




# The Hudson Valley: A social-ecological system



Manhattan Island in 1609 and 2009; Mannahatta Project



# How do you use land?





An aerial photograph of a coastal area, likely a bay or harbor, showing various land uses. A large bridge spans the water on the left. The shoreline is lined with greenery, roads, and buildings. Several white boxes with blue text are overlaid on the image, pointing to different areas. The text includes 'How do you use land?' at the top, and labels for 'Travel', 'Business', 'Home', 'Recreation', 'Food', 'Water', and 'Wildlife habitat' scattered across the landscape.

# How do you use land?

Travel

Business

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		



An aerial photograph of a coastal region, likely in the Gulf of Mexico, showing a mix of land and water. The land is divided into various agricultural plots, some of which are irrigated, creating a patchwork of different shades of gray and white. A prominent blue line, possibly a coastline or a boundary, runs along the left side of the image. In the bottom left corner, there is a compass rose and a scale bar. A large white rectangular box is superimposed over the center of the image, containing the text "Land Use Activity".

# Land Use Activity



47L4S 0 0.26 mi





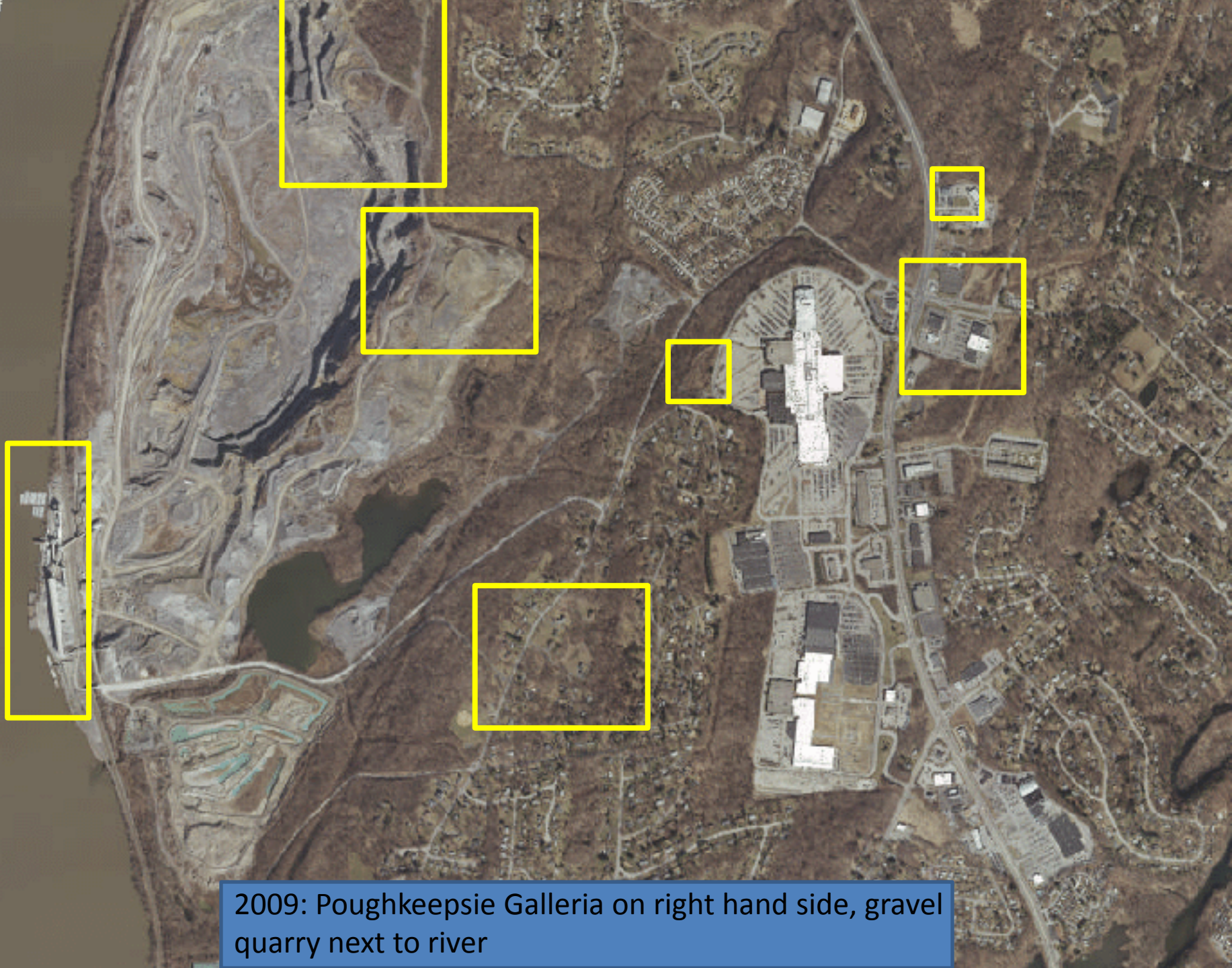
1936: Rt 9, site of current Galleria mall, small quarry visible next to river





