

Acknowledgements

11/14/2000

[Click here to start](#)

Table of Contents

Author: Warren A. Brown

[PPT Slide](#)

[Acknowledgements](#)

[PPT Slide](#)

[PPT Slide](#)

[The Study Area](#)

[PPT Slide](#)

[PPT Slide](#)

[PPT Slide](#)

[Physical Attributes of the Region](#)

[PPT Slide](#)

[PPT Slide](#)

[Social Composition of Neighborhoods](#)
[Factorial Ecology](#)

[PPT Slide](#)

[PPT Slide](#)

[PPT Slide](#)

[PPT Slide](#)

[PPT Slide](#)

[PPT Slide](#)

[Model Development](#)

[PPT Slide](#)

Use of Socioeconomic Variables in Habitat Vulnerability Assessment

Stephen D. Smith, Yizhao Yang,
Warren A. Brown, and Milo E. Richmond
Cornell University, Ithaca, New York

New York State
GIS Conference
September 21, 2000



Slide 1 of 20

Acknowledgements

- Hudson River Estuary Project
- NYS Department of Environmental Conservation
- Cornell Institute for Resource Information Systems
- Cornell Institute for Social and Economic Research
- New York Cooperative Fish and Wildlife Research Unit
- NYS Gap Analysis Project, Department of Natural Resources, Cornell University
- National Gap Analysis Project, USGS



Slide 2 of 20

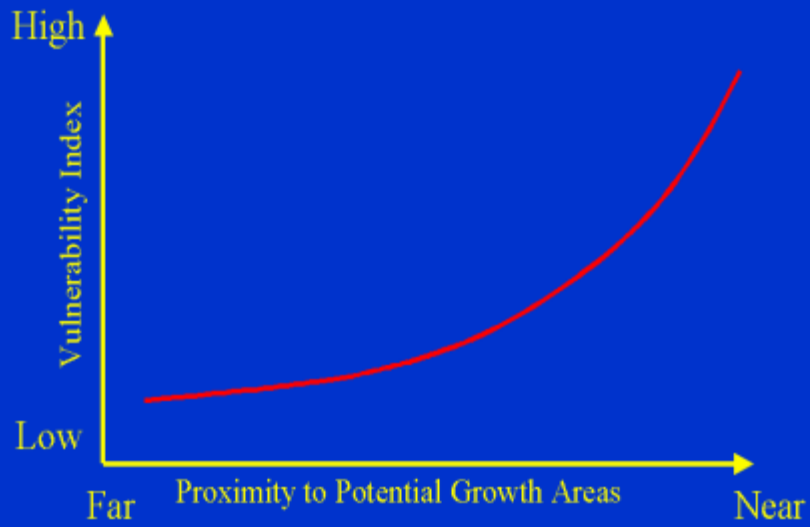
Habitat Vulnerability Assessment

Goals:

- develop techniques for analyzing socioeconomic data to quantify an index of potential human impacts on biodiversity
- utilize developed techniques to assign a habitat vulnerability index to significant biodiversity areas

