated Pest Management programs

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# Even more challenges

- Small/specialized containers and delivery mechanisms
  - Localized applications and different technology than agricultural uses

http://www.gardenguides.com/insecticides

- Only licensed applicators can apply “Restricted Use” products

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# Land Cover Inventories

2001 Landsat subset scene



2001 Derived NLCD

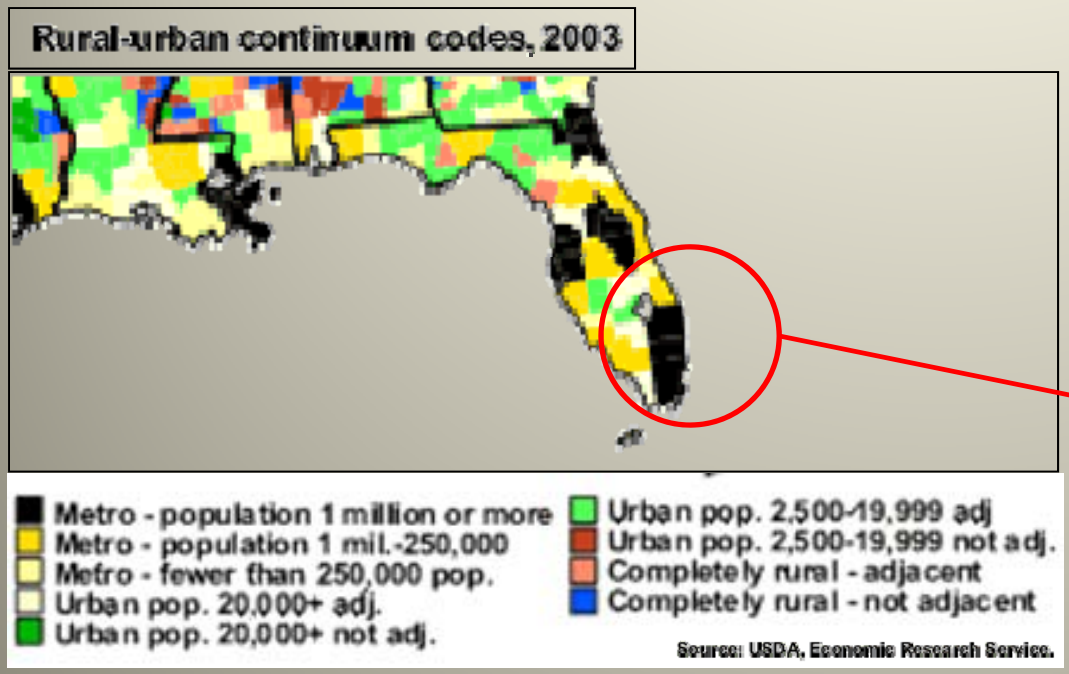
2006 Landsat subset scene



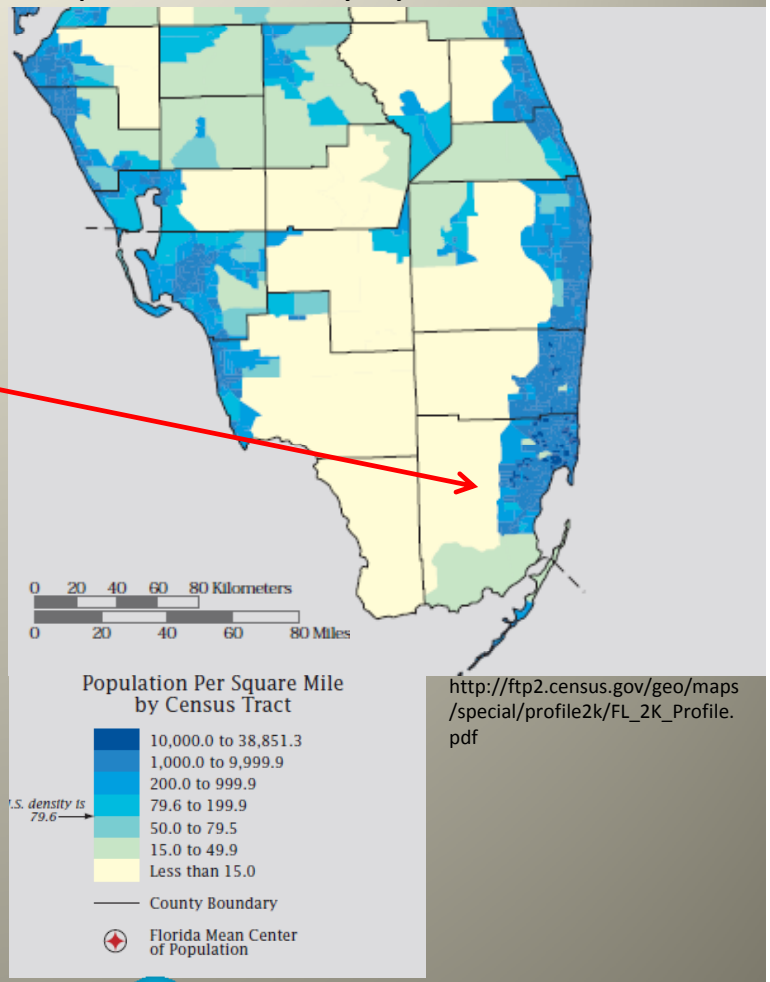
2006 Derived NLCD

Images taken from:
http://www.mrlc.gov/nlcd_update.php

# Population Density and Concentration




Population Density by Census Tract, 2000




http://ftp2.census.gov/geo/maps/special/profile2k/FL_2K_Profile.pdf

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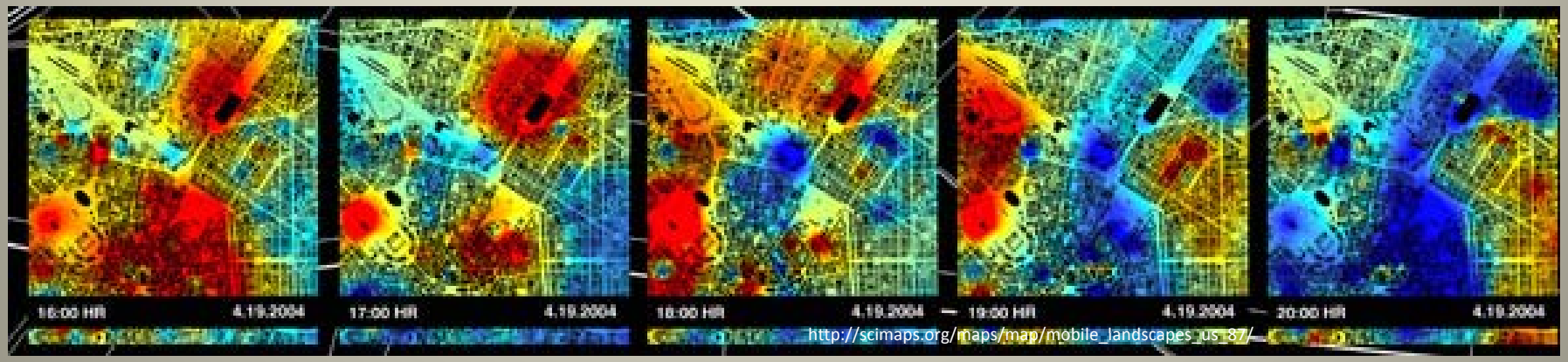
# Population Estimators

- Cell phone activity (Williams et al., 2006)

