



The Hudson Valley: A social-ecological system



Manhattan Island in 1609 and 2009; Mannahatta Project

How do you use land?



How do you use land?

Business

Travel

Home

Recreation

Food

Water

Wildlife habitat



How do you think each of these components changed from 1936 -2009?

Topic	Increase?	Decrease?
Forests		
Farms		
Dams		
Wetlands/river shoreline		
Housing & roads		

Land Use Activity



47748 0 0.26 mi



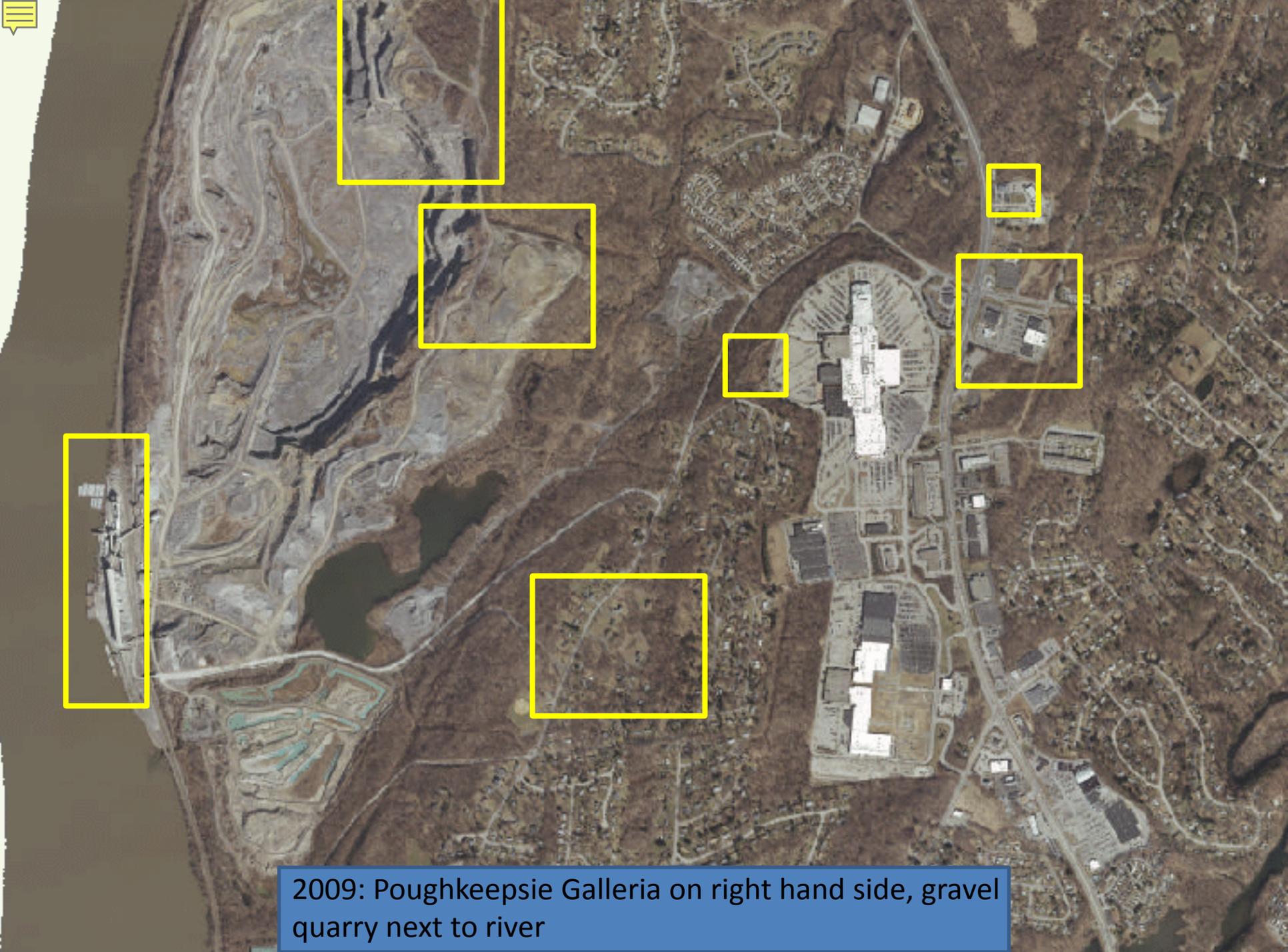
1936: Rt 9, site of current Galleria mall, small quarry visible next to river





