

RURAL NYS

Open Space
Eco-Regions
Forests
Wildlife

Prof. Anthony Grande
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Wildlife Management Exercise

Exercise 15 (extra credit) looks at wildlife management areas and bird nesting sites within the counties.

It is due by the date of the final exam.

RURAL LANDSCAPE

Rural areas have seen a changing landscape since the late 1800s:

- Movement of people to the industrial cities.
- Farm abandonment.
- Increase in woodland acreage.
- Changes in the size and operation of farms.
- Encroachment as cities and suburbs grow.
- Exurbanization as city people relocate to rural areas but continue to work in the city.

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RURAL LANDSCAPE

Rural areas are divided into 3 categories:

- **Forest landscape:** densely wooded areas; tends to be located in the least accessible areas (increasing)
- **Farm landscape:** mainly agricultural land (decreasing)
- **Mixed landscape:** farmland, abandoned farmland, woodland, towns and suburban development (increasing)

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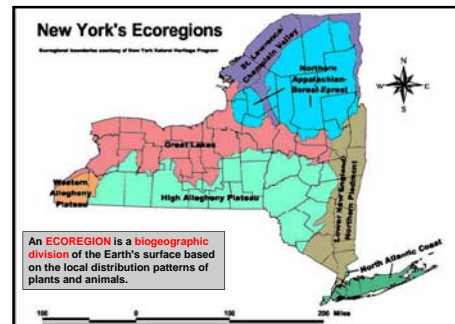
Land Use in New York State

Land Use	Acreage	% Cover
• Forest	19,533,793	62.8
• Agriculture	7,727,003	24.8
• Residential	1,352,117	4.4
• Water	994,431	3.2
• Wetland	901,990	2.9
• Commercial/ Industrial	303,979	1.0
• Parks/golf courses	239,728	0.8
• Barren land	57,857	0.2

A reduction in agricultural land has resulted in an increase in forest cover!

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Eco-Regions of NYS



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Ecozones of NYS



Reschke, C. 1990. *Ecological Communities of New York State*. New York Natural Heritage Program. New York State Department of Environmental Conservation, Latham, N.Y. 96p. +vi.

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Open Space

NYS is a national leader in the preservation of open space.

- In 1990 the **Open Space Conservation Plan** was authorized.
- In 1993, the **Environment Protection Fund** was established to buy private land.

Open Space is defined by NYS as "*Land which is not intensely developed for residential, commercial, industrial or institutional use.*"

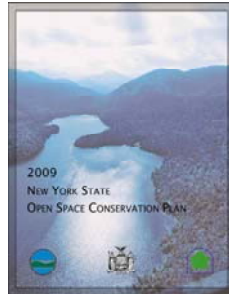
- **Open Space** can be public or private land.
- **Open Space** can be within an urban area.

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Open Space Conservation Plan

The **2009 NYS Open Space Conservation Plan** may be accessed at:
<http://www.dec.ny.gov/lands/47990.html>

It is updated as needed to address changing issues and concerns.



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Goals

- To protect water quality.
- To provide quality outdoor recreation.
- To protect and enhance scenic, historic and cultural resources that are part of NYS's heritage.
- To protect habitat for biodiversity, endangered species, and traditional pastimes.
- To provide places for education and research.
- To maintain resource-based industries as farming, forestry, fishing and tourism.
- To preserve open space for the protection and enhancement of air quality.
- To use open space conservation as a tool to combat global climate change.

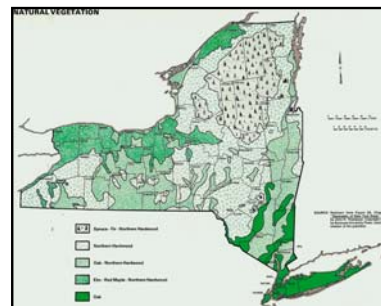
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Forests of NYS

- Of the NYS's open space, **forested land** constitutes **63%** of the land area, followed by **agriculture** with **25%** of the land area.
- Read the **Forest Cover and Uses** handout on the course home page.

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Forest Vegetation Zones



The location of the forests of NYS are dependent on:
 -climate
 -soil
 -terrain
 -human disturbance
 -state law

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Forest Cover

- The forests of NYS are relatively young.
- **Native Americans had a great impact on the forests:** cutting trees for wood and clearing land for farming. (Second growth trees were used in longhouse construction.)
- **Clearings** allowed sunlight to reach the forest floor, setting sequential vegetation cycles in motion.
- **Climax vegetation:** the best species for a set of physical characteristics.

