



Department of  
Environmental  
Conservation

# Wildlife of the Bristol Hills

How two centuries of changes in forest cover and hunting led to the decline and then resurgence of wildlife

February 18, 2023

Michael Palermo  
Certified Wildlife Biologist

1

2

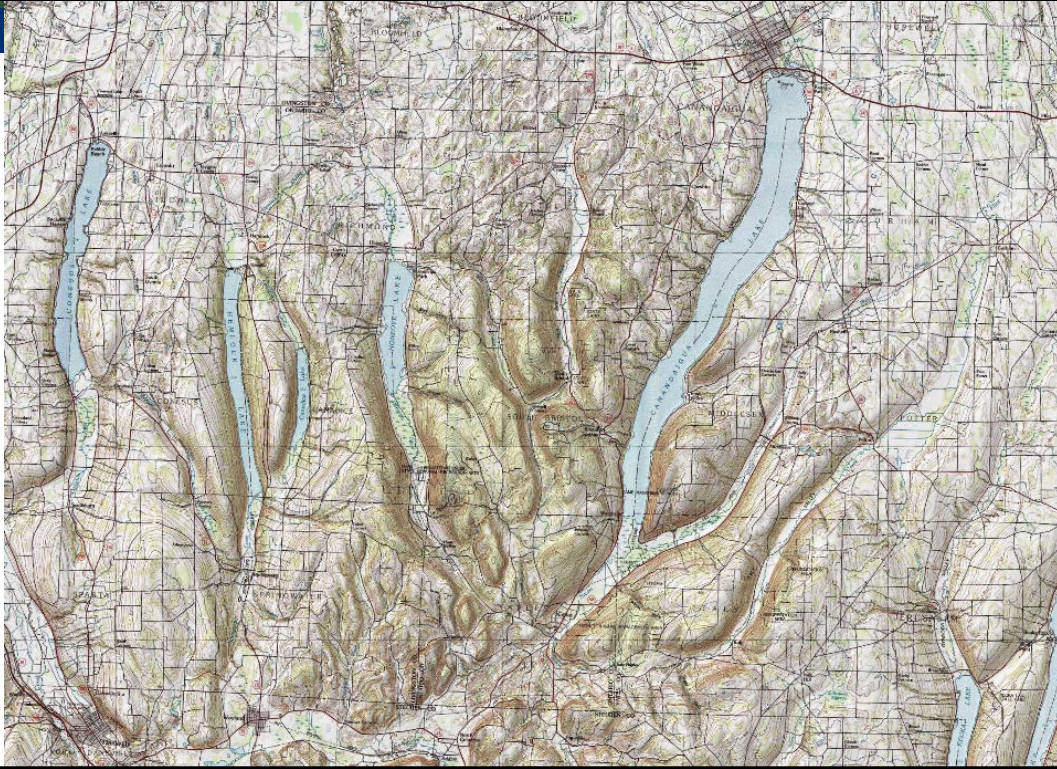
## Outline

- Habitat change over past few hundred years.
- Changes in hunting/ trapping and wildlife populations.
- Current threats to forest habitats.
- How you can help the future forests of the Bristol Hills.

A small version of the New York State logo and the text "Department of Environmental Conservation" in the bottom right corner of the slide.