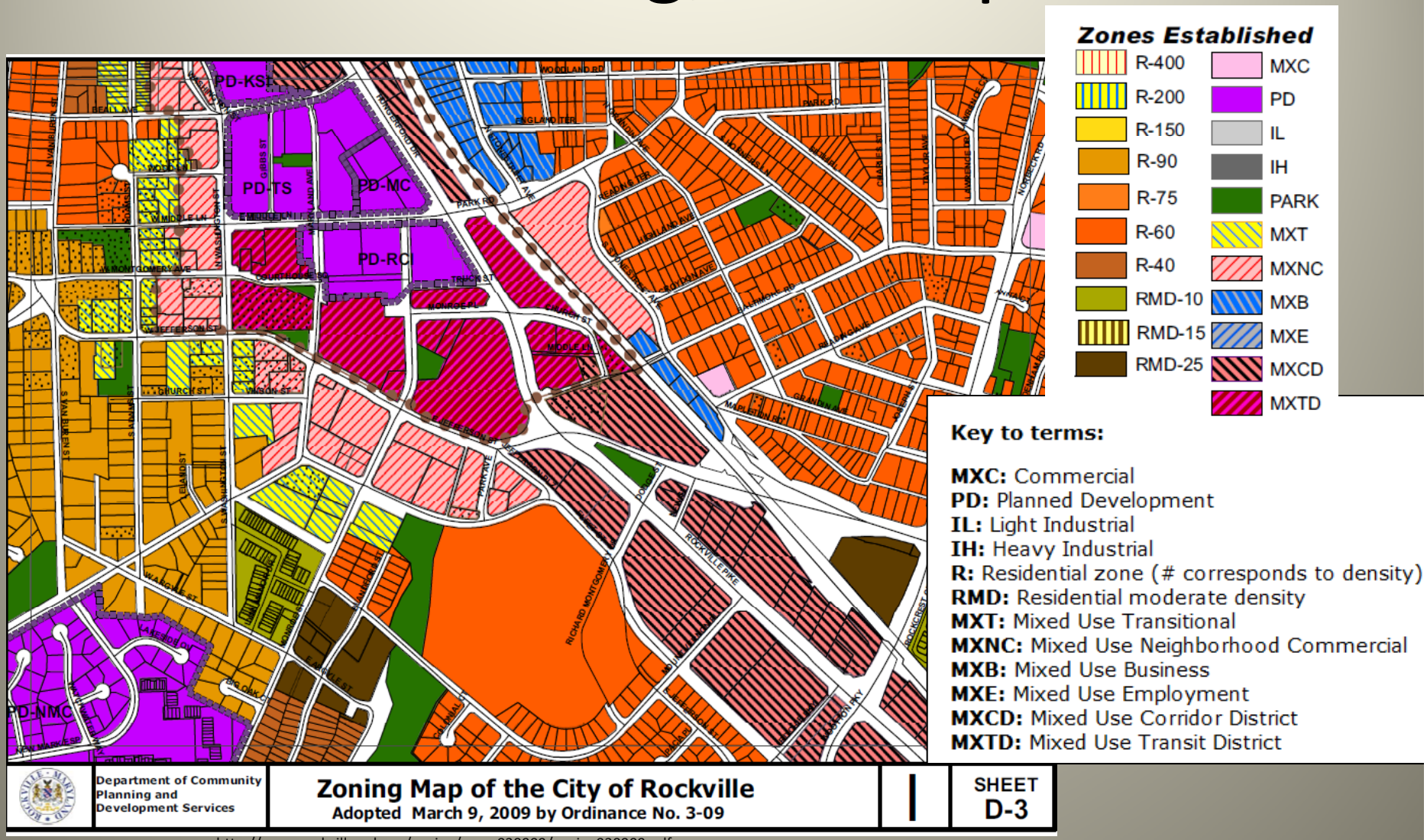


http://scimaps.org/maps/map/mobile_landscapes_us_87/

- Satellite images of city lights

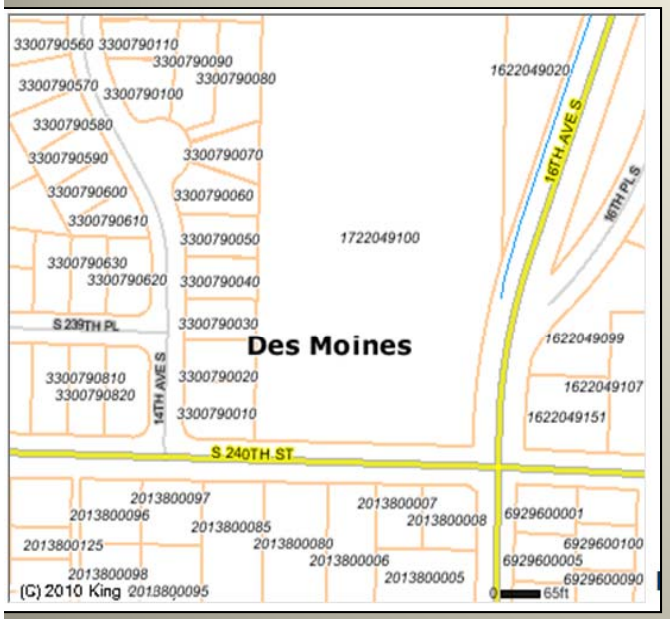

http://www.shimz.co.jp/english/theme/dream/images/geo_img001.jpg

# Local Planning/Development




http://www.rockvillemd.gov/zoning/maps030909/zoning030909.pdf

# Local Planning/Development




http://www5.kingcounty.gov/parcelviewer/viewer/kingcounty/viewer.asp

BUILDING PERMIT

Town of Dryden, New York

