# Prioritizing Places

# An Application of Arc GIS 9.1 Network Analyst to inform recreation planning in Wisconsin

#### Presentation to the ESRI Wisconsin Users Group November 11, 2005



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Applied Population Laboratory

Jeff Prey and John Pohlman of the WI Dept. of Natural Resources

#### Background

#### The Applied Population Lab

- Social and economic data
- Geo-demographic analysis

# The Recreation Planning Issue What is SCORP? Identify places for acquisition and development

Starting point: Land Legacy Place Study

#### Land Legacy Places

Goal: Prioritize Legacy Places across state and within each SCORP Region for acquisition and development

## Methods: 6 Components

#### 1. Number of potential visitors

- How many people live within an hour's drive?
- Population/development pressure
  - How much growth is projected for the area?

#### 3. Cost of land for acquisition

What is the value of undeveloped land?

#### 4. Conservation significance

Is the Place important in meeting conservation needs?

#### 5. Recreation potential

Is the place a "neat" place to recreate?

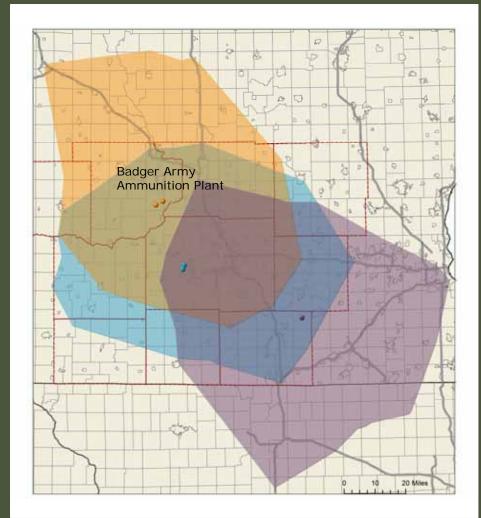
#### 6. Recreation use

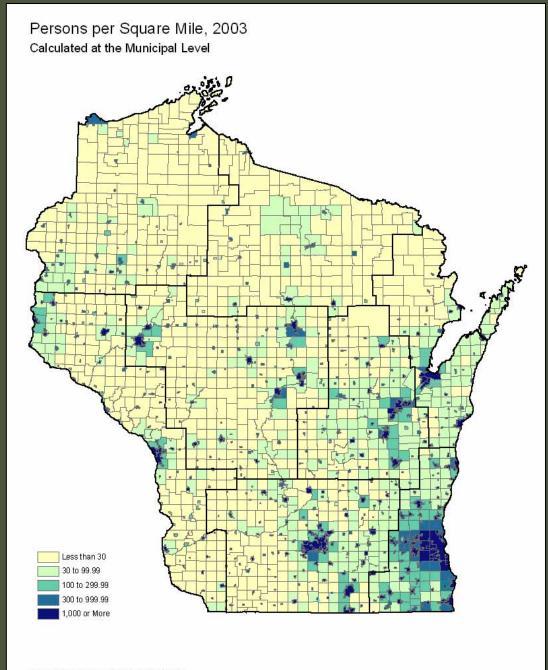
Does the place provide access for recreation activities that are in high demand?

#### 1- Potential Visitors:

#### 1-hour Drive?

- Roads data & Network Analyst
- MCDs that intersect buffers
- Sum 2003 population estimates for MCDs