2

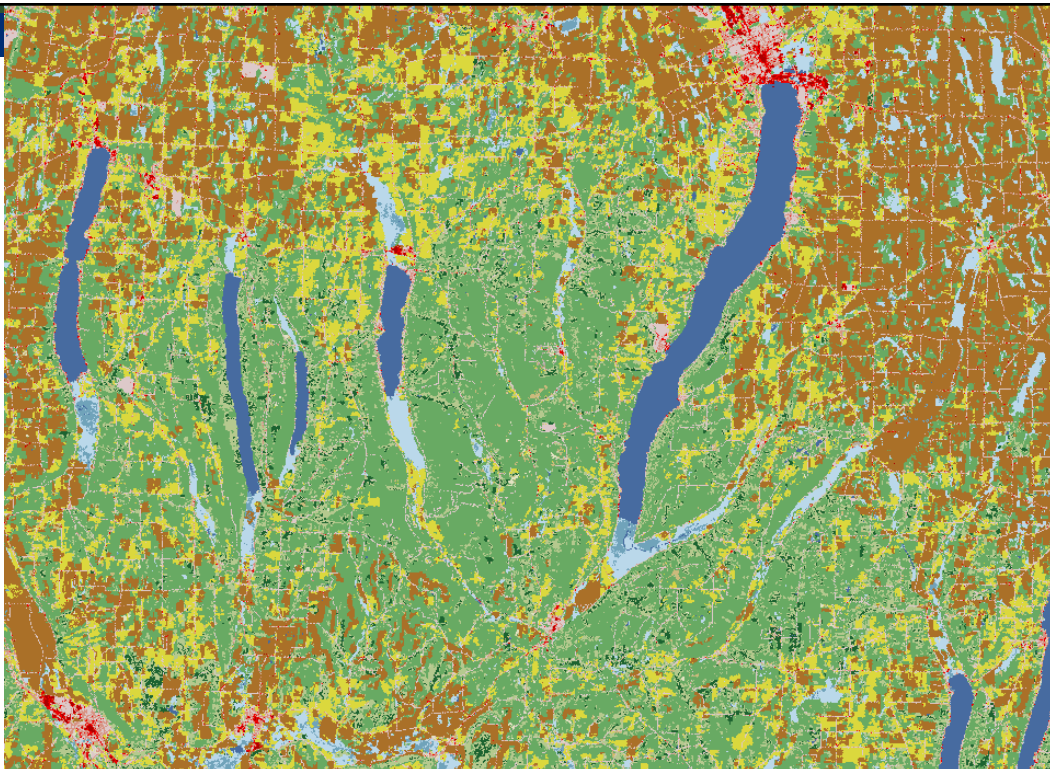
3



department of  
environmental  
conservation

3

4



department of  
environmental  
conservation

4

5

## Pre-Settlement Habitat

- ~13,000 years of indigenous people inhabitation & management.
- At time of European settlement, most of New York state was forested. (80 to 90%)

Photo: Mike Palermo

5

6



6

## Pre-Settlement Wildlife

- Gray Wolf
- Cougar
- Bobcat
- Fisher
- Beaver
- Black Bear
- White-tailed Deer
- Elk
- Turkey



Photo: Mike Palermo



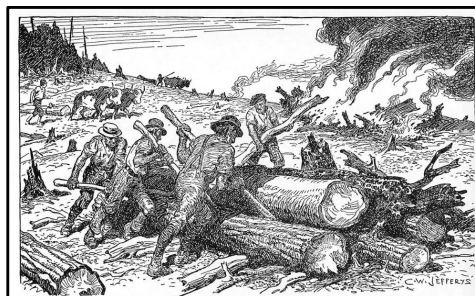
7

## Settlement & Land Changes

1779 – Sullivan Campaign.

1789 – The Town of Bristol was formed.

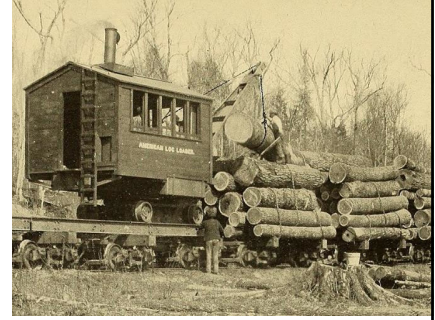
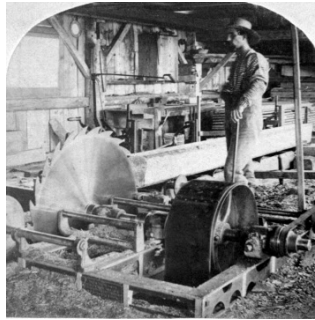
1790s – First sawmill.



8

## Logging & Land Clearing

- 1880 was the peak of land clearing era and logging intensified.
- Forest cover in NY down to 25%.
- Uses:
  - Lumber.
  - Chemical Wood.
  - Leather Tanning.
- Changes in technology.