This is to Certify That a Building Permit has been issued to

Operation

Address

Owner of Land

Date of Permit

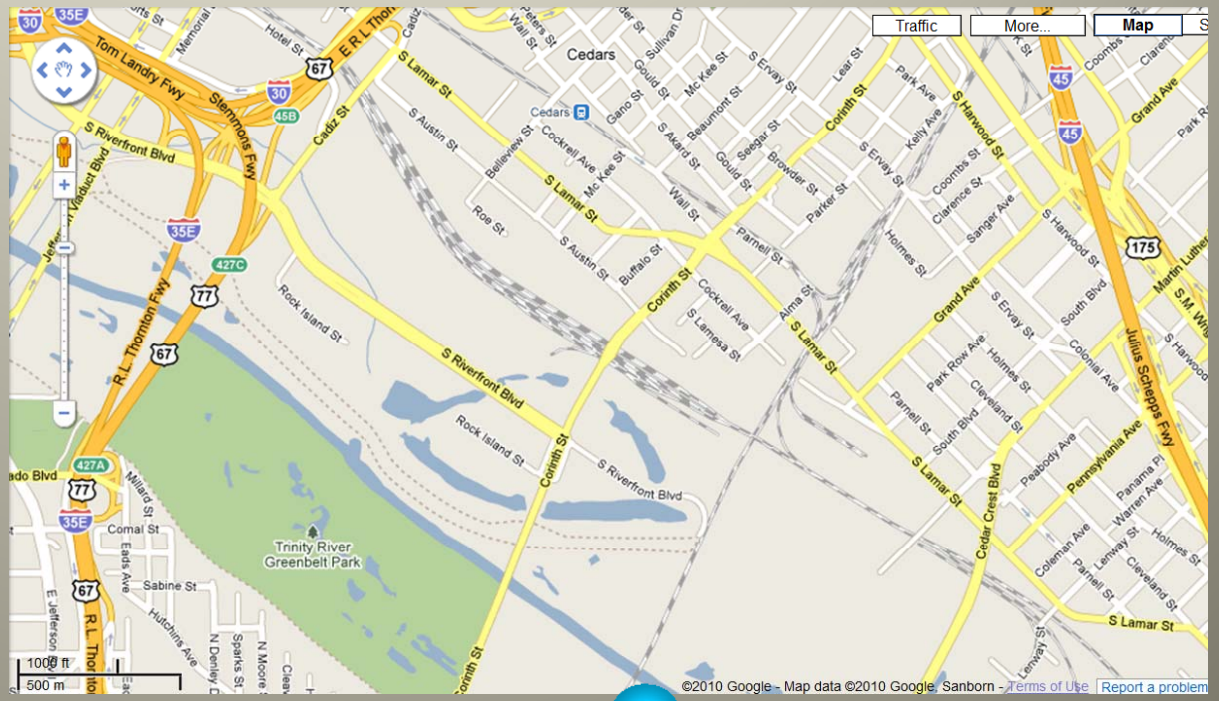
Expiration

Special

Signed

ZONING OFFICER

http://aesop.rutgers.edu/~horteng/conspics.htm

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# Model Inputs

- Container size and application scenarios
- Movement into the environment
  - Pathways
  - Barriers
- Location-specific codes/ordinances
  - Ex. City of Seattle's Stormwater Code