2004: Poughkeepsie Galleria on right hand side, gravel quarry next to river





2009: Poughkeepsie Galleria on right hand side, gravel quarry next to river



1936: Rt 9 south of Poughkeepsie



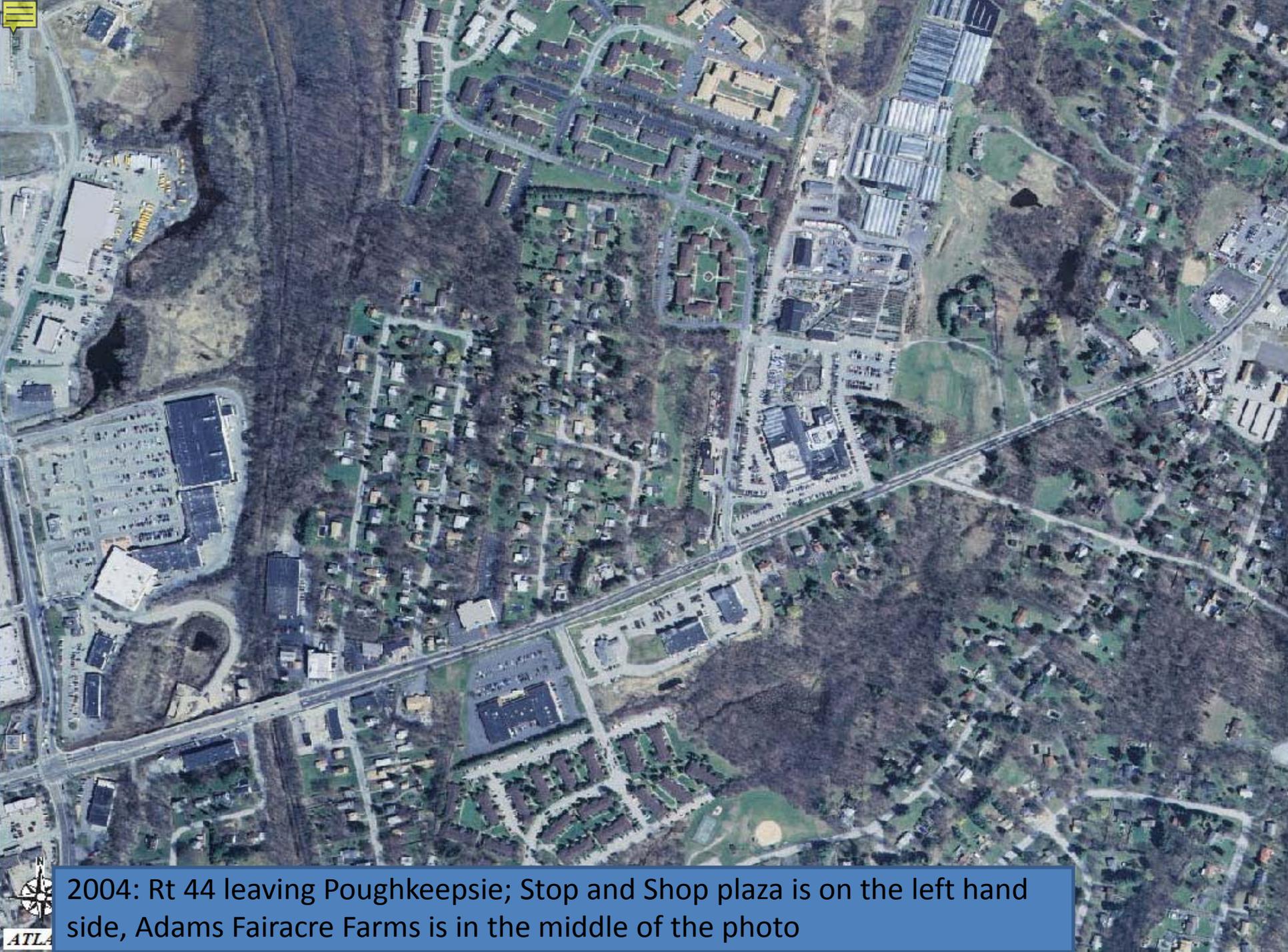


2004: Rt 9 south of Poughkeepsie (top of quarry is visible)

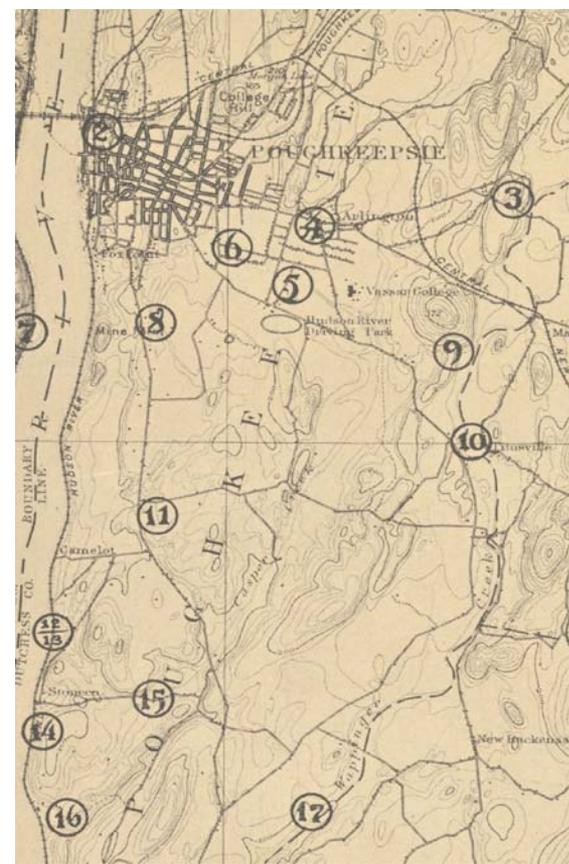


ATLAS 0 530 ft.

