1. Lawrence, Massachusetts was a new textile mill town, built after the successes of Lowell and Waltham. All were powered by water from the Merrimack River.

2. Martha's Vineyard, outwash plain and sand dunes near Chilmark.

3. The Statue of Liberty is located on Liberty Island at the mouth of the Hudson River.

4. The New Jersey Pine Barrens on the road between Atlantic City and Camden. The barrens have a sandy, acidic soil that was agriculturally unproductive and therefore remained undeveloped. Today much of the region is the Pinelands National Reserve.

5 Since 9/11 the Liberty Bell and Independence Hall in Philadelphia are protected by a screening facility as a security precaution.

6. Fell's Point was a major shipyard during the 18th and 19th centuries. After a period of decline the waterfront was redeveloped in the 1960s.

7. The Delmarva Peninsula has remained agricultural and relatively isolated considering it location near the nation's capital. Chicken production has created additional pollution for Chesapeake Bay.

Ch 7: Megalopolis

'BosWash': New York City, Boston, Philadelphia, Baltimore, Washington D.C.

-50 mill. People (Boston to Washington D. C. 2016)
-Highest pop. density in U.S.
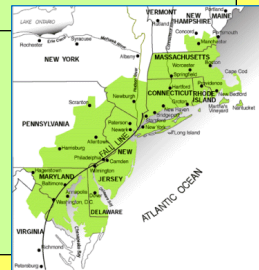
20% of nation's personal income
Bus. and gov. center of the U.S.
4th largest econ. in the world

Greatest wealth, greatest poverty

1

Megalopolis

- Defined by
  - Population
  - Urban centers
  - economy
- "Corporate hippies"
  - **Fall Line: where harder rock of the Piedmont ends and the softer coastal soils begin.**

3

Physical Geography

- **Connecticut, Hudson, Delaware, Susquehanna, and Potomac Rivers**
- Industrial Revolution-Water power also future power
- Hudson- Southern extent of Ice Age
- Connecticut River- fertile sediment- agricultural area- dumping ground industrial revolution-1960s and 1990s.

http://arcg.is/1UGdLAW

4

Physical Geography

- Chesapeake Bay
- 64,000 square miles
- 16 Million people
- Delmarva Peninsula
- Runoff from city streets, inorganic nutrients from farmlands, outflows sewage treatment, chicken manure
- Excess algae growth blocks sunlight
- Hampering grass growth-blue craps and oysters
- Depletes DO in water.

5

Chesapeake Bay

- 1983 Chesapeake Bay Program
- 2000 reduce nutrients by 40% 2000- unfulfilled.
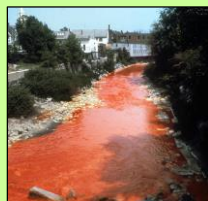- Obstacles fragmented watershed shared by several state.

6

Draining estuaries- Box 7.4

- Industrious English and Dutch settlers- agriculture and health-malaria, cholera.
- Unintended consequences
  - Provide habitats for aquatic and bird species
  - Act as flood control- sponges-
  - Protect from storms
  - Both of which are on the rise- climate change – Makes coastal areas vulnerable.

7

**Rivers and Harbors Act of 1899: no dumping of refuse
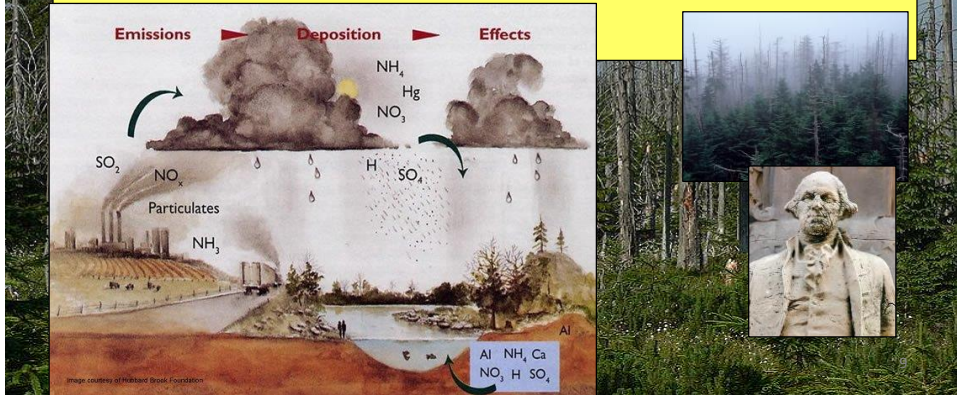The Clean Water Act (CWA) of 1972:**