http://www.go-explore-trans.org/2008/apr-may/pervious.cfm

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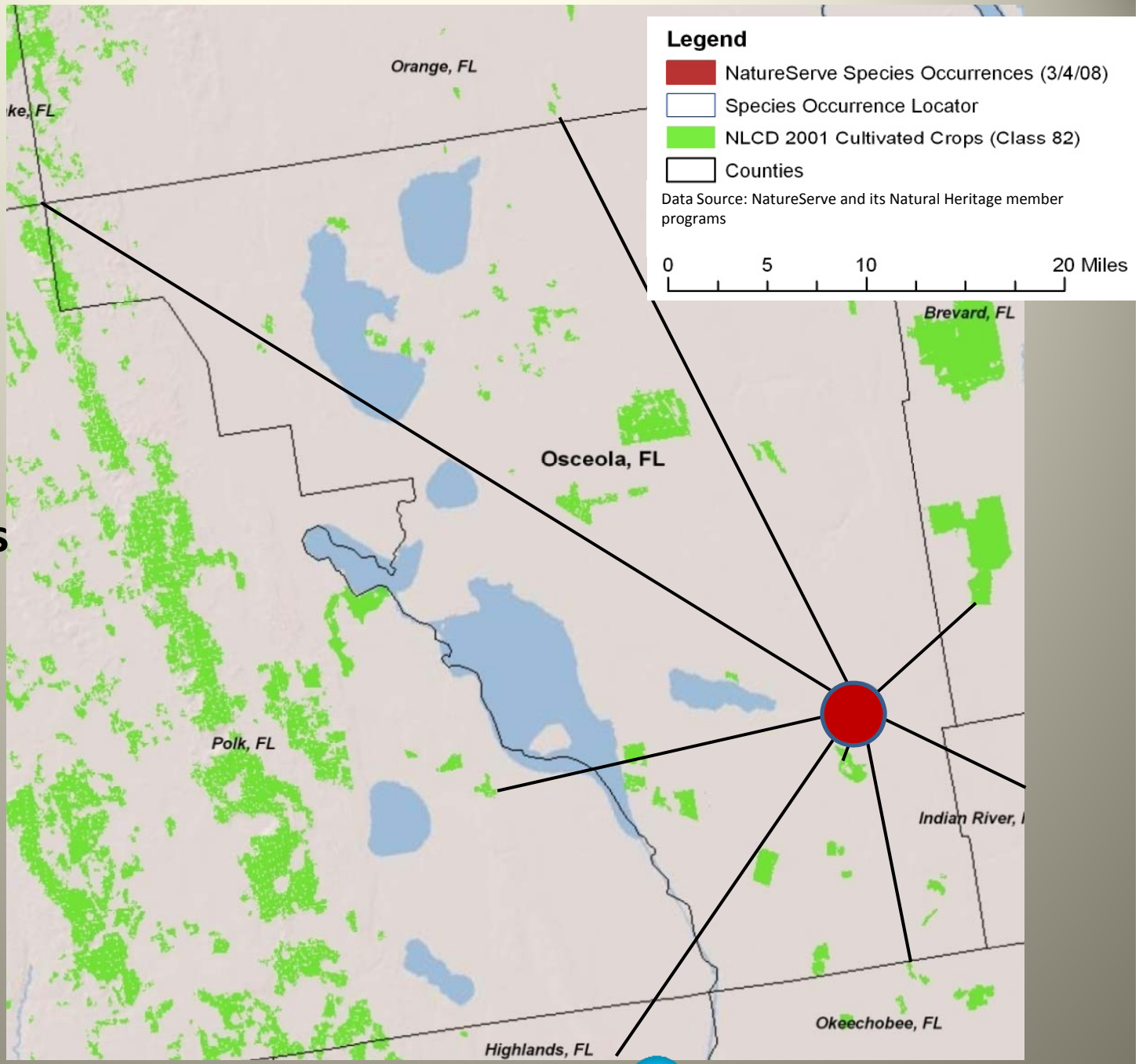