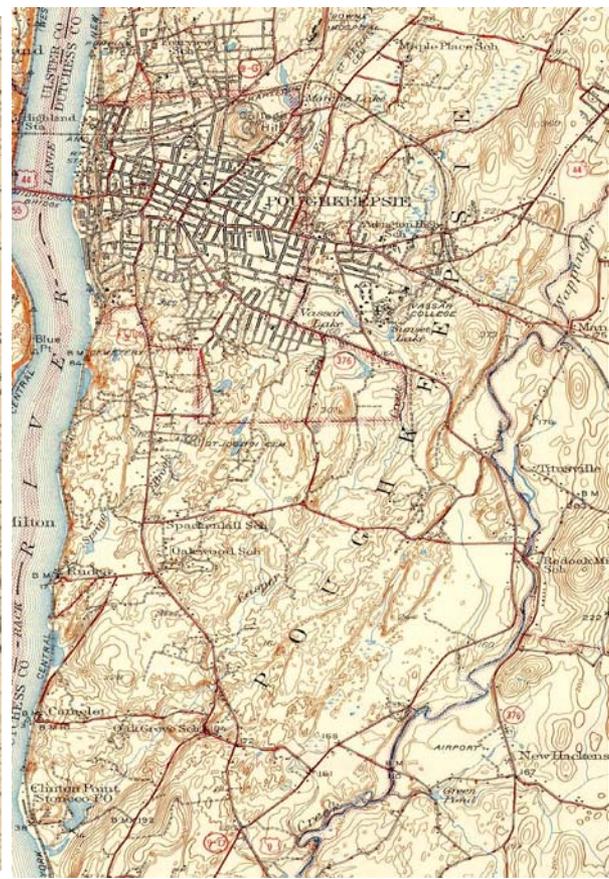
1936: Rt 44 leaving Poughkeepsie



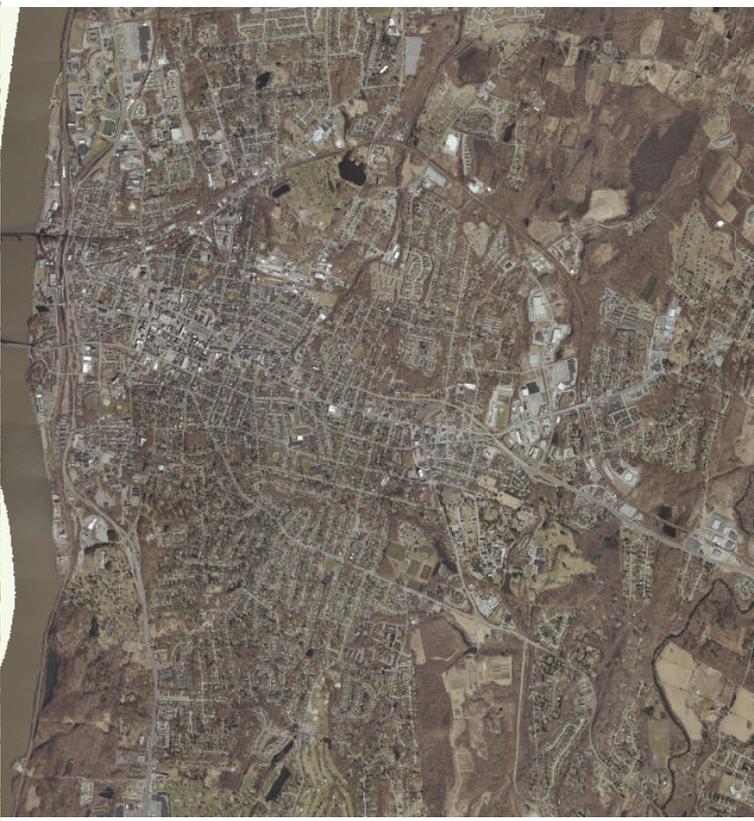
2004: Rt 44 leaving Poughkeepsie; Stop and Shop plaza is on the left hand side, Adams Fairacre Farms is in the middle of the photo