- **Federal, to deal with water pollution, runoff**
- **Est. standards, designates uses, enforces**
- **Through permit system (industry, feed lots …)**
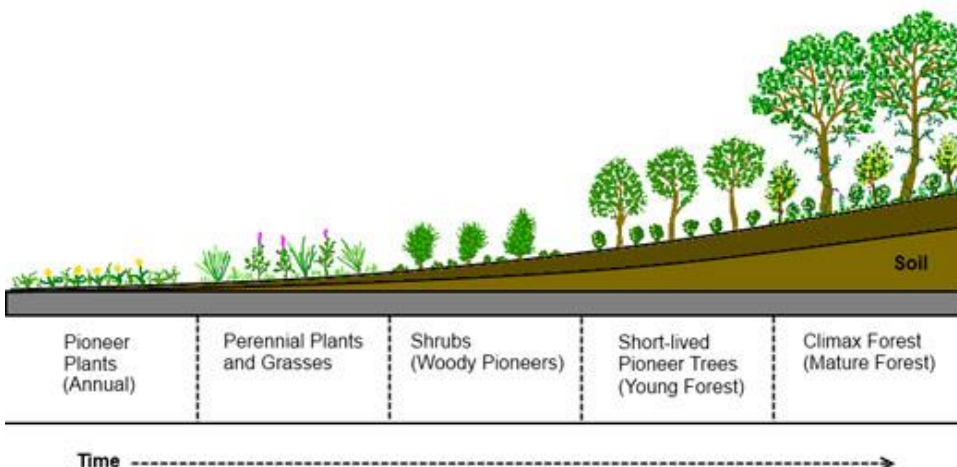- **Not groundwater**
- **Exempts oil companies (fracking)**

8

Acid rain

- **Pollutants originate from coal-burning power plants in Midwest carried east by winds.**
- **New plants scrubbers but older plants grandfathered in.**
- **Also automobile emission, volcanic eruptions.**
- **Acid rain attacks statues, trees, soils, lakes, rivers**

Stages of Forest Succession

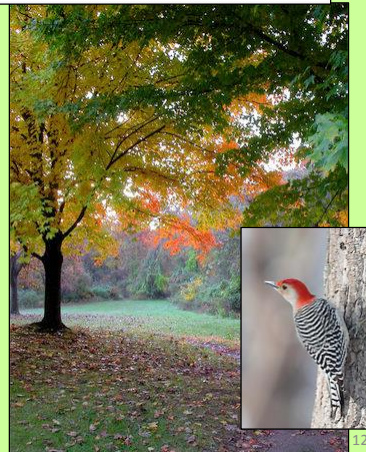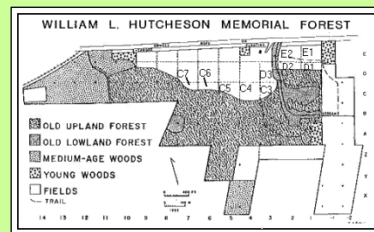| Pioneer Plants (Annual) | Perennial Plants and Grasses | Shrubs (Woody Pioneers) | Short-lived Pioneer Trees (Young Forest) | Climax Forest (Mature Forest) |

Time ————————————————————————→

5

Succession

- Primary succession-Bare surfaces with no organic matter.
- Secondary succession-Disturbance that causes the destruction of, or damage to, an existing ecosystem but leaves much of the soil and some organisms intact.
  - Human (anthropogenic) or natural like flood or wind.