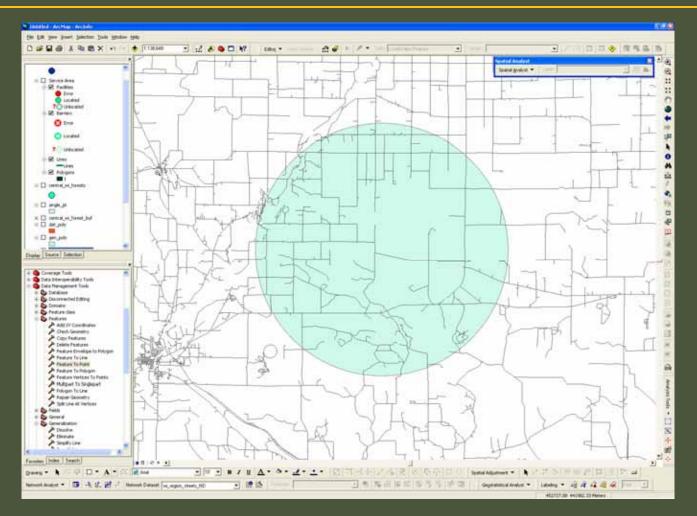


Sources: Wisconsin DOA 2005, TIGER 2003

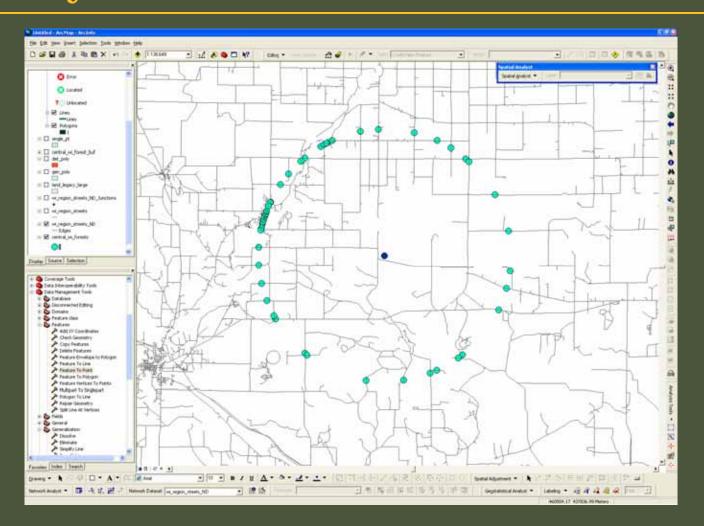
# Network Analyst – ArcView 3.3 v ArcGIS 9.1

Methods and Comparisons

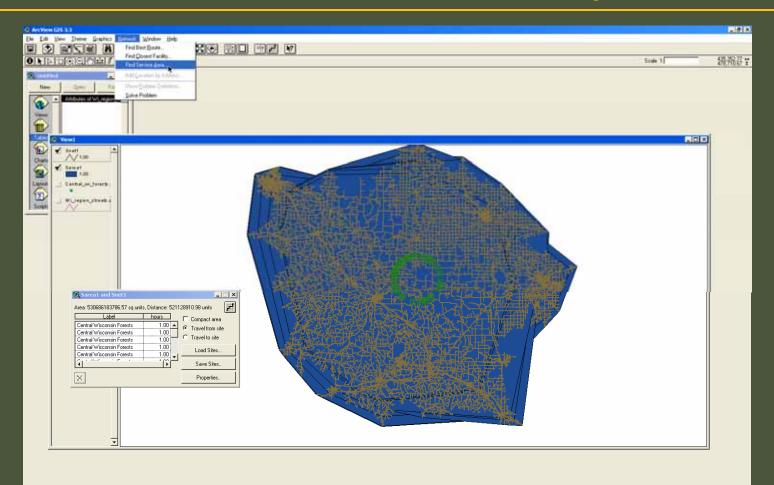
## Starting Land Legacy Point



### Facility Creation



### ArcView 3.3 Network Analyst



Creates service area and service network result themes for the active line theme

### Network Cost Field (AV3.3)

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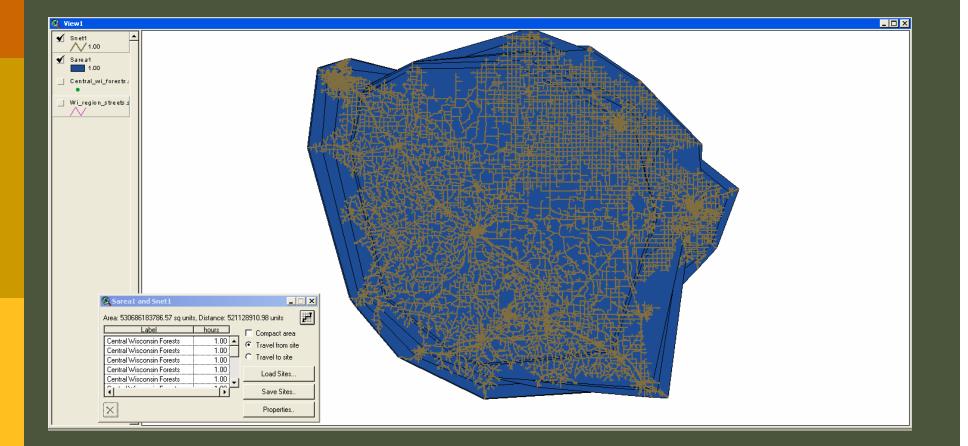
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#### ArcView 3.3 Result