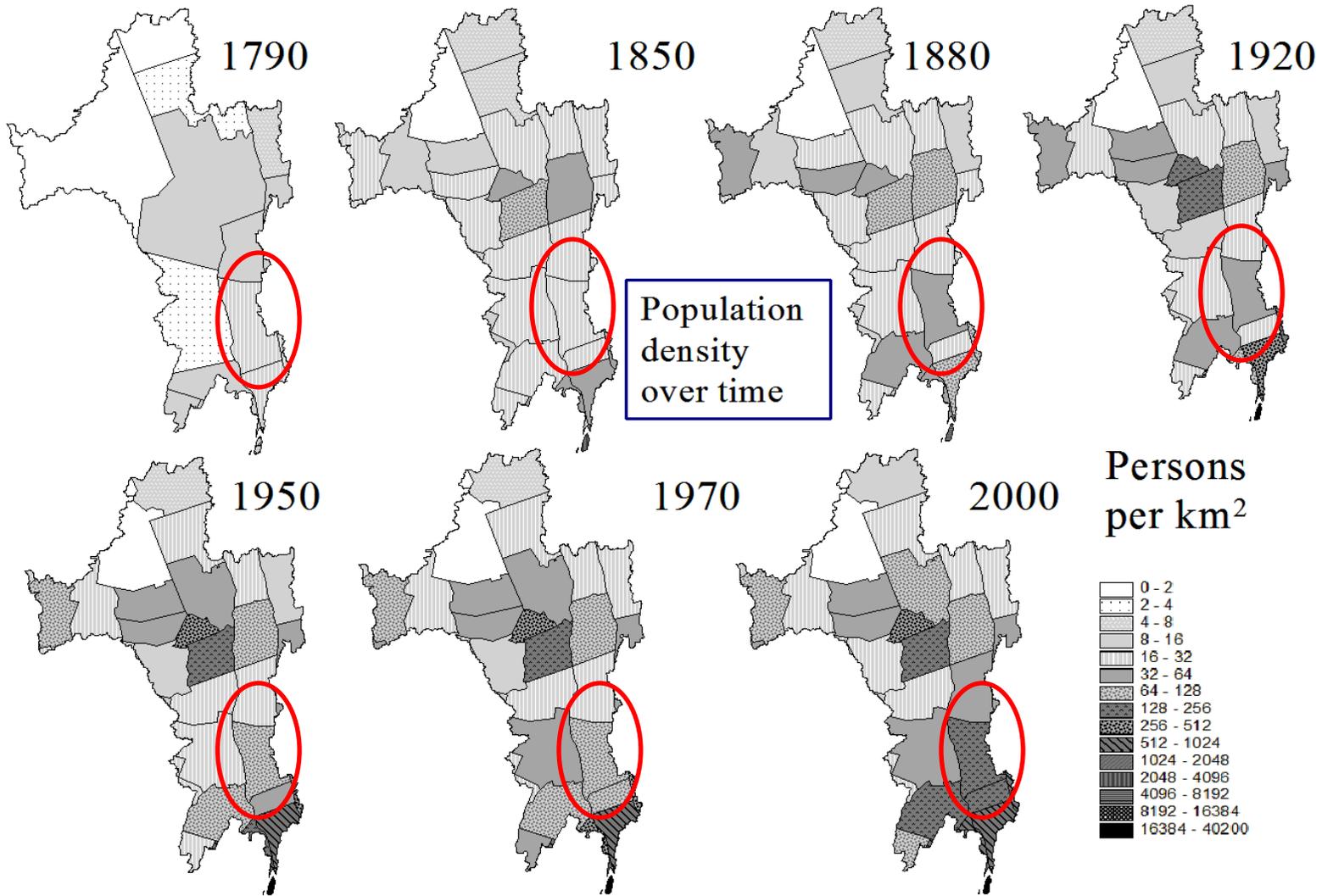
1891



1943