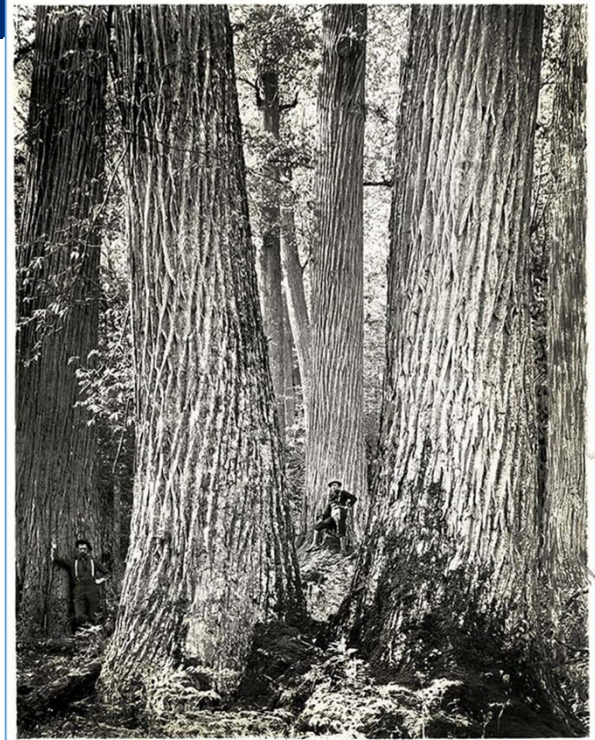
## Reforestation Begins

- After Civil War, many NY farms were abandoned.
- Infertile hilltops gradually reverted to woodlands.
- Late 1800s to 1930s, both reforestation & intense logging occurring.
- Reforestation accelerated in the 1930s.
  - 1933-1942: Civilian Conservation Corps (CCC).
- By the 1940s much of the southern tier was again forested.



## American Chestnut

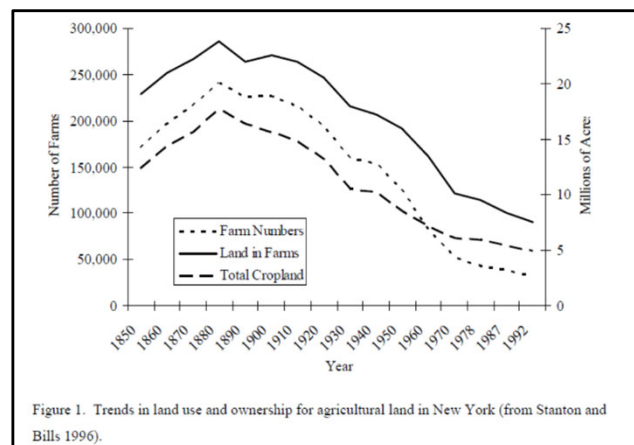
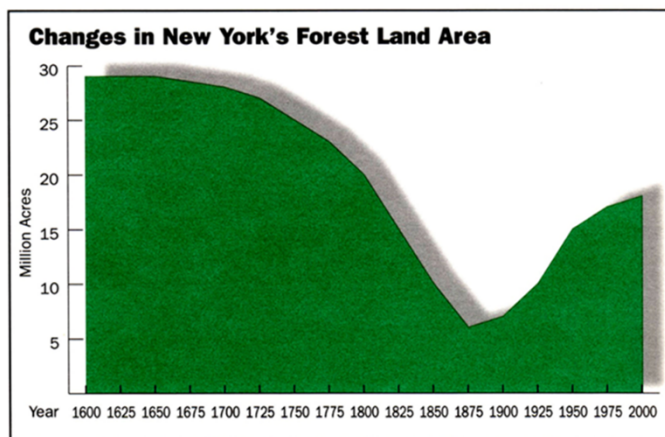
- Was a dominant overstory tree throughout eastern forest.
- Records suggest perhaps 10-20% of Bristol Hills forest.
- Early 1900s fungal blight.
- Replaced by oak and maple.