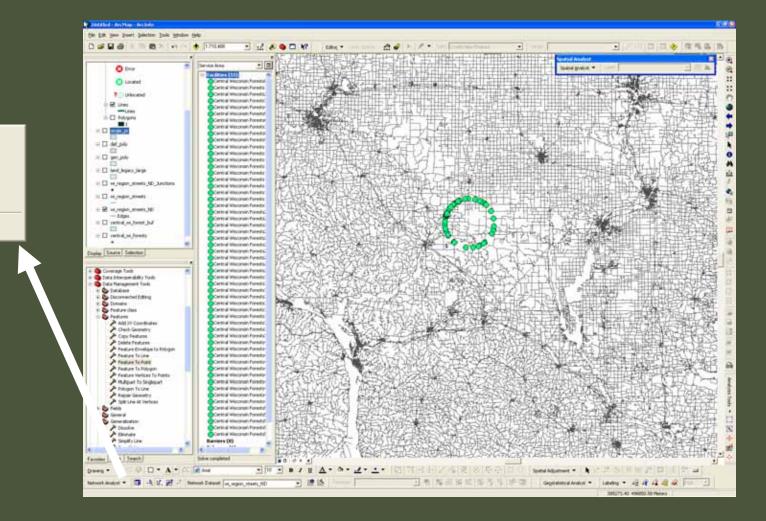
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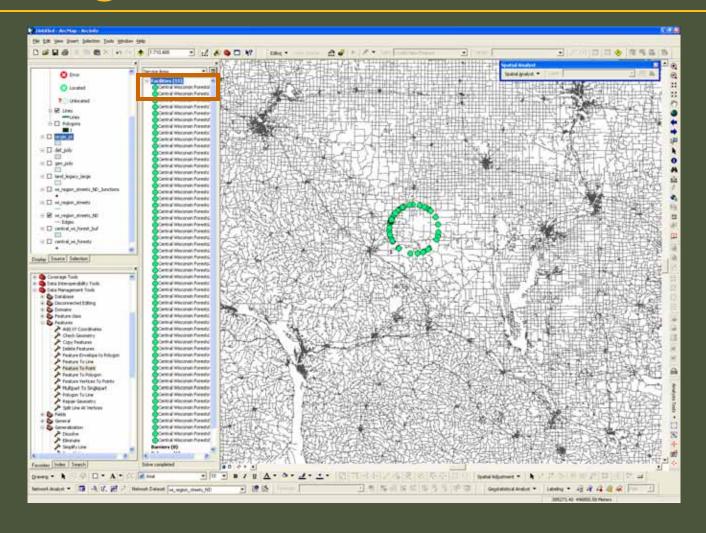
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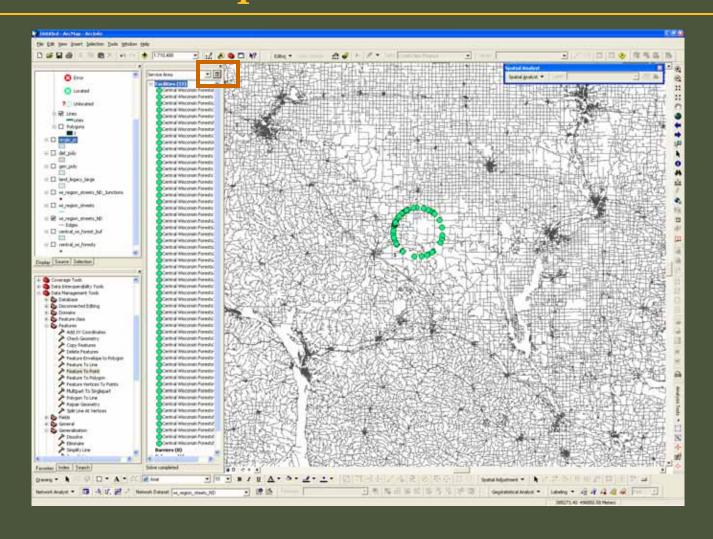
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Options...