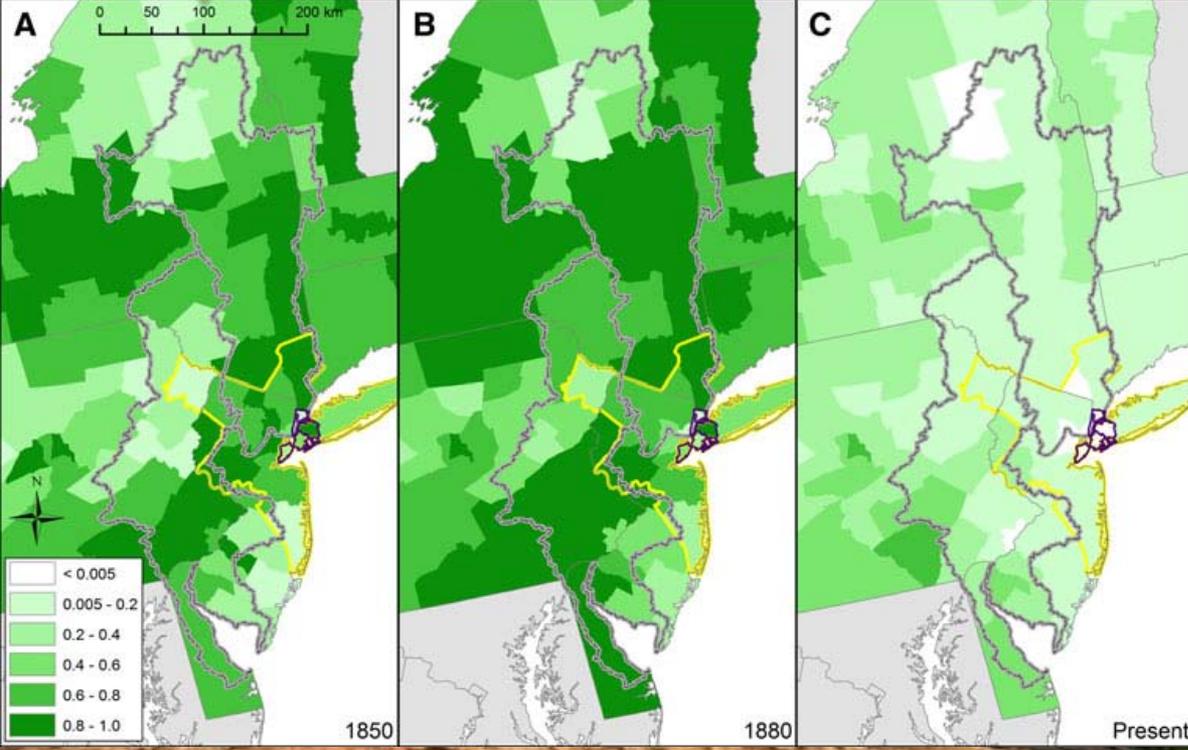
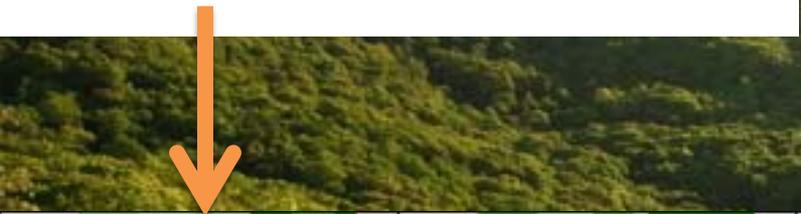