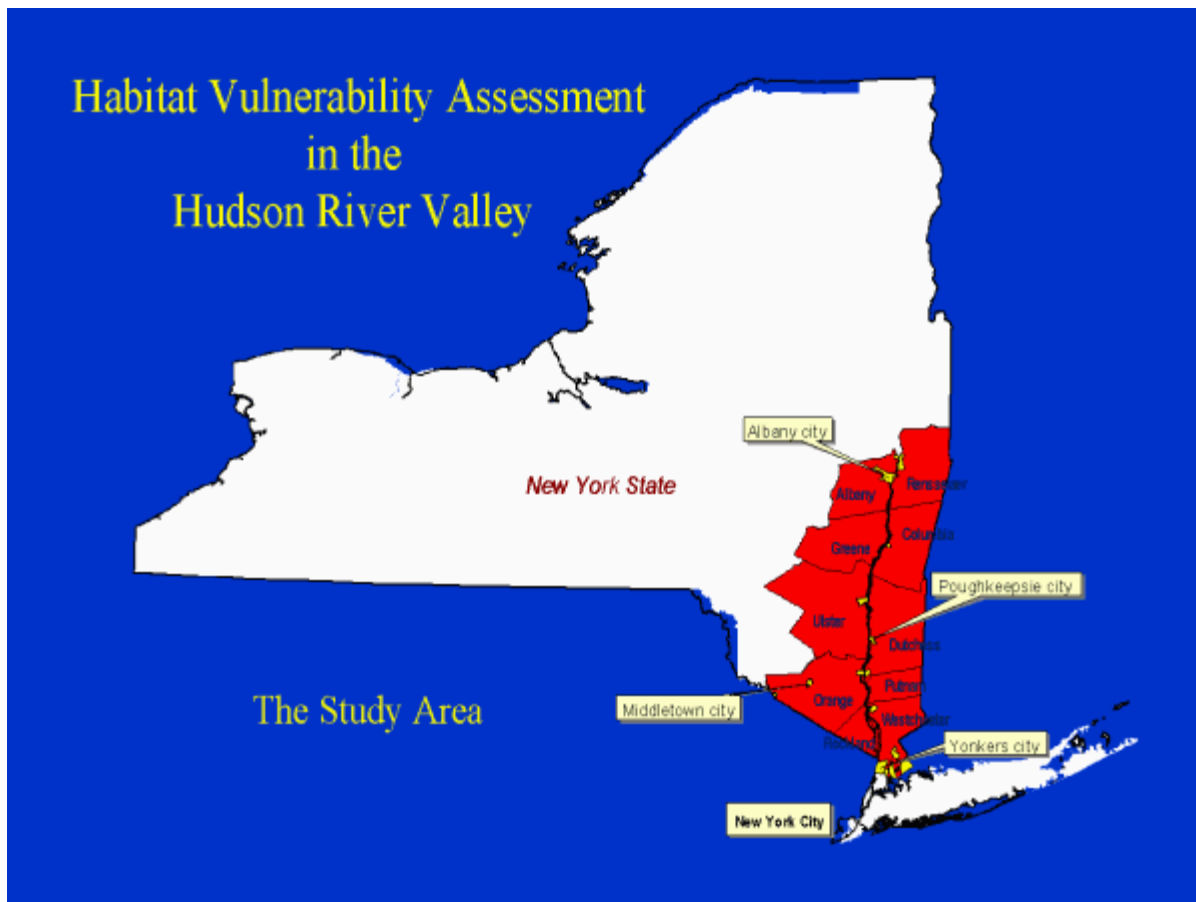


Habitat Vulnerability Index



Quantifies the vulnerability of biodiversity areas to potential development impacts

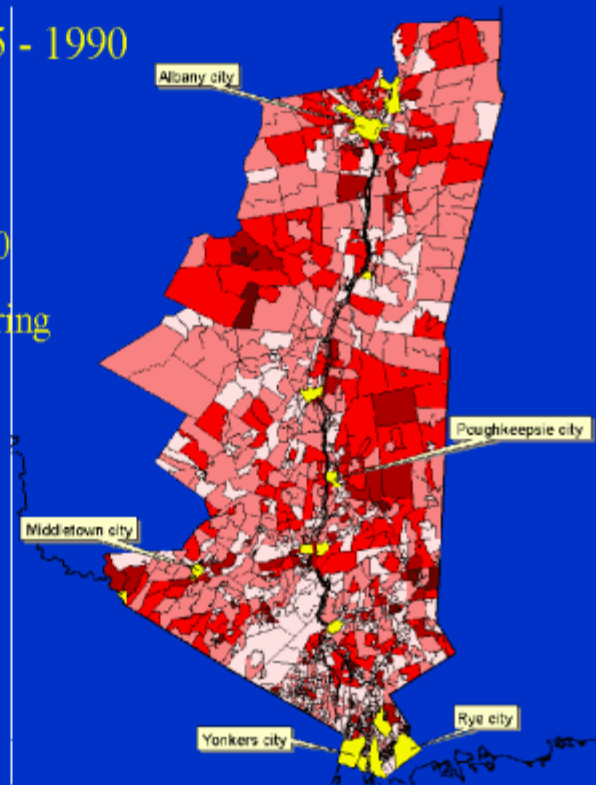
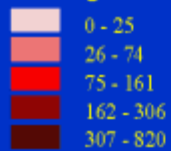