### Loading Facilities



#### **Network Properties**



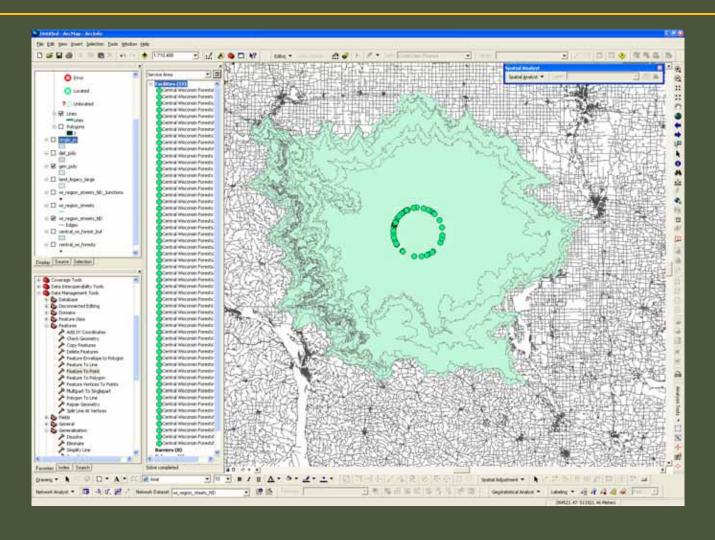
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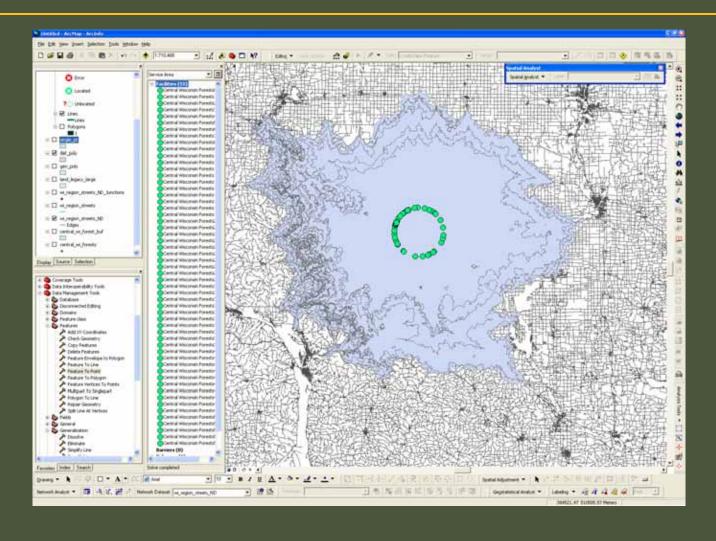
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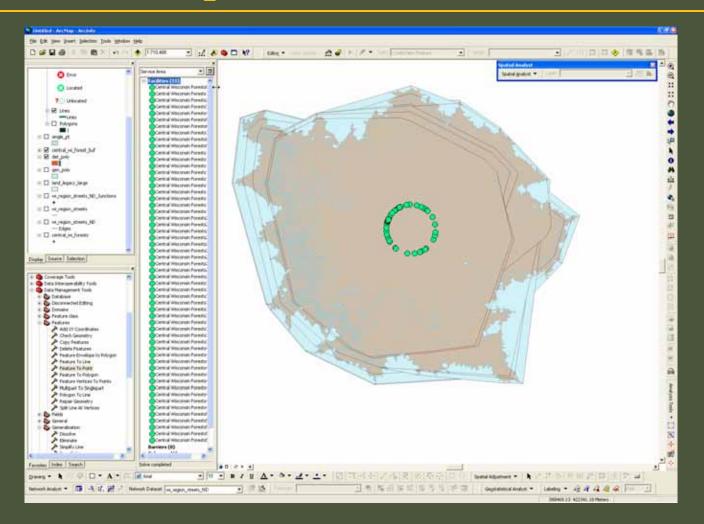
#### **Generalized Results**