11

12

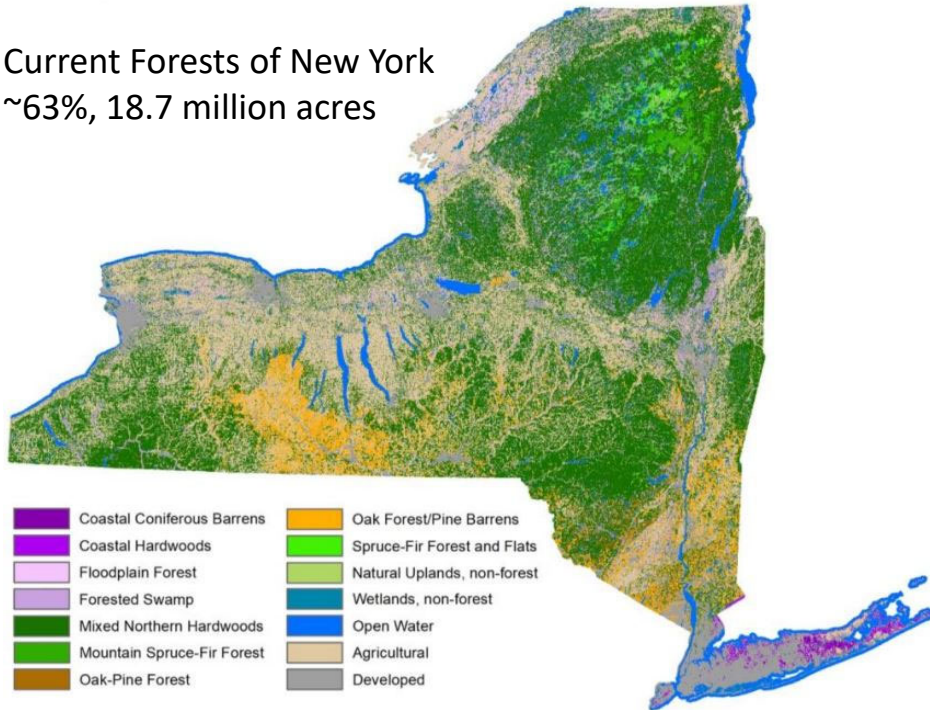
## Change Over Time



By 1993 NY was about 62% forested.

12

Current Forests of New York  
~63%, 18.7 million acres



Map of New York State's forested habitat types

Department of Environmental Conservation

# Today's Forests



Photo: Mike Palermo

# Today's Forests



Photo: Mike Palermo

15

# Today's Forests



Photo: Mike Palermo

16



# Signs of Past Clearing



Photo: Delano



# Today's Forests



Photo: Mike Palermo



# Wildlife of the Bristol Hills

## Then and Now...



## Unregulated Market Hunting and Trapping

- Very few rules until late 1800s
- 1788 - Statewide deer law closed season from Jan to July.
- 1880 - First Fish & Game Protectors employed by NY State.
- 1892 - First significant state Game Laws, revised in 1895.
- 1895 - Fisheries, Game, and Forest Commission established.
  - *Became the Conservation Department in 1926.*
  - *Became DEC in 1970.*
- 1900 - Federal Lacey Act ended market hunting.
- 1937 - Pittman-Robertson Wildlife Restoration Act
- State Game Laws constantly were adapted to population estimates and science.



## White-tailed deer

- Before European settlement, deer were present throughout NY, with varied density.
- Early 1800s increased deer numbers.
  - Opening forest, increased crop food sources.
- Mid 1800s dramatic decline of the deer population.
  - Too much forest lost.
  - Market hunting.
- 1895 – legal protections were improved.
- Population began to slowly increase.

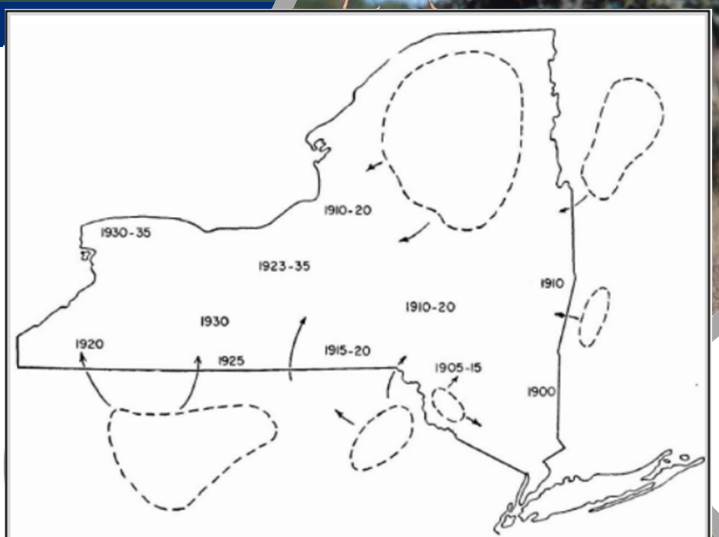


Figure 1. Major centers of deer population in 1890–1900 in New York and vicinity from which deer spread throughout the state. Dates represent approximate times that deer appeared in various parts of New York (Severinghaus and Brown, 1956).