Hutcheson Memorial Forest: Box 7.3

- **'Old-growth' Piedmont forest, in NJ (Rutgers U.)-65 acres.**
- **Never logged but surrounded by young forest, fields**
- **Used to study ecological changes**
- **But: was purposefully burned prior- Native Americans**
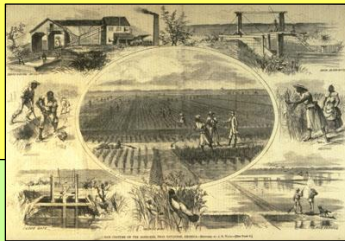- **Not as pristine as once thought**

WILLIAM L. HUTCHESON MEMORIAL FOREST

- OLD UPLAND FOREST
- OLD LOWLAND FOREST
- MEDIUM-AGE WOODS
- YOUNG WOODS
- FIELDS
- TRAIL

12

6

How did the region get to this? Settlement history

- **Ignored local ecosystem and native practices**
- **Imported what worked in Europe**
- **Brought their type of economy (colonial) and forced their system of land division, housing styles**
- **Grew crops to suit (exports): tobacco, rice, indigo, cotton**
- **Grew a culture that supports this economy (slavery, individualism)**

THE TRIANGULAR TRADE

13

- **Cities were built based on commerce and capitalist ideas (harbors, on water, between rivers …)**
- **Today, a new 'environmental' economy: a <u>paradigm shift</u>?**

- **Human security: economic, social, environmental**
- **Social entrepreneurship**

14

Martha's Vineyard (1642) and Nantucket (1795)

- Whaling and then tourism.
- WWII- mass tranport. Summer hideaway for affluent
- Summer months increase Vineyard- 100,000 people. Median house price $565,000-
- Nantucket Sound first

offshore wind farm 2010

Merrimack Valley, NH

- **First industrialized (Lowell, Laurence)**
- **Cotton, woolen textile mills**
- **20th century: collapse as these move south**
- **Now part of greater Boston**
- **Mills into green condos; underwater turbines**
- **High tech**
- **And new immigrants**

17

Boston, MA

- **Econ. capital of New England**
- **Harvard, MIT … a technopole**
- **Electronics., pharma, aeronautic industries**
- **Also insurance, publishers**
- **Big Dig**
- **Energy and water savings.**

18

Narragansett Basin/ Providence, RI:

- Dissident-Mass.
- Fishing, rum-making, slave trade until textile mill

Today high unemployment

Connecticut River Valley:

Fertile, level, small towns
Early specializations: clocks, cutlery, tools
Today: sustainability not a priority
"Decentralized and haphazard, without long-term vision"

Maine

New Hampshire

★ Concord

Atlantic Ocean

★ Boston

Massachusetts

RI

19

Albany and the Hudson River Valley

1619 Dutch fur trading post
- 1825: Erie Canal
- Good for trade, for Albany
- Today: 'Albany 2030' a comprehensive
plan (all departments participate)

CANADA

Lake Ontario

Erie Canal

Lake Erie

New York

Hudson River

20

New York City

8.5 mill. (2016), high density, green
Premier position, major port
Extensive waterfront
Largest stock exchanges, a global city
Waste/NIMBYism, but good water

21

NYC: 5 boroughs, well connected

Manhattan (1.6 mill.):
core, offices, Central Park - liberal West Side, affluent East Side

- **North: Harlem**
- **South: Soho, Tribeca (Triangle below Canal Street)**
- **financial district**

22

- **The Bronx** (1.5 mill) 2016

Residential, land and commercial interests.
Numerous housing projects-arson (1980s) drugs, poverty
45% White, 56%Hispanics, 43%Blacks
30% below poverty line

- **Queens** (2.2 mill.)
 about 48% immigrants
Includes Long Island
Airports, Jet Blue headquarters, growing artists' lofts

More Boroughs

Brooklyn (2.6 mill. 2016)

Jewish/Italian now Russian, Pakistani

Largest population of boroughs

Artist communities bring house values up.

Many neighborhoods- Coney Island

Staten Island (0.5 mill)

Most suburban

Largest landfill in world until 2001

Reclaimed for recreations use and roads to ease traffic congestion.