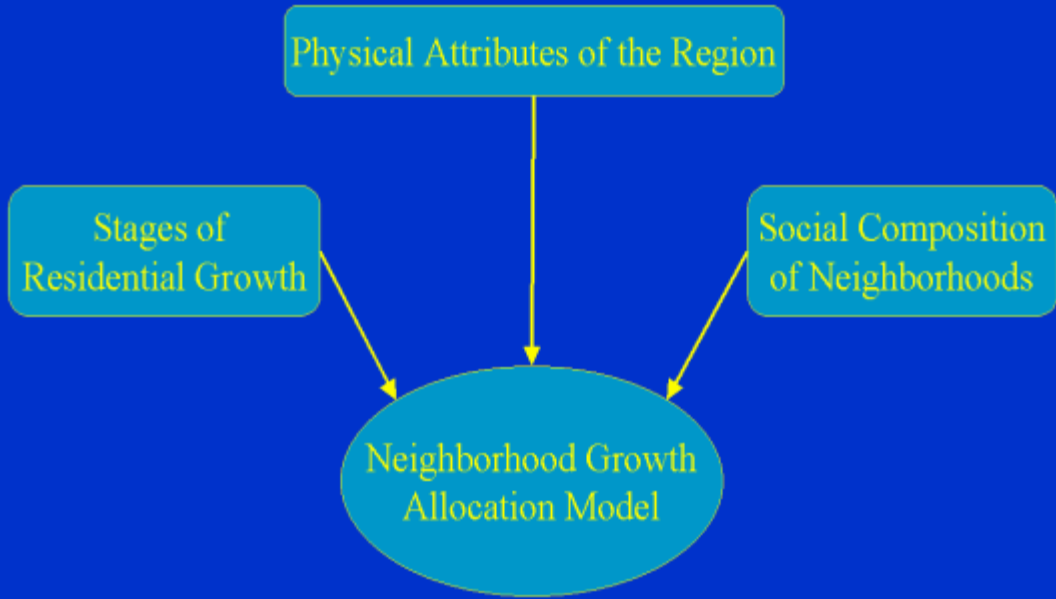
Housing Development 1985 - 1990

- 2,332 Census Block Groups
- 2.3 million population in 1990
- 77,683 housing units built during '85 - '90

Housing Units Built 1985-1990







Model Development



Physical Attributes of the Region

Urban Centers and Transportation Network

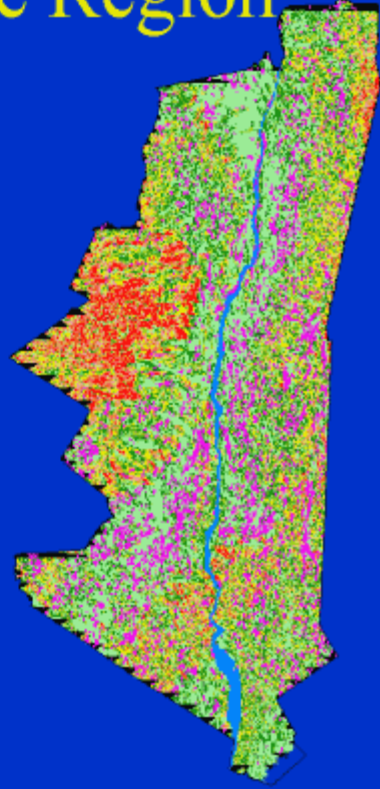
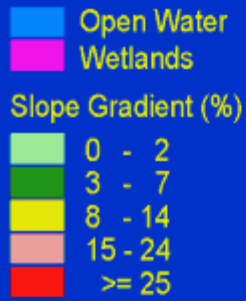
-  Major highways with limited access
-  Major highways without limited access
-  Local roads
-  Limited-access interchanges