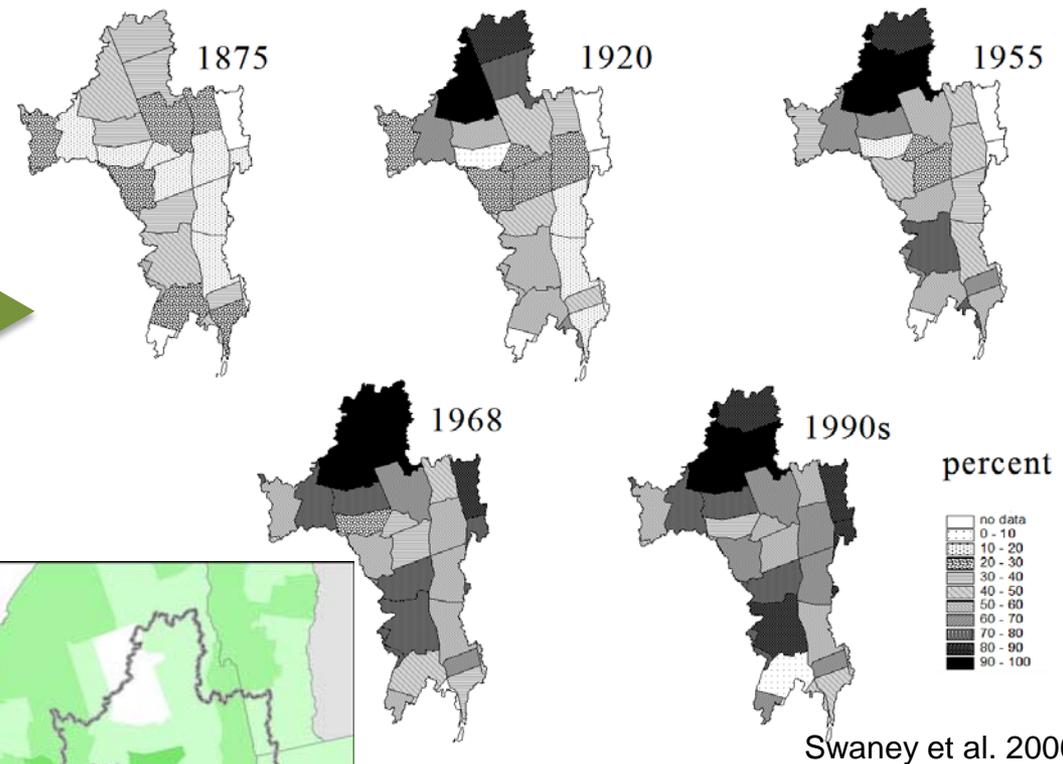
2009



