



## Esri Forestry GIS Conference

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# SpatialLABS™

Mike Livingston, Managing Editor



**We asked educators ...**

**“What do you most  
desire from a  
publisher?”**

## We heard ...

- Resources that teach spatial applications
- Problem solving vs. “buttonology”
- Discipline-relevant content
- Variety of topics
- Flexible content
- Low cost



# SpatialLABS™ – Activities for spatial inquiry

- **Collection of college-level lab assignments**
- **Promoting spatial reasoning**
- **Examining real issues**
  - Dwindling resources
  - Environmental equity
  - Global politics
  - ... more
- **Professionally edited, peer reviewed**
- **Updated annually**





**“Resources that teach  
spatial applications”**

# SpatialLABS™ promote ...

- **Spatial concepts and analysis**
  - **Spatial relationships**
  - **Measurement**
  - **Spatial structures**
  - **Dynamics**
  - **Representation**
  - **Transformations**
  - **Spatial inference**

*Source: [teachspatial.org](http://teachspatial.org)*

- **What's not here?** **Technology**



**“Discipline-relevant  
content”**

# Question-driven research

- **Why should I care about the stagnant pond a quarter mile away?**
- **What's the correlation between ethnicity and exposure to industrial toxins?**
- **How might visibility have affected political boundaries in an ancient African civilization?**
- **What's the risk and accessibility to Search and Rescue teams in a forested area?**
- **Is there a spatial pattern to poverty in Sri Lanka?**



# SpatiaLABS™ 2012 Edition

- Fifty-six lab activities –
- Twenty unrelated topics
- Two course sets
  - Business (19 labs)
  - Forestry (16 labs)
  - ... more to come

## Predicting West Nile Virus Outbreaks

—by Jeff Blumenthal

### Introduction

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#### Problem

What's the likelihood of a West Nile virus outbreak where you live?

Since the 1930s, West Nile virus (WNV) has been the cause of human asymptomatic infection and fevers in Africa, west Asia, and the Middle East (Center for Integration of Natural Disaster Information 2001). In 1999, outbreaks of WNV encephalitis (inflammation of the brain) and other febrile illnesses were first reported in the Western Hemisphere in the New York City metropolitan area. Between 1999 and 2001, 83 cases of West Nile illness in humans were reported, and nine people died. In 2001, the first U.S. cases of WNV encephalitis outside the New York City metro area occurred (Center for Integration of Natural Disaster Information 2001). How does this disease propagate? Are there any triggers to this propagation?

WNV is transmitted to humans through mosquito bites. Mosquitoes become infected by feeding on infected birds that have high levels of WNV in their blood. Infected mosquitoes can then transmit WNV when they feed on humans or other mammals. WNV is not transmitted from person to person, and there is no evidence that a person can get infected by handling live or dead infected birds (Center for Integration of Natural Disaster Information 2001). Humans get WNV through bites from infected mosquitoes, so areas that have high mosquito breeding activity are more likely areas for contracting WNV.

One of the factors linked to areas of high mosquito breeding and subsequent incidents of WNV is areas that exhibit a mild winter followed by a summer having a higher-than-normal number of days with a maximum temperature above 25 degrees Celsius (°C) (El Adlouni et al. 2007). A 5°C increase in mean maximum weekly temperature is also associated with a statistically significant 32-50

# Business course set – by Fred Miller

- 19 labs –
- Finding marketing opportunities
- Site selection
- Customer profiling, segmentation
- Sales territory design

## Customer Segmentation

*Targeting potential customers for sales growth*

—by Fred L. Miller

### Introduction

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#### Problem

*Living in the Green Lane*<sup>1</sup> is a three-store chain of green-lifestyle centers in the Minneapolis-St. Paul market area. Each store offers a comprehensive range of green products and services from modestly sized, strategically located retail centers, each of which exemplifies and demonstrates green-building techniques and living patterns. All three stores have been successful, and each has a large and growing Living Green Club loyalty program for its best customers.

Owners Janice Brown and Steven Best believe that the success of the *Living in the Green Lane* concept in Minneapolis-St. Paul underscores the general attractiveness of the business model. They wish to continue the company's growth with a combination of penetration and expansion strategies.

The penetration strategy will focus on increasing sales of existing stores by reaching new customers in their market areas while also expanding sales to existing customers.

The expansion strategy will also focus on identifying attractive new geographic markets for *Living in the Green Lane* centers. This involves finding geographic concentrations of potential customers

# Forestry course set – by Glen Jordan

- 16 labs –
- Inventory
- Analysis techniques
- Clearcutting activity
- Calculating forest values

## Calculating Forest Values

### *Assessing forest recreation value*

—by Glen Jordan

#### Introduction

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##### Problem

How much recreation potential exists in a forest? Unlike timber valuation, it's virtually impossible to compute a dollar value for forest recreation. Now, then, do you go about calculating recreation value in a forest?

Hunting, fishing, bird-watching, hiking, mountain biking, cross-country skiing, and snowmobiling are just a few examples of forest recreation activities. It becomes a question of determining what forest conditions best serve particular recreation activities. Just as, from a timber assessment perspective, you might ascertain what conditions best serve harvest of a variety of timber products,

Large metropolitan areas often abut or even surround forested areas. Typically, though, forest owners make no attempt to promote or develop recreation potential. As metropolitan populations increase, and recreational demands increase, forest owners may want to take a more active role in developing and managing for recreation value.

##### Location

A small, 1,400-hectare (ha) woodlot in the Acadian-New England forest region of North America



**“Locally relevant, flexible  
content”**

## Tailor to your need

- **Customizable Microsoft Word files**
- **Make them harder or easier**
- **Tweak the context of the analysis**
- **Change or add self-assessment questions**
- **Rework to use local data**



**“Low cost”**

# Pricing and Ordering

- **Education Site License Add-on**
- **Price depends on scope of Education Site License**
- **Inside U.S.**
  - **Contact Esri Customer Service**
- **Outside U.S.**
  - **Contact your local Esri office**



# SpatialLABS™

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