Physical Attributes of the Region

Development Constraints

Legend



Stages of Residential Growth

Stage 1: Rural -- low population density

Stage 2: First wave of development -- high rates of new construction

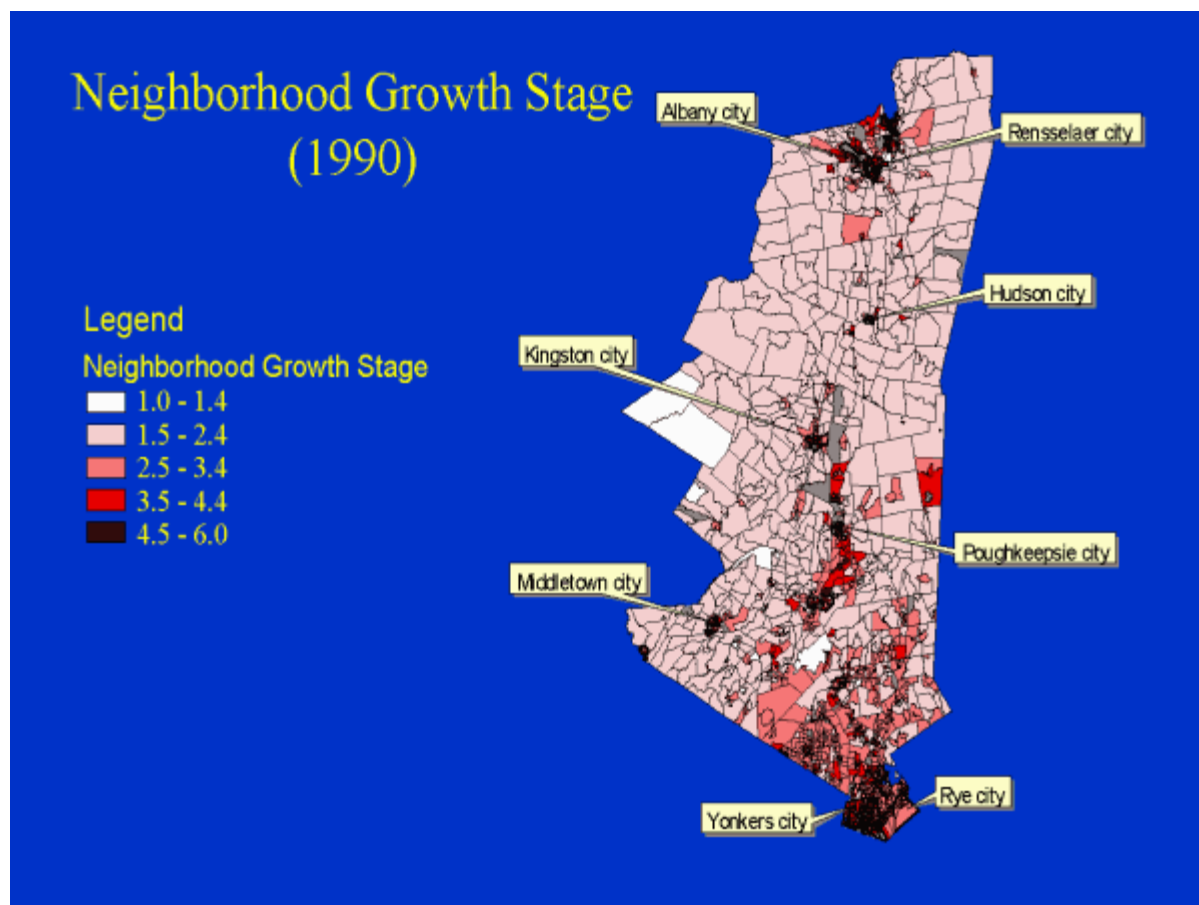
Stage 3: Fully developed -- maximum property values

Stage 4: Packing -- overcrowding

Stage 5: Thinning -- population decline

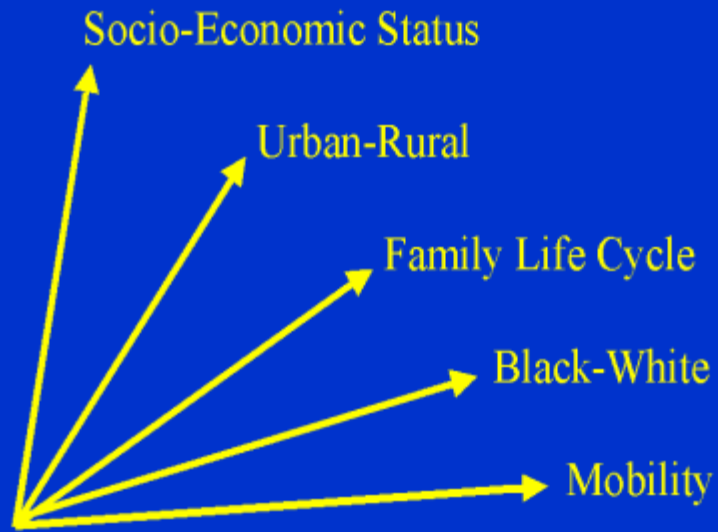
Stage 6: Recapture -- property is rehabilitated