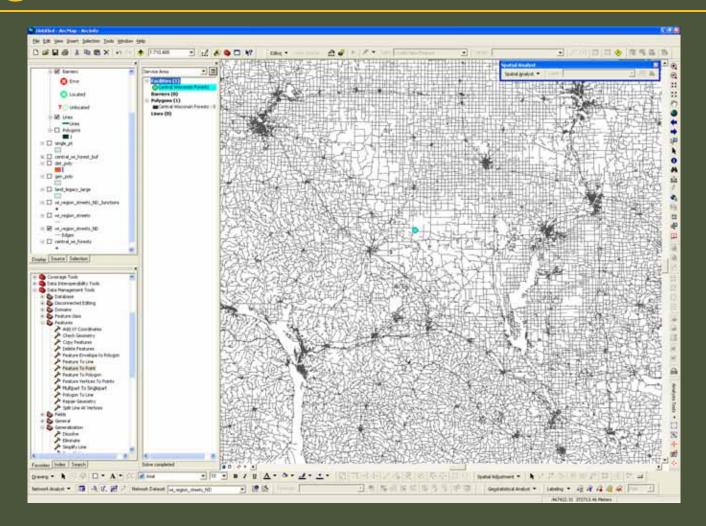
#### **Detailed Results**



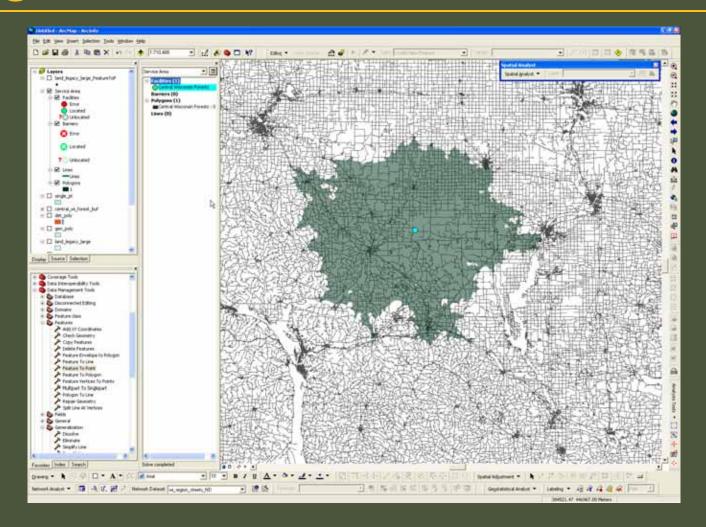
#### Buffer Comparison



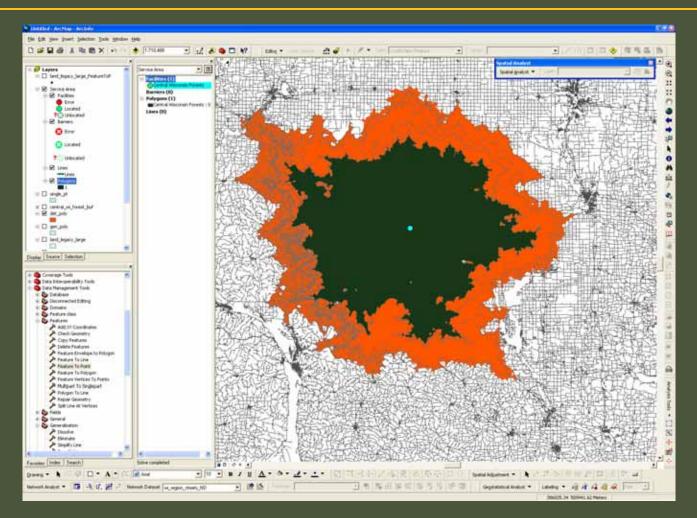
### Single Point Buffer



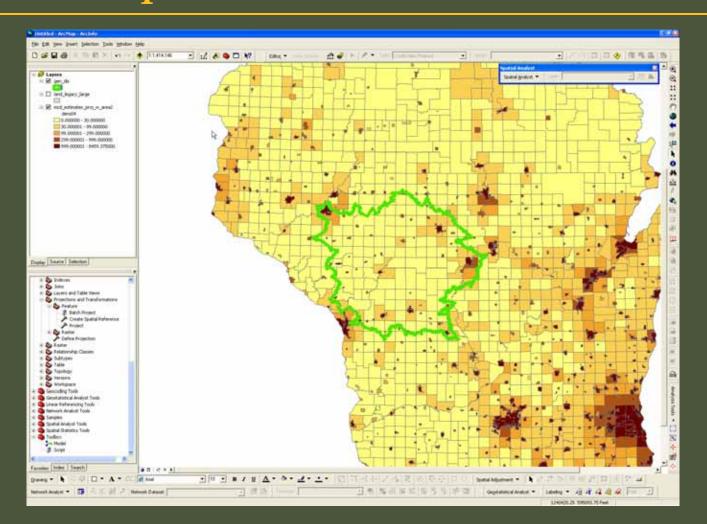
### Single Point Results



### Single Point v Multiple Point



### MCD Population

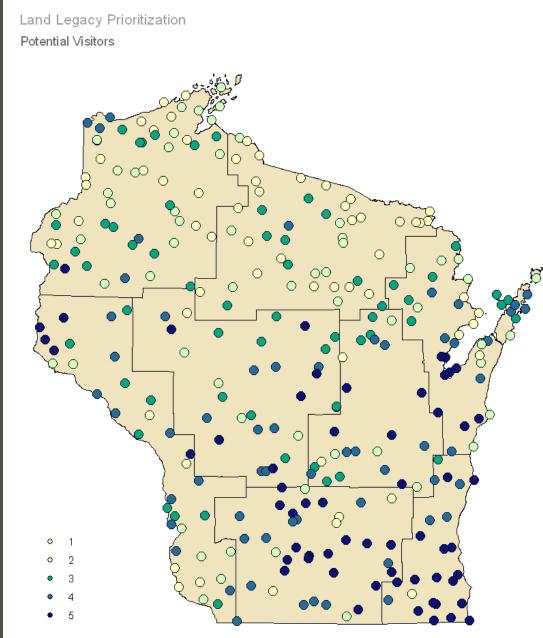


#### Time Comparison

- ArcView 3.3 Time 7 min 48 sec
- Generalized ArcGIS 9.1 Time 7 min 47 sec
- Detailed ArcGIS 9.1 Time 21 min 48 sec