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NYS Land Use

Land area by major use New York, 2008

Category	Acres	Percentage
Timberland	15,887,400	52%
Non-Forest Land	11,272,600	37%
Reserved Forest Land	2,973,000	10%
Other Forest Land	90,000	<1%

← Includes farmland, urban/suburban areas

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Sequential Vegetation leading to Climax Vegetation

PRIMARY SUCCESSION
for the temperate deciduous forest

0 years → 300 years

Secondary Succession

Open water

Floating plants

Emergent plants

Plants in waterlogged soil

Shrubs

Forest

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Forests of NYS

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Forest Coverage (percent by year)

Changes in New York's Forest Land Area

Year	Forest Coverage (%)
1600	90%
1775	80%
1810	63%
1825	40%
1880	20%
1950	40%
1975	50%
2010	63%

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U.S. Sources of Energy (as a percent of total use) 1850-2008

Year	Wood (%)	Coal (%)	Oil (%)	Natural gas (%)	Hydro (%)	Nuclear (%)
1850	90%	0%	0%	0%	0%	0%
1900	~40%	~40%	~10%	~5%	~5%	0%
1950	~10%	~30%	~40%	~10%	~10%	0%
2008	~10%	~20%	~30%	~15%	~8%	~17%

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Forests and History

- 1600s - Indian occupancy
- 1790s - Expansion of agriculture
- 1830s - Erie Canal
- 1850s - height of logging industry
- 1870s - American industrial revolution
- 1885 - "Forever Wild" clause in the NYS Constitution; Catskill Park created
- 1892 - Adirondack Park created
- 1920s - decline in agriculture; farmlands abandoned
- 1930s - Federal reforestation program (CCC) plants trees
- 1960 - Parkland Reclamation Act
- 1972, 1986 - Environment Quality Bond acts
- 1990 - Open Space Conservation Plan

Changes in New York's Forest Land Area

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Changes in New York's Forest Land Area

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Forested Areas of NYS

2010 aerial survey estimates that 63% of NYS is forested.

- Hamilton 98%
- Warren and Essex 92%
- Franklin 82%
- Fulton 80%
- Ulster 78%
- Sullivan 76%
- Greene and Herkimer 75%
- (NYC is 3% forested)

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Adirondack Logging Camp



LINK TO SLIDE SHOWS:

<http://www.reynoldstonnewyork.org/category/history-of-a-mill-and-logging-community-in-the-northern-new-york-state/history-of-reynoldston-ny/>

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Commercial Use of Forests



Fence Posts and Telephone Poles

- use tall, small diameter trees
- wood is chemically treated to prevent rot and control insects

Maple Syrup Production

- NYS ranks within the top three states in annual production
- Major producing areas are the colder, snowier regions

Firewood, Chips and Sawdust

- used as fuels
- used in landscaping



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Commercial Use of Forests

- **Commercial Lumbering**
 - saw milling (logs, planks, boards)
 - paper and pulp
 - furniture
 - flooring
 - construction materials
- **Christmas Tree Plantations**
 - located mainly in western NYS
 - trees are harvested after 6-20 years
 - constant recycling of acreage and planting of saplings



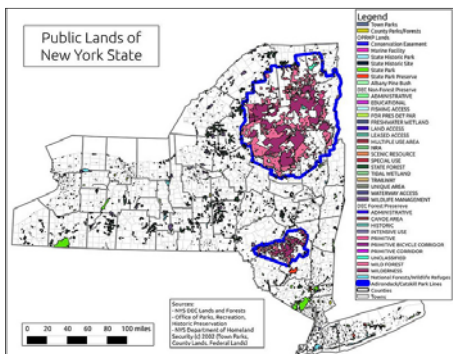
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State Land Classifications

- **Forest Preserve** – land established under Article XIV of the NYS Constitution: "The lands of the state ... constituting the forest preserve...shall be forever kept as wild forest lands."
- **State Forests** – forested land outside of the forest preserve.
- **Wildlife Management Areas** – habitat preservation; lands for the use of wildlife.
- **Conservation Easements** – land that has restricted use to preserve its character; Open Space.

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Public Lands

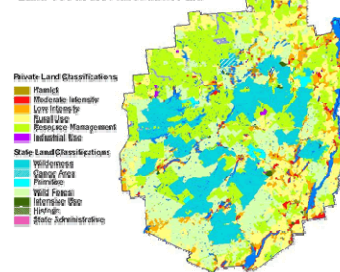


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Adirondack Park

Largest state park in the lower 48 states

Land Use in the Adirondack Park



Adirondack Park is a patchwork of public and private lands.

It is a multiuse area – from wilderness to private houses to industry.



"BLUE LINE" – the line marking the external boundary of Adirondack park.

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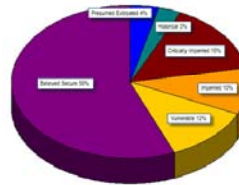
Wildlife Management

- In 1885 NYS's Bureau of Wildlife was established (then called the Fisheries, Game and Forest Commission) when wildlife populations were at one of the lowest points in history.
- Many species have been brought back from extinction through habitat restoration and species reintroduction.
- Now BoW monitors the geographic distribution of wildlife and engages in population control through regulated hunting. Also tracks invasive species.