Population

Source: Swaney et.al 2006

Proportion of land in farms and forest



Swaney et al. 2012

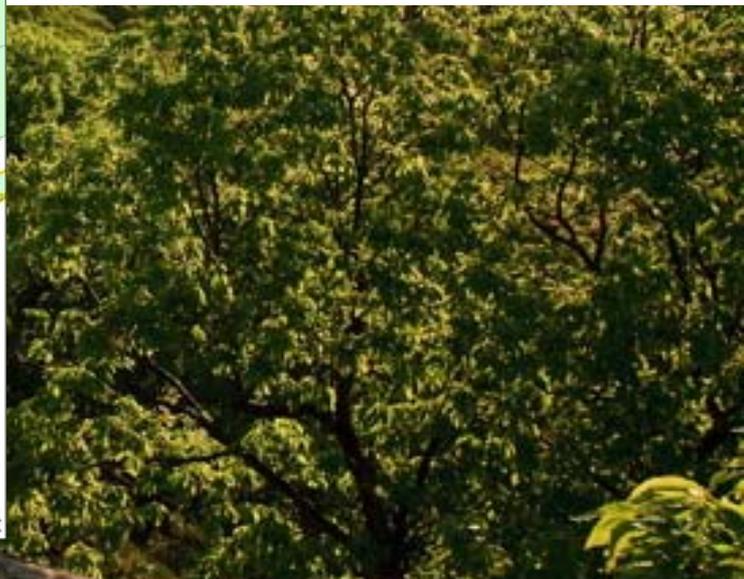


Photo by Robert Rodriguez, Jr.

An aerial photograph of a river flowing through a town. A bridge spans the river on the left side. The town is densely packed with buildings and green spaces. The background shows rolling hills under a clear sky.

We all have land use goals

- shelterhome sites
- food productionfarms
- economy, services ...businesses, roads
- clean waterwetlands, forests
- aesthetic beautygardens, green space
- recreationrivers, lawn, hiking trails
- flood preventiondams, wetlands
- protect wildlifehealthy natural areas
- climate mitigationforests



What did you observe?

Why might we want to increase or decrease each of these components on our land?

Topic	Increase?	Decrease?
Forests		
Farms		
Dams		
Wetlands/river shoreline		
Housing & roads		



Why might we want to increase or decrease each of these components on our land?

Topic	Increase?	Decrease?
Forests	<ul style="list-style-type: none">•Improve air & water quality•Climate & flood mitigation•Preserve habitat & biodiversity•Recreation, scenic views	<ul style="list-style-type: none">•Logging for paper, wood•Clearing for homes, industrial buildings, parking lots
Farms	<ul style="list-style-type: none">•Food production•Animal feed•Biofuels	<ul style="list-style-type: none">•Economically not worth it•Poor soil
Dams	<ul style="list-style-type: none">•Flood control, water supply•Hydroelectric power	<ul style="list-style-type: none">•Preserve habitat & biodiversity•Preserve fishery health
Wetlands/river shoreline	<ul style="list-style-type: none">•Flood prevention/mitigation•Improve water quality•Preserve habitat & biodiversity	<ul style="list-style-type: none">•Cheap land for homes, industrial development, and farming
Housing & roads	<ul style="list-style-type: none">•Local population increase•Sprawling development	<ul style="list-style-type: none">•Population decrease•Land reclamation / Re-purposing