21

22

## Beaver

- Millions in NY before European Settlement.
- Market trapping from 1620s to 1820s.
- Traps and baits improved around 1800.
- Perhaps 50 left by 1860 in remote Adirondacks and a single known colony in 1895.
- All beaver killing in state outlawed in 1895.
- Reintroduction efforts starting around 1900.
- 15,000 in NY by 1915.



22

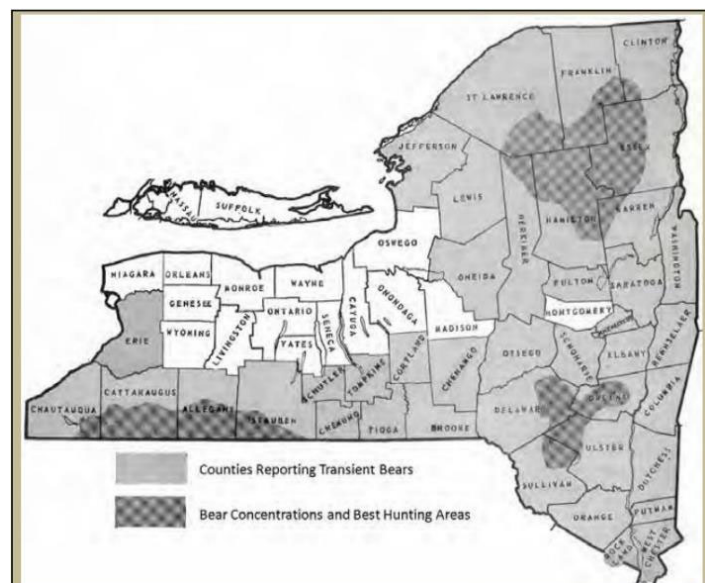
## Wild Turkey

- 1840s - Extirpated or reduced to extremely low levels.
- Cause: destruction of forest and intensive farming, unrestricted hunting.
- Late 1940s - turkeys expanded from PA into SW NY. 100-year absence.
- 1952-1959: released 3,100 game farm turkeys throughout state. Failure.
- 1959: started trap-and-transfer of wild turkeys in SW NY for release.
  - Over 35 years DEC moved 1,400 turkeys.



## Black Bear

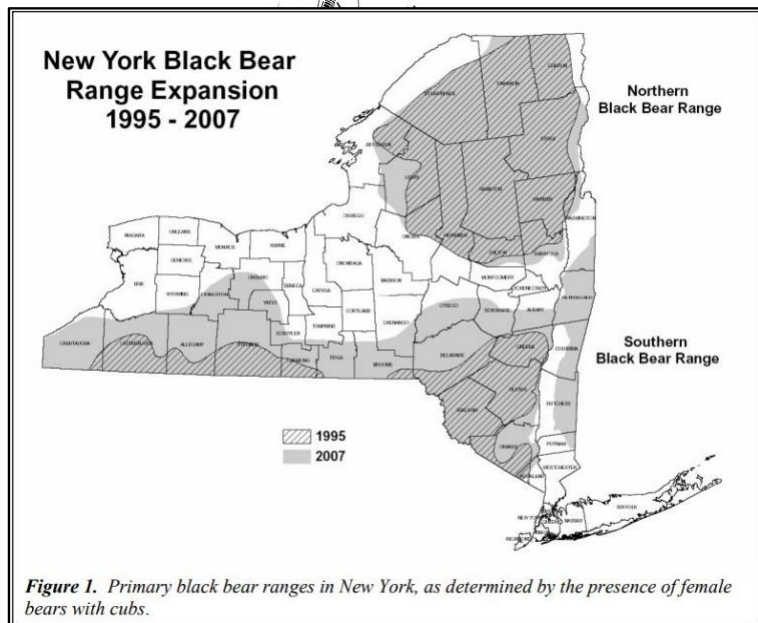
- By the late 1800s populations were driven to low levels and restricted to the most inaccessible mountain areas of the state.
- 1892-1895: \$10 bounty on black bears.
- 1903, legal protections began.