Free ferry excellent views of Statue of Liberty

- **Michael Bloomberg was the Mayor of NYC Elected 2 months after 9/11/01**
- **Many believed that crime would return, businesses would flee, NYC would not recover**
- **Instead, through 100s of new policies and initiatives: Bloomberg made NYC safer, stronger, greener, and more innovative than ever**

Wind Farms and companies buying wind offsets to reduce GHGs.

Tax credit green roofs.

Bloomberg's green record:

- **Focus on global climate change**
- **Smoking bans, planted trees (air quality best in 50 yrs)**
- **Advertising blitz against soft drink companies**
- **Encouraged New Yorkers to get out of their cars by pushing a congestion-pricing plan, creating pedestrian plazas, and expanding bike lanes — some 450 miles of them**

PlaNYC 2030, aims to build a greener metropolis and includes improved energy-efficiency standards for buildings, TODs

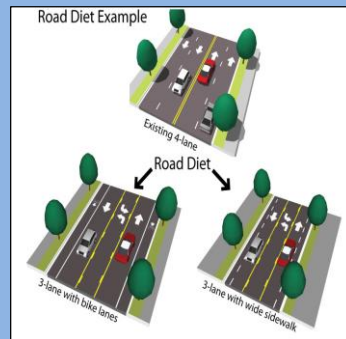**+ City will spend $20 billion on floodgates and other defenses against the rising tides**

26

13

STREETS PAC

"Dedicated to improving the safety, mobility and livability of one of New York City's greatest assets: its streets"

<u>Two initiatives</u>: Seniors are 12% of NYC's pop. but account for 36% of ped. fatalities: must target high danger areas and re-engineer streets

Slow Zones **are community-based programs that call on the City to reduce speed limits from 30 mph to 20 mph**
+ signage, speed humps, road diets, and other traffic calming elements

Road Diet Example

Existing 4-lane

Road Diet

3-lane with bike lanes   3-lane with wide sidewalk

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High density vs. sprawl:

Boston

New York City

Philadelphia

Baltimore
Washington, DC

Richmond

Why sprawl?

- **White flight, fear of cities**
- **Rural but with urban amenities**
- **Auto-oriented, huge parking lots and garages, auto-dependent**
- **Low density, single use zoning, lawns**
- **Decentralization, strip-malls**

Sprawl is: high environmental impact

14

Today some solutions: Transit-Oriented Developments (TODs) to encourage social, economic, environmental benefits
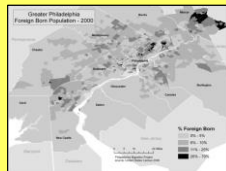
- **Mixed-use**
- **Public transport**
- **High density**
- **Pedestrian**
- **10 min. walk**

29

Philadelphia, PA (1.5 mill. 2016)

- **First modern city: grid pattern**
- **Religious tolerance but not diverse**
- **Political center of the American Revolution**

- **Early on, competition from NYC/Erie Canal),**
- **Coal, hub of railroads**
- *2009 Greenworks* **: targets, progress report**

Washington, DC (8.6 mill.)

- A planned city, central location in 1790
- Pierre Charles L'Enfant designed the city – neo-classical

- 1. on the Beltway
- 51% Black (2016) east side postwar migration; Whites in west districts. Large gaps in assets. ($284,000 versus 3500)
- Govt. workers(27%), contractors, embassies, nonprofits, lobbyists, universities, computers, media such as NPR and Washington Post

31

Economy of region:

- **Birthplace of American manufacturing**
- **Now the country's financial heart**
- **From ag. to agro-tourism, organic farming**
- **Chicken (soon to end)**
- **Amish and Mennonites- Lancaster County, PA—"Plain people"-Literal interpretation of Bible.**
- **Separate from worldliness-**
- **Old Order-no electricity**

32

Sustainable Future

- Densely populated urban centers ideal for TODs, conservation, energy efficiency….but still urban sprawl.
- New York City – Set standards for rest of nation.

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