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





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



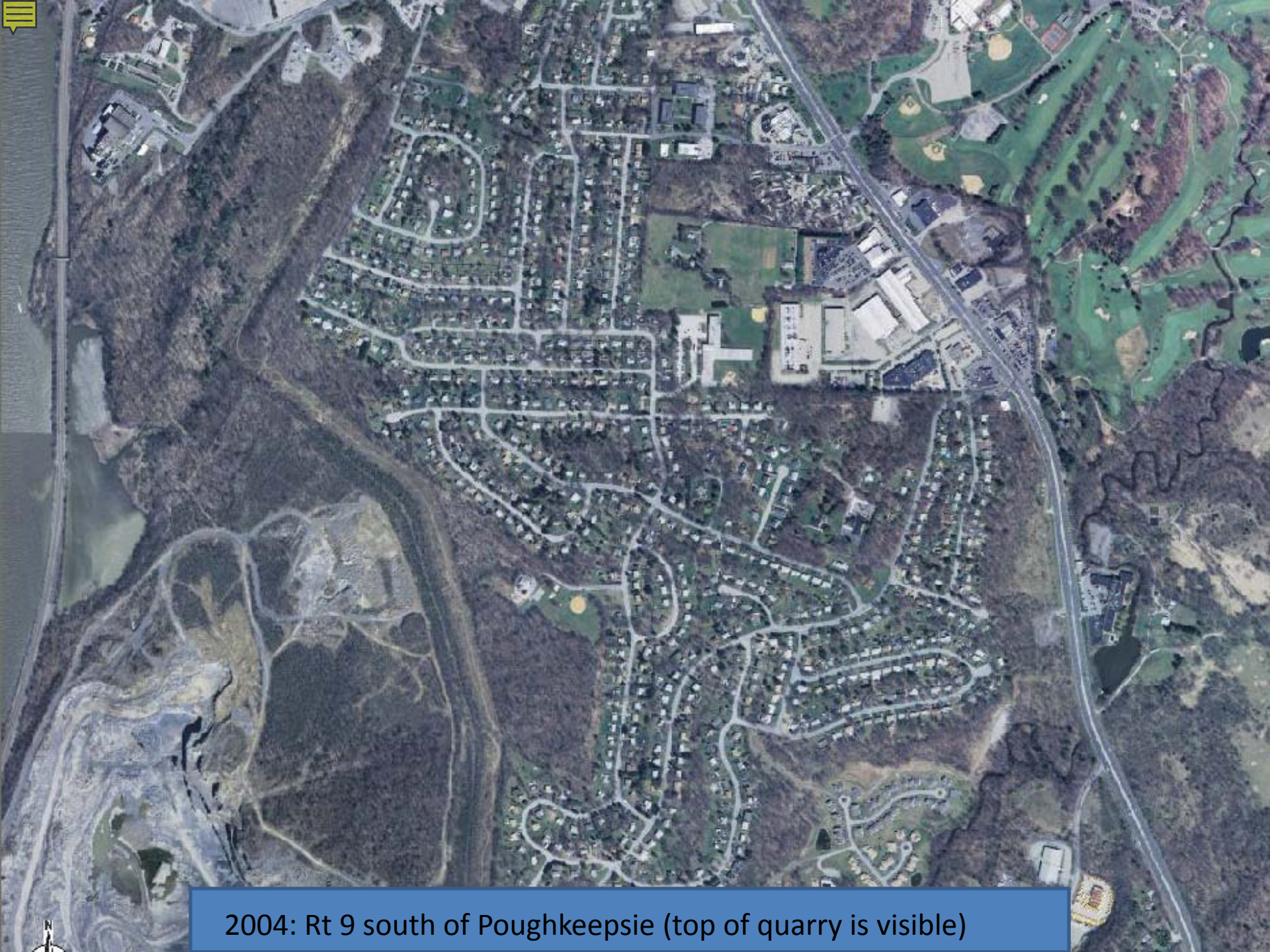


1936: Rt 9 south of Poughkeepsie



TLAS 0 1008 ft.