**Figure 1.** Illustration of black bear distribution circa 1950 (Drahos 1952). Dark crosshatched areas reflect the primary occupied bear range. Shaded counties had reports of transient bears but were generally unoccupied by bears.

## Black Bear

- By the late 1800s populations were driven to low levels and restricted to the most inaccessible mountain areas of the state.
- 1892-1895: \$10 bounty on black bears.
- 1903, legal protections began.



25

## Bobcat

- In 1970s, mostly limited to Adirondacks, Catskills, and Taconic.
- Estimated to have a substantial population increase since 1980.
- Targeted surveys planned for 2023/2024.



26

26

27

## Fisher

- Historically not very abundant.
- Early 1900s, just in Adirondacks, due to unregulated trapping and forest loss.
- Trapping closed from 1936 to 1948, then slowly increased where sustainable.
- Reintroduced to Catskills (1970s/80s) & PA (1994).
- Southern Tier fisher and Bristol Hills population expanded from Pennsylvania.

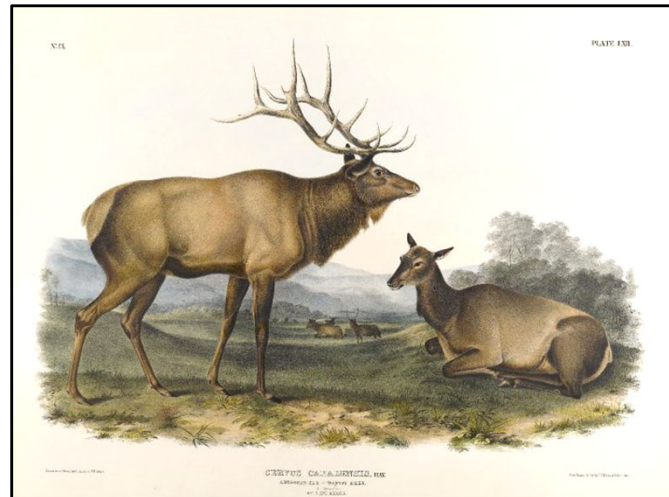


27

28

## Elk

- Mostly gone from NY by early 1800s, last record in NY 1847.
- 1880 – eastern elk subspecies declared extinct.
- Nearby reintroduced population in PA, but these are actively managed to prevent expansion.
- Unlikely to be restored in NY:
  - Opposition - concerns of driver safety and crop damage.
  - CWD risk from reintroduction.
  - 1998 feasibility study.
- Unsuccessful reintroduction attempt in NY in early 1900s in Adirondacks.



28

## Gray Wolf

- NYS Endangered Species
- Mid-1800s restricted to mountainous parts of the state.
- 1895 - bounties \$15-30 per wolf.
- Extirpated by 1900.
- Western Great Lakes Population – MN, WI, MI
- Ontario Canada Population – Algonquin Provincial Park.
- 2021 – genetically confirmed wolf shot during coyote season
- The 3<sup>rd</sup> wolf confirmed in NY in past 25 years.
- Waiting on isotope analysis to determine if this wolf has a natural diet or was likely a captive release.

### Wolf

- large nose pad
- broad snout
- short ears with rounded tips



### Coyote

- small nose pad
- narrow snout
- long ears with pointed tips



|                        | Wolves                                  | Coyotes                           |
|------------------------|---|-----------------------------------|
| <i>Weight (adults)</i> | 60–120 pounds                           | 25–45 pounds                      |
| <i>Shoulder Height</i> | 27–33 inches                            | 20–22 inches                      |
| <i>Total Length</i>    | 5–6 feet                                | 3.5–4.5 feet                      |
| <i>Ears</i>            | Erect, round & furry                    | Erect, pointed & furry            |
| <i>Head</i>            | Large, long, blocky snout, low forehead | Long, pointed snout, low forehead |

## Eastern Cougar

- NYS Endangered Species
- Extirpated. Last record 1903.
- 1895 - \$15 bounties.
- Sightings have included captive escapes/releases
  - 1993 kitten.
- 2011 - Lake George and Connecticut individual.
- No breeding population in NY.

**Thick, long, black-tipped tail.**  
The tail measures about one-third of the cougar's body length and serves to counter-balance the cougar's movements as it pursues prey and travels across the landscape.