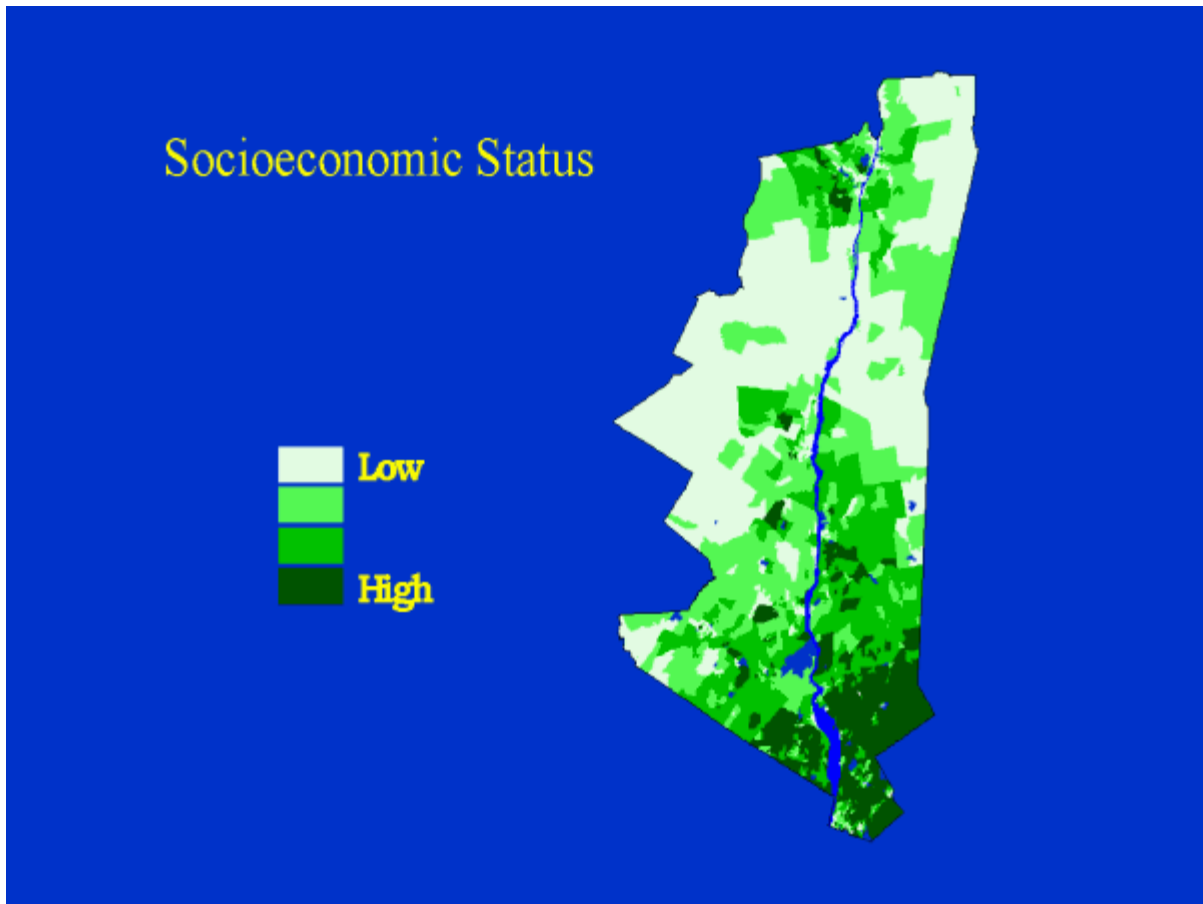




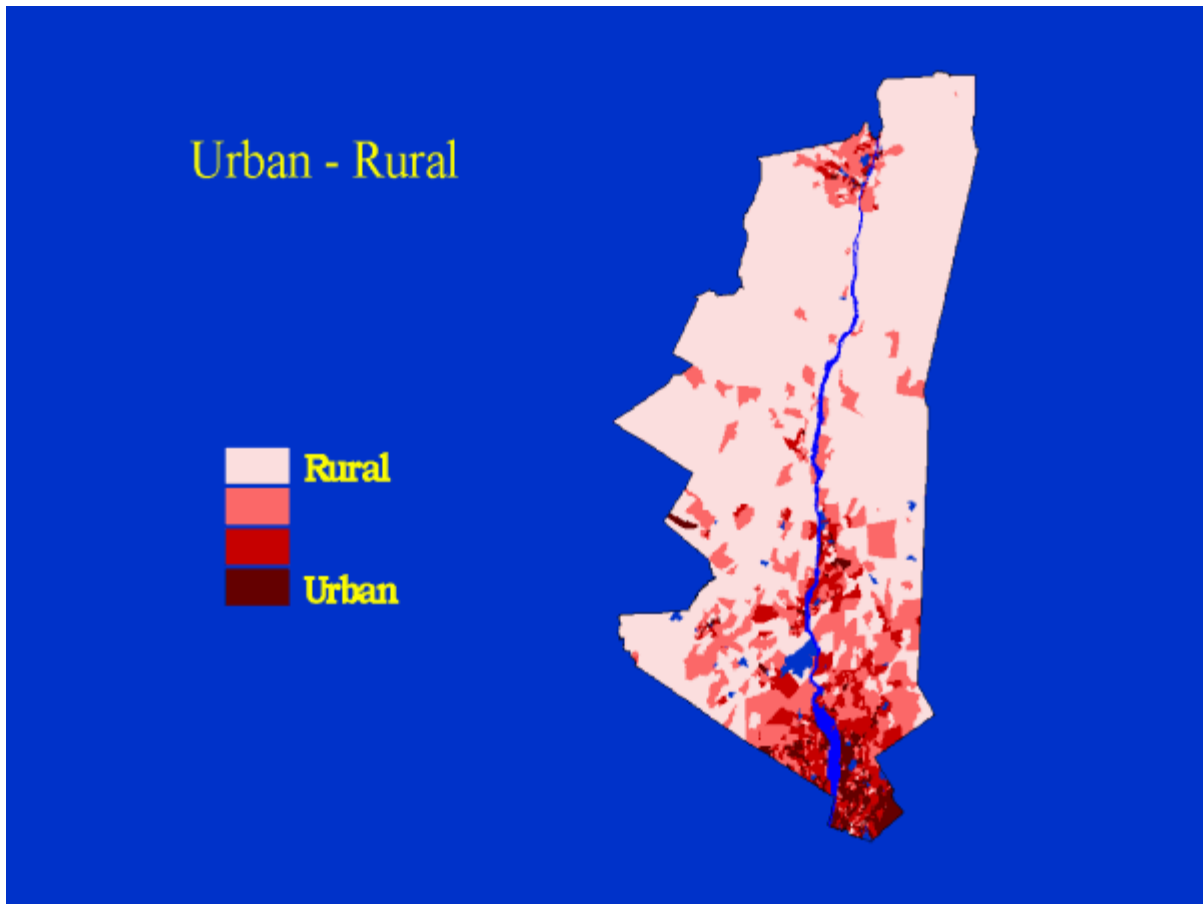
Social Composition of Neighborhoods

Factorial Ecology