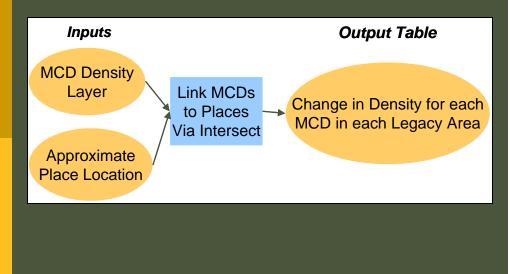
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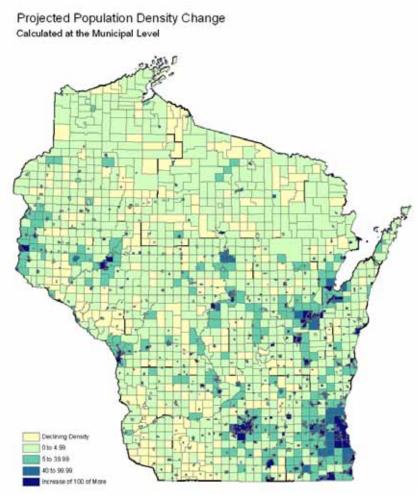
Batch RunBugsBridges



#### **2-** Population Pressure

 Projected population density change
 Pden 2015 – Pden '04

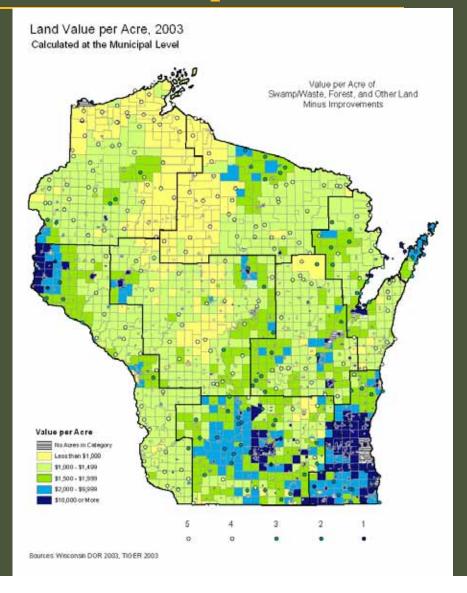




Sources: Wilconsin DOA 2005, TIGER 2003

#### 3- Cost of Land What is value per acre of undeveloped land?

- Dept. of Revenue (2003)
- Undeveloped Land
- MCD average value
- Legacy Place average value