<http://www.dec.ny.gov/outdoor/55423.html> Watchable Wildlife web site

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Status of Biodiversity



Presumed extirpated - 4%: All known occurrences are gone and there is little chance of finding new populations.

Historical - 3%: No occurrences have been reported in the last 15 years, but more survey work is needed. These may still be present within NY or they may be extirpated.

Critically imperiled - 15%: Known at five or fewer locations in the state.

Imperiled - 10%: Known at just six to 20 locations.

Vulnerable - 12%: Known at 21 to 100 locations.

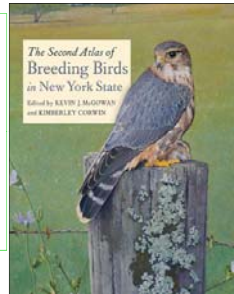
Believed Secure - 56%: Known at more than 100 sites.

<http://www.nynhp.org/>

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Breeding Bird Atlas

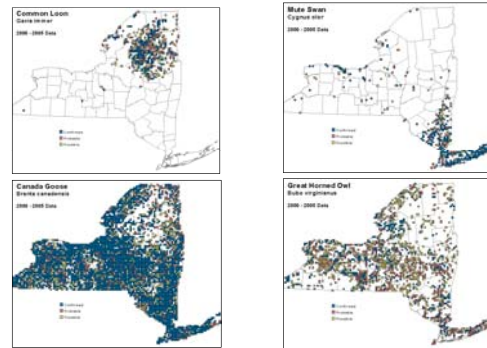
- NYS Bird Conservation Area Program (est'd. 1997) safe guards and enhances bird populations and their habitats.
- NYS Breeding Bird Atlas is comprehensive survey of the distribution of bird species in NYS and their breeding areas.
- <http://www.dec.ny.gov/cfm/extapps/bba/index.cfm> - BBA search site
- <http://www.dec.ny.gov/animals/7312.html> - BBA home page



For a list of NYS Bird species and fact sheets, see <http://www.dec.ny.gov/animals/54755.html>

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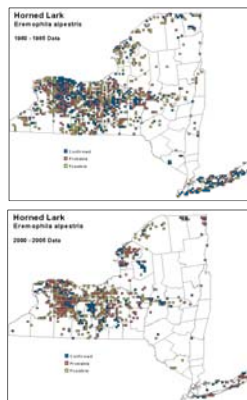
Breeding Bird Atlas



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Breeding Bird Atlas

- Study areas change over time.
- Change in sightings due to habitat change.



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Nuisance & Invasive Species

Nuisance species are those animals and birds whose habitats have been reduced by human encroachment and/or who have thrived in human areas by learning to seek food/shelter in populated areas.

Examples:

- Deer
- Black bear
- Moose
- Canadian geese
- Coyote
- Raccoons
- Skunks
- Numerous plants

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Nuisance & Invasive Species

Both the NYS DEC and Agriculture & Markets monitor the geographic distribution of non-native species in NYS.

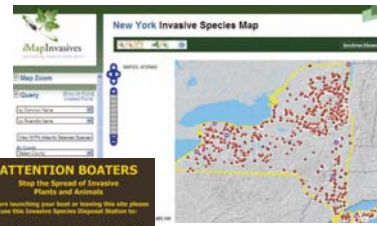
- They are considered "biological pollution."
- They have no natural enemies or controls.
- They can cause harm to the environment or to human health (only 10-15% currently do).
- Usually enter the state as "hitchhikers."

Examples:

- Asian long-horned beetle
- Sea lamprey eels
- Zebra mussels
- Big-head carp
- Potato beetles
- Snakehead fish
- Pathogens (disease carrying organism as viruses and bacteria) as those that cause West Nile disease.

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Invasive Species Awareness



Invasive Species Tracking website: <http://www.nvsi.info/>
Interactive mapping site: <http://www.imapinvasives.org/>

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Invasive Species

Snakehead fish a top-level predator without natural enemies outside of its native environment (Africa and Asia).



Asian Long-horned beetle

favors maple trees; no known biological or chemical defense; no predators in N. America.



Giant Hogweed

noxious weed whose sap irritates the skin; can grow to over 14 ft. tall; came from SE Europe.



Sea Lamprey eel attached to a native trout species from Lake Champlain a parasite that



attaches itself to the body of a fish, injects an anticoagulant and eats off of it until the fish dies; controlled by killing its eggs.



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Conservationist Magazine

Published six times a year, **Conservationist** is a NYS-focused magazine that is packed with informative and entertaining articles, first-rate photography and stunning artwork.

Articles cover a broad range of environmental and natural history related topics, including fishing, hiking, recreation, travel, hunting, and nature studies.



Conservationist connects New Yorkers to nature **\$12/year**

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