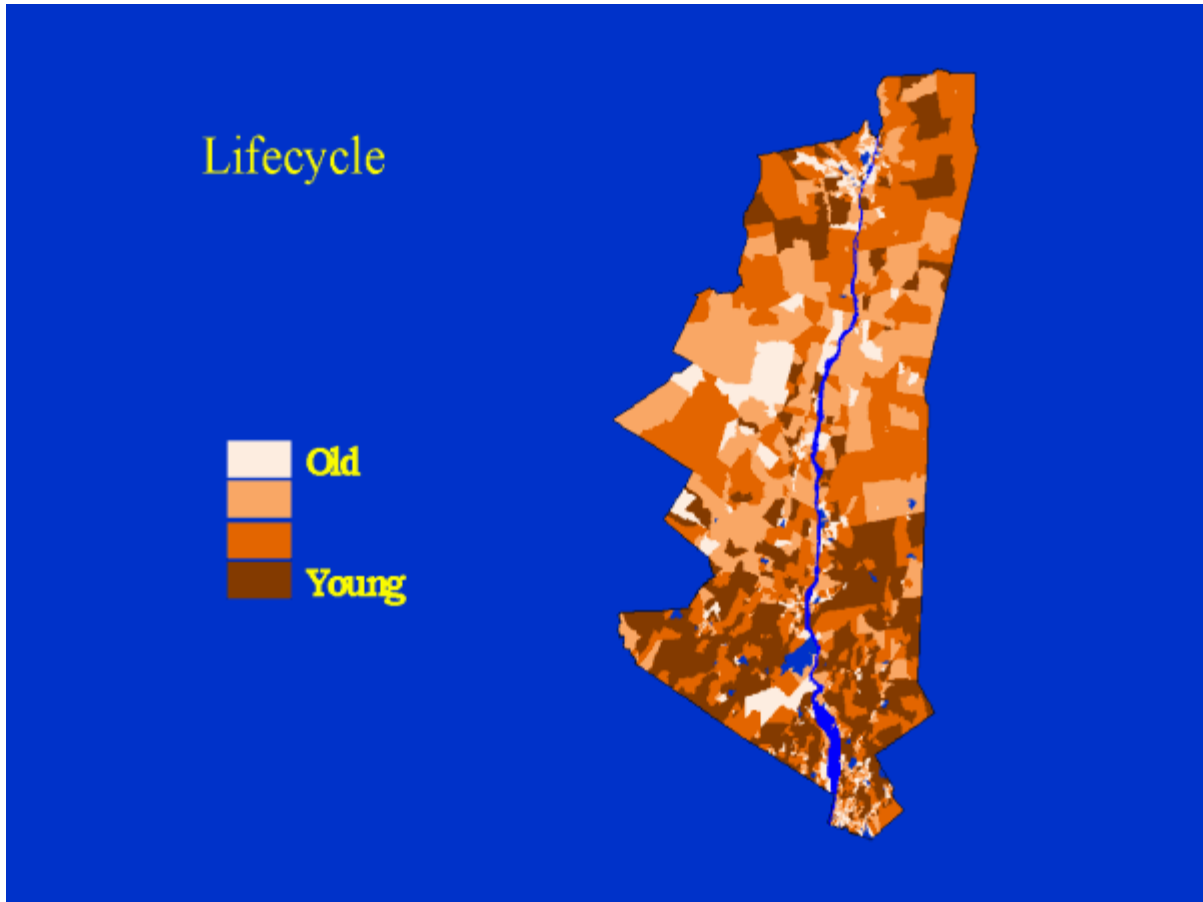




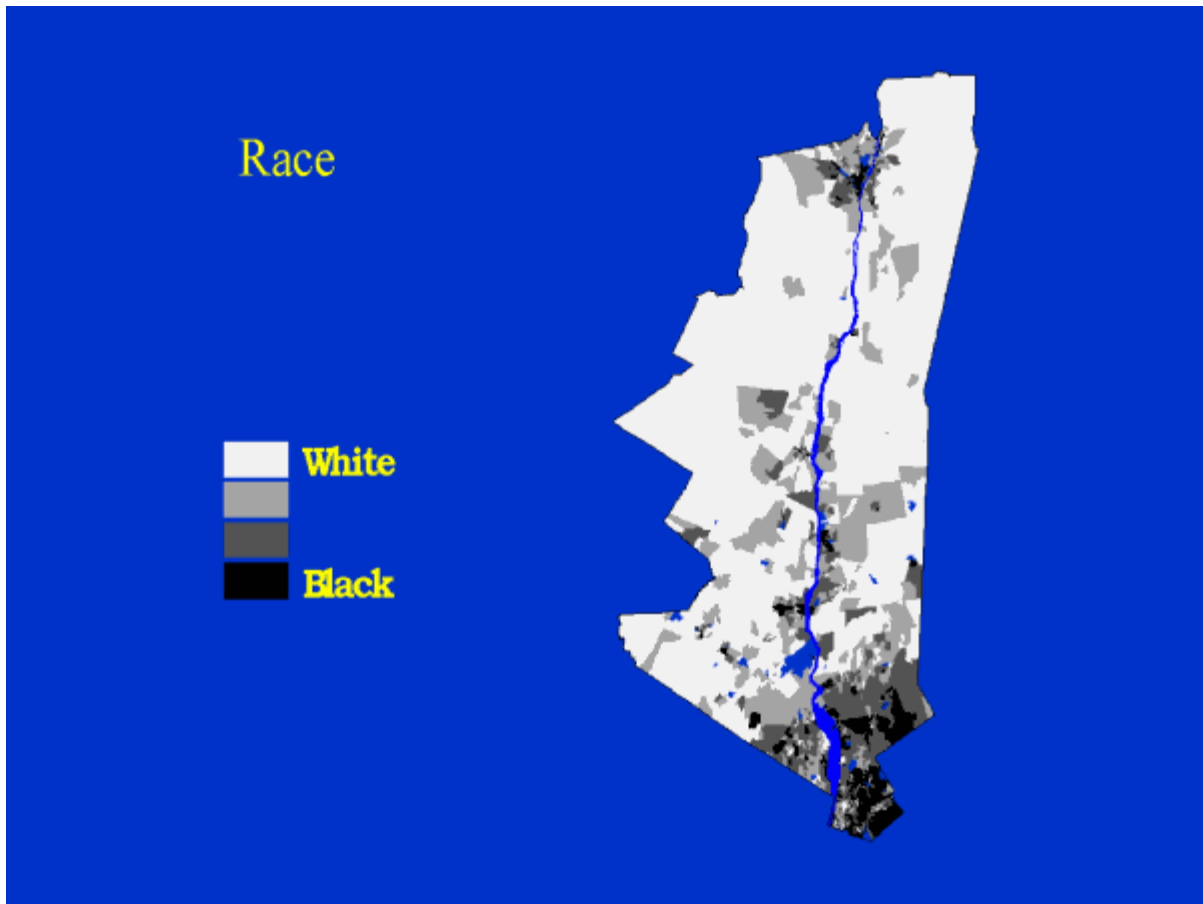
Slide 13 of 20



Slide 14 of 20