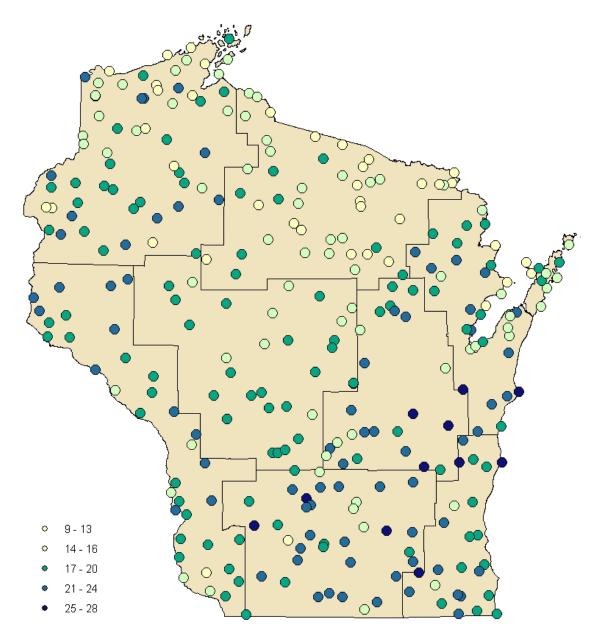


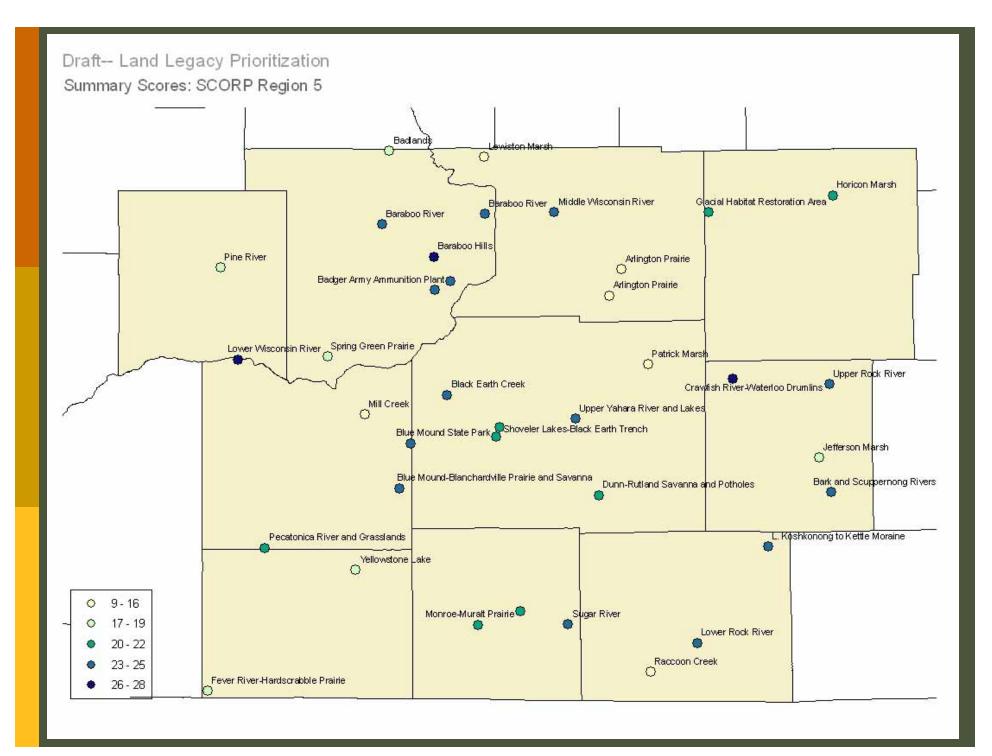
#### Components 4, 5, & 6: Conservation & Recreation

- Conservation Significance
- Recreation Potential
- Use-specific recreation
  - FS Survey
  - Evaluate each place for how they meet need

**Results: Potential Visitors Population Pressure** + Land Value +**Conservation Sig** +**Recreation Potential** + **Use-Specific Rec Summary Score** 

Land Legacy Prioritization Summary Scores





#### Impact of Study

SCORP plan using results to promote places for further investigation into acquisition and development

Release scheduled for Fall 2006

#### Only a building block:

- Match with Supply
- Funds
- Qualitative evaluation of places
- Public input
- Local officials input