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

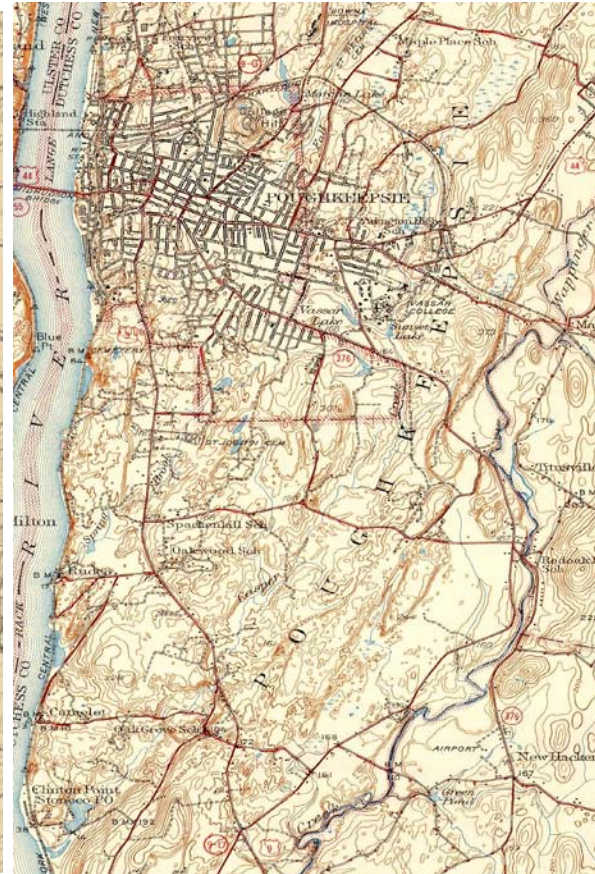








**1891**

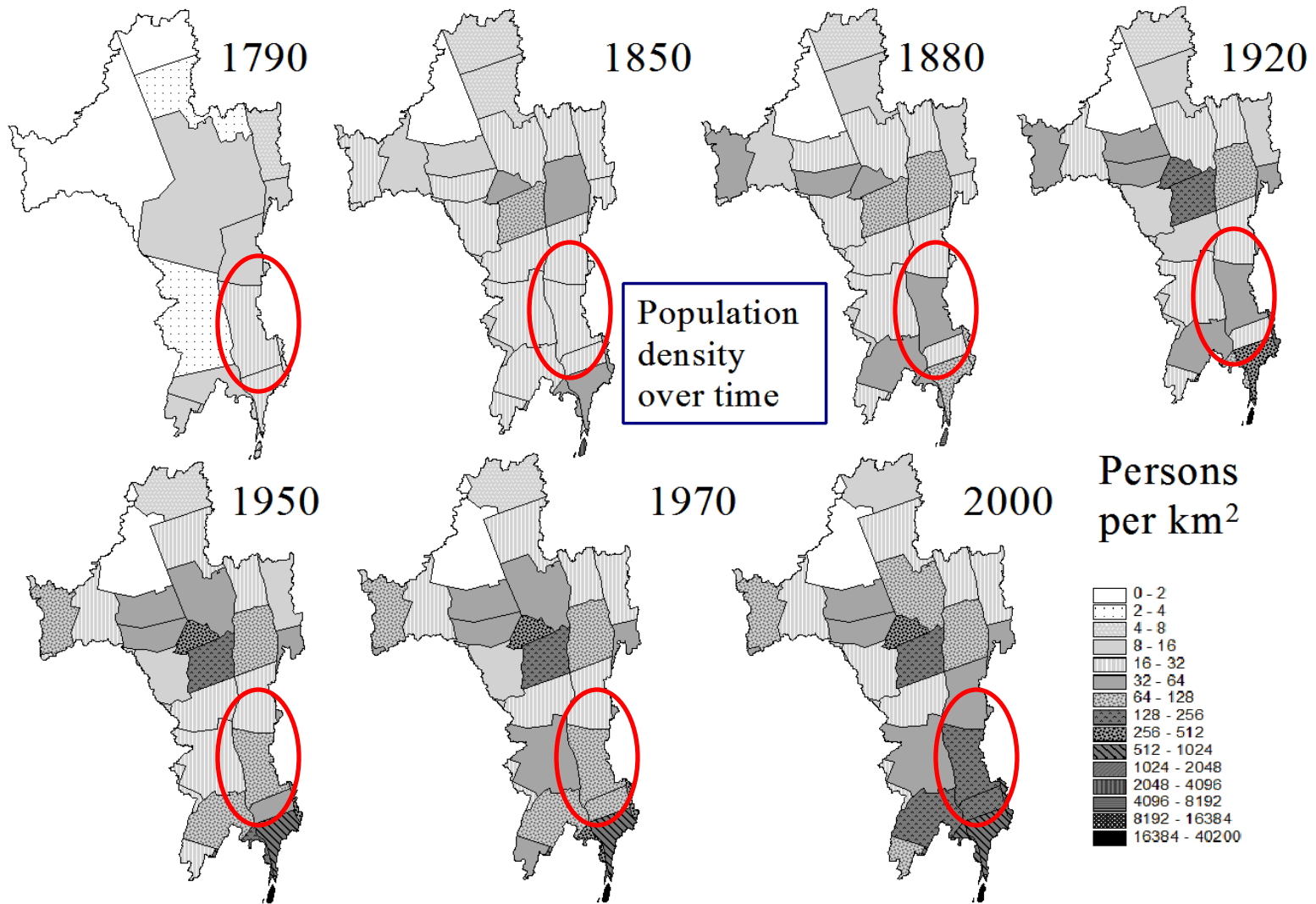


**1943**



**2009**



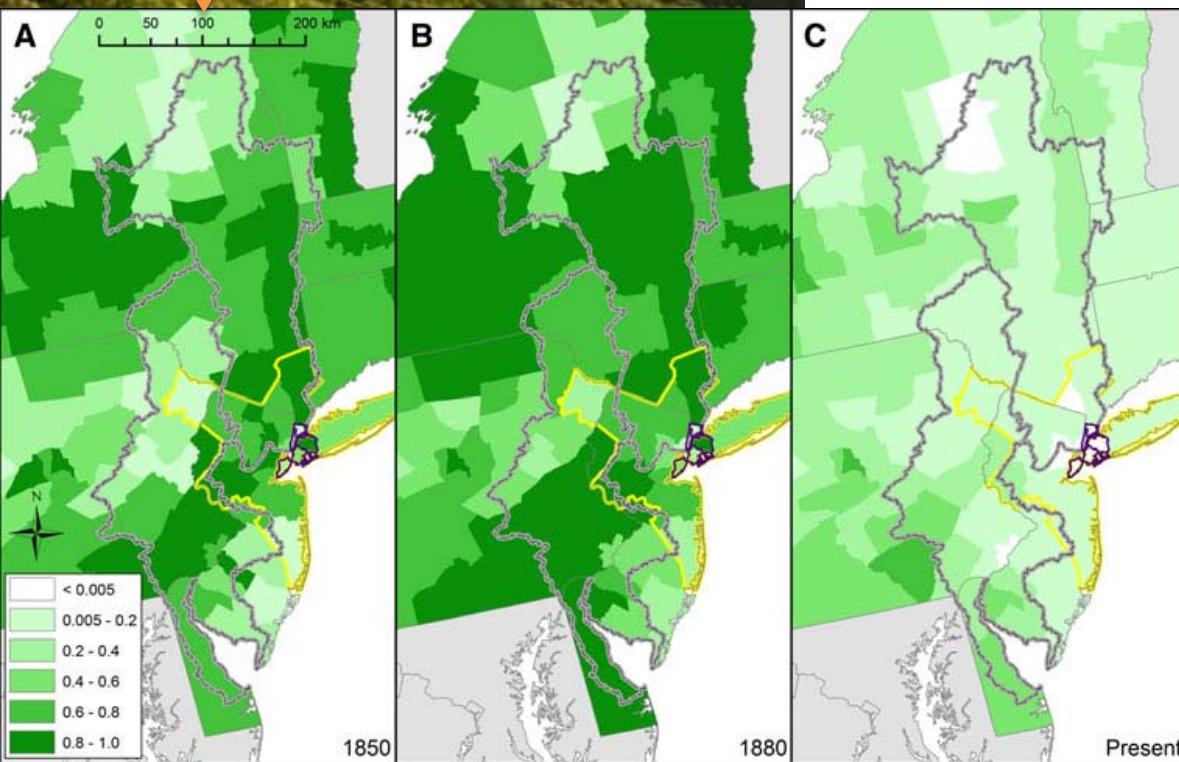
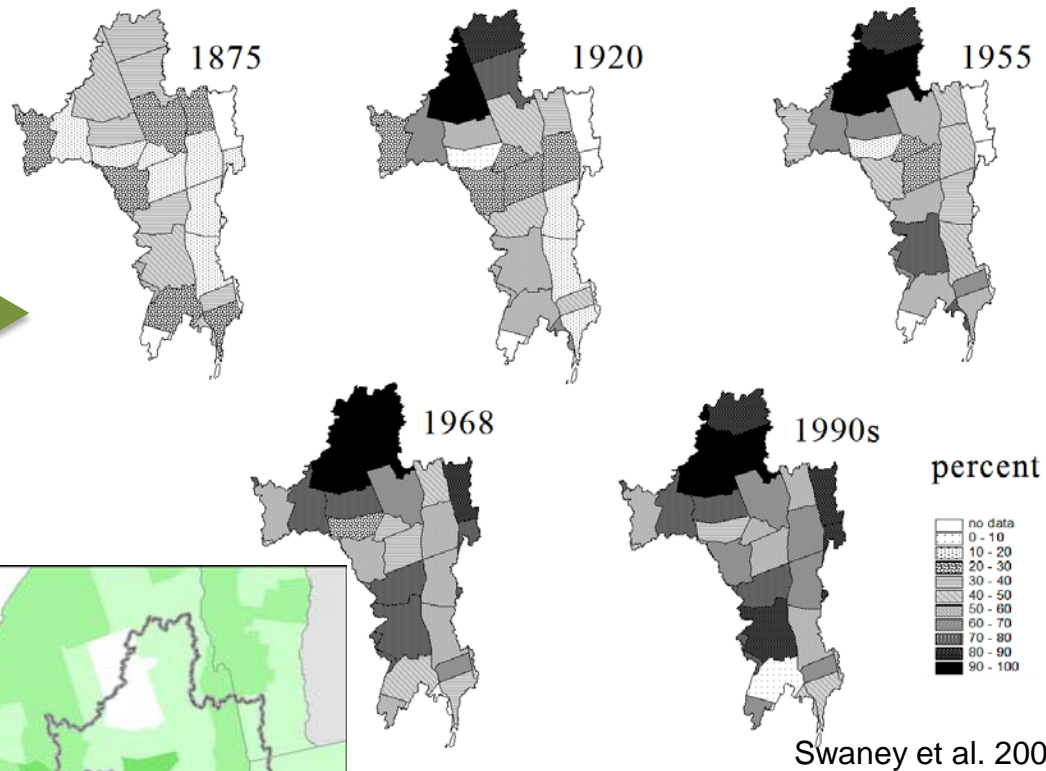


# Population

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 with a bridge crossing it. The river is on the left, and the bridge extends towards the right. The surrounding area is a mix of green fields and some buildings.

# We all have land use goals

- shelter .....home sites
- food production ....farms
- economy, services ...businesses, roads
- clean water ....wetlands, forests
- aesthetic beauty ....gardens, green space
- recreation ....rivers, lawn, hiking trails
- flood prevention ....dams, wetlands
- protect wildlife ....healthy natural areas
- climate mitigation ....forests





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