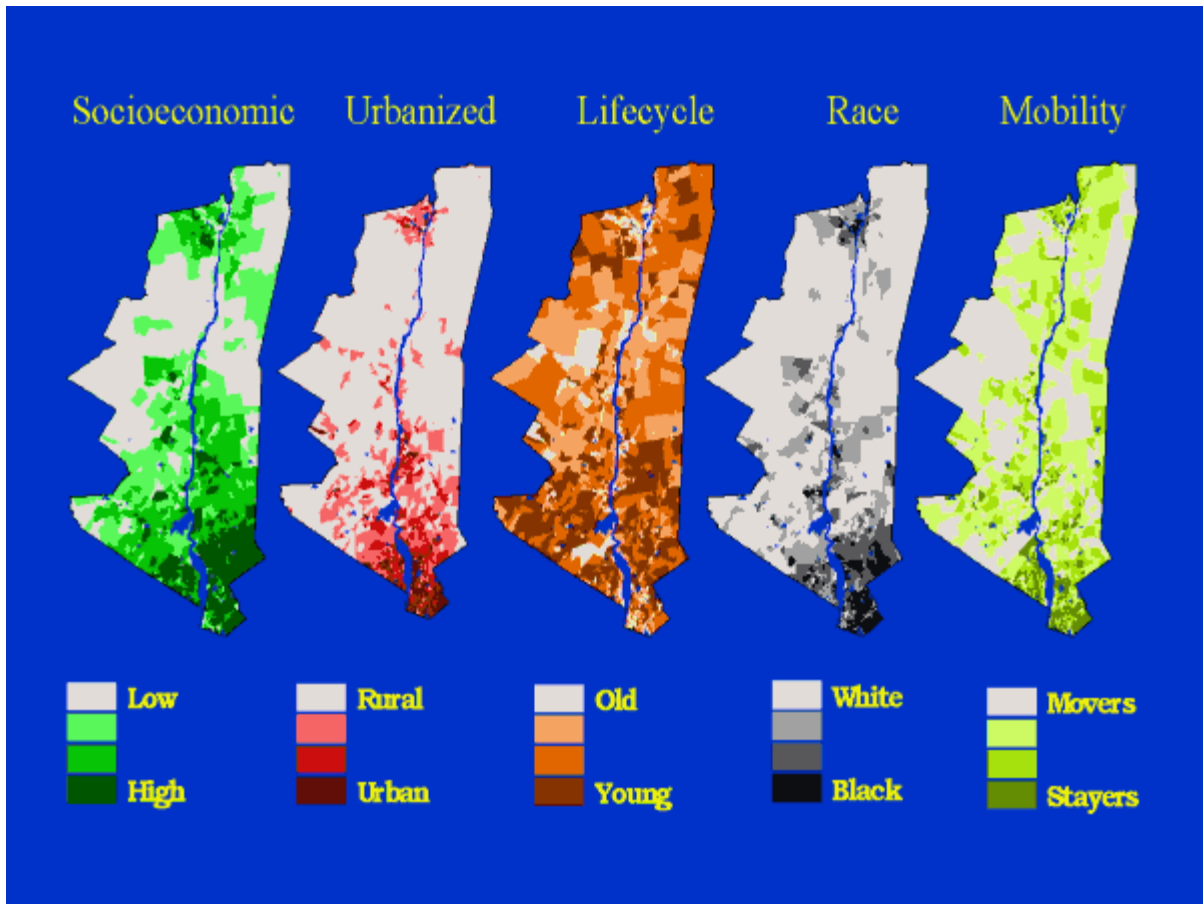
Slide 15 of 20



Slide 16 of 20



Slide 17 of 20



Model Development

- 1990 Census and tax parcel data
 - for 1990-99 change
- 2000 Census and model implementation
 - for 2000-10 projections



Slide 19 of 20

Model Implementation