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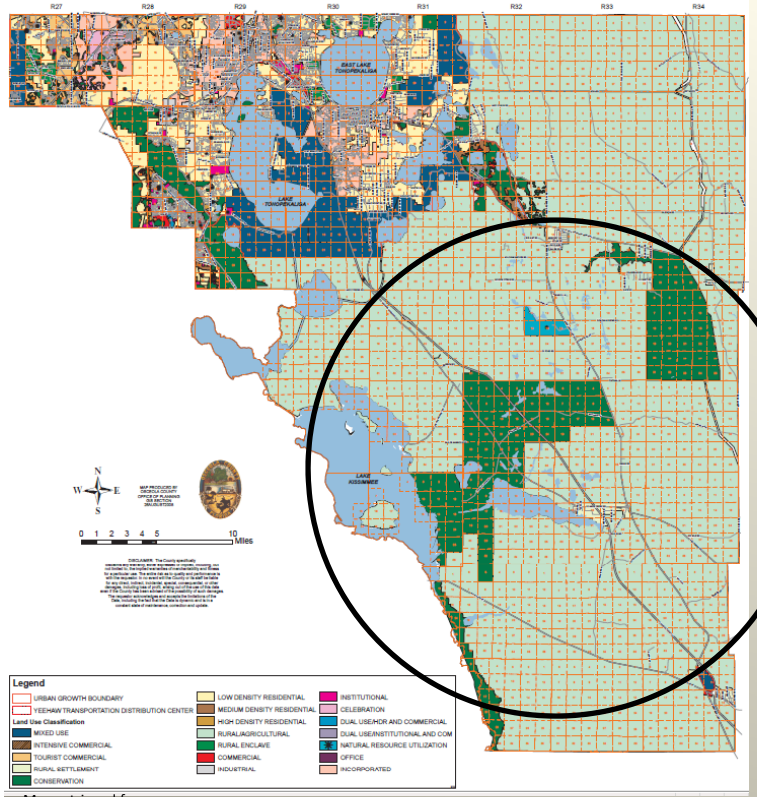
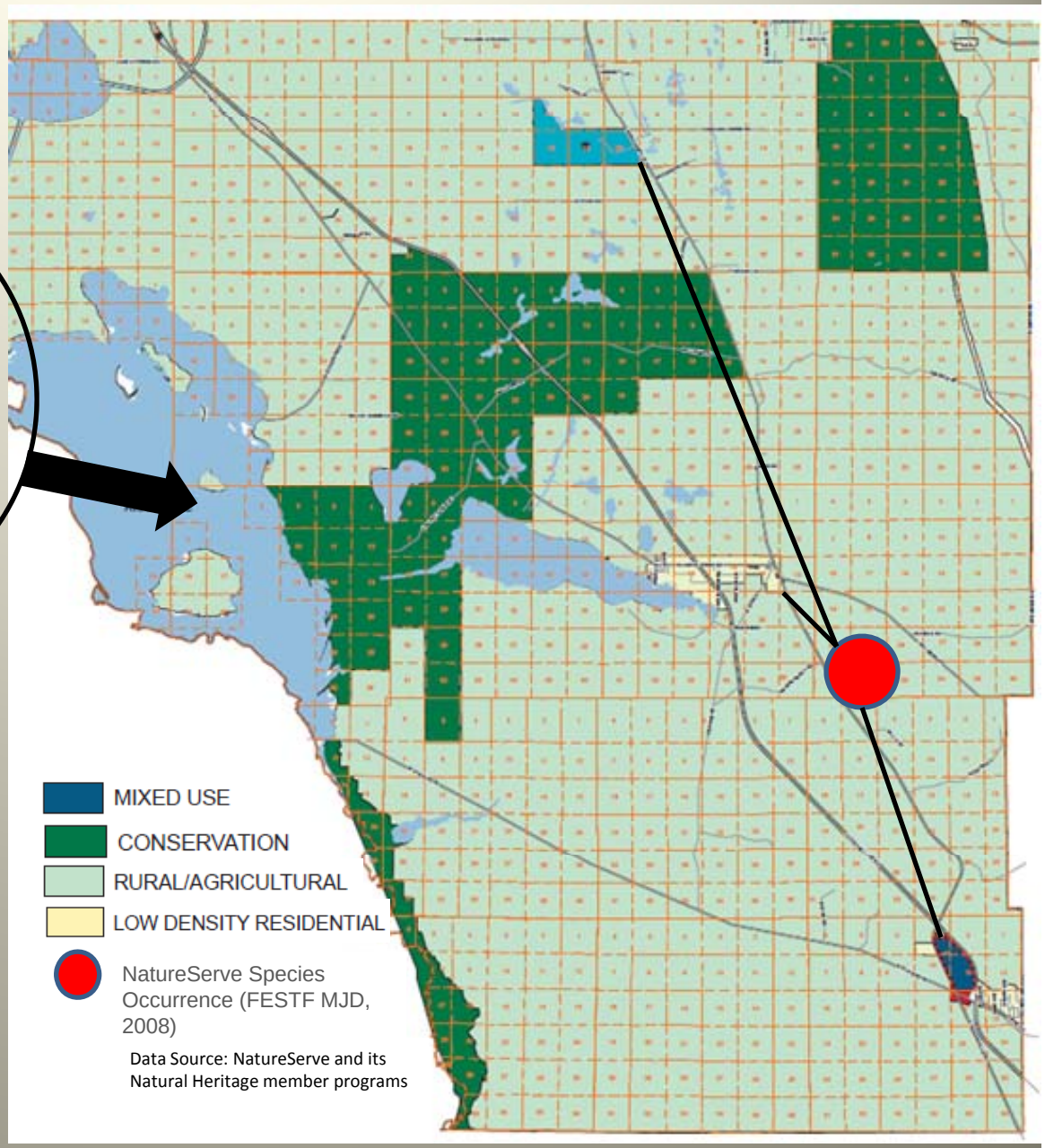
## Osceola County Future Land Use Map 1A




Map retrieved from:
http://www.osceola.org/Files/Websites/GIS/00000000_Imported/FLU_County_Map1A_STR.pdf




# Defining proximity of species locations to potential urban use is achievable

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