**The coats of kittens have blackish-brown spots.**  
Spots begin to fade to dapples at about 12 to 14 weeks, and disappear completely in about 18 months.



31



31

32



32



## Restoration of Extirpated Carnivores

### Proponents:

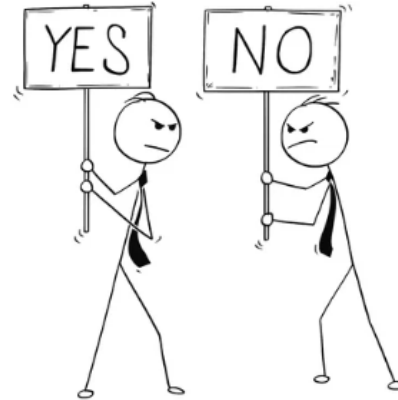
- Restored predator-prey dynamics.
- Reduced deer related problems (forest regeneration, car collisions).
- Potential eco-tourism.

### Oppositions:

- Concerns of livestock depredation.
- Possible impacts to game species.
- Potential for attacks on humans

Social surveys - some public support for large carnivores recolonizing NY through natural range expansion but less support for direct reintroductions.

DEC's intentions are to foster regional habitat connectivity for overall wildlife and environmental benefits, which could facilitate natural recolonization of large carnivores.



## Coyote

- Historically limited to midwestern prairies and arid southwest.
- Dispersed from Canada into New York, beginning around 1920.
- By late 1930s and 40s were established in Franklin County and by 1950s common in Adirondacks.
- By 1980s, were found throughout the entire state except NYC and LI.
- Genetics – 64% western coyote, 26% wolf, 10% domestic dog.



## Amazing Recoveries... New Problems...

- Eastern Towhee: ↓ 85%
- Wood Thrush: ↓ 76%
- Blue-winged Warbler: ↓ 42%
- Field Sparrow: ↓ 85%
- Black-throated Blue Warbler: ↓ 44%
- 3 billion birds lost since 1970.
- Insect decline.



## Current Threats to Forest Habitats

What will our forests look like in 100 years?

## Current Threats

- Invasive Species:
  - Insects
  - Pathogens
  - Plants
- Regeneration Issues
- Overabundant Deer
- Clearing and fragmentation



## Emerald Ash Borer

- 2009 - First found in NY.
- In all but 3 counties now.
- Very few mature trees linger.
- Thousands of acres of aftermath forest in WNY.
- Future forest concerns.



## HWA

- Hemlock Woolly Adelgid
- First found in NY in 1985.
- Spreading throughout.
- Slowly kills hemlock.



## Oak Wilt

- Fungal Disease.
- Found in Town of Canandaigua & South Bristol.
- Kills all oaks, but faster with red oak.
- Avoid pruning or wounding oak in spring and summer.



# Overabundant Deer

Consider allowing access for deer hunting



Photo: DEC



Photo: DEC



Honeysuckle

Photo: DEC



Photo: WNY PRISM

Swallow-wort



Photo: WNY PRISM

Buckthorn



Photo: WNY PRISM

Olive



Photo: Chris Evans

# Invasive Plants

## Threat of Invasive Plants

Outcompete native plants  
Support less arthropods  
Berries have less value



Photo: Mike Palermo

43

## What is Needed

Forests that are:

- Healthy
- Diverse
- Resilient
- Connected
- Unfragmented



Photo: Audubon

44

# What You Can Do To Help Wildlife & Forests



## Manage or Restore Your Forests

- Prevent or control invasives
- Create new habitat
- Avoid fragmentation or loss of forest
- Do not high grade
- Work with a DEC Cooperating Forester
- Learn:
  - NYFOA
  - ForestConnect YouTube
- Report: <https://www.nyimainvasives.org/>



47

Serviceberry



Gray Dogwood



Photo: Mike Palermo

Spicebush



Photo: Mike Palermo

Chokecherry




## Promote Native Plants

47

48

## Where to Buy Native Plants

- DEC Saratoga Nursery
  - <https://www.dec.ny.gov/animals/9395.html>
- County Soil and Water Conservation Districts
  - <https://www.ontswcd.com/tree-shrub-sale>
- DEC Buffer in a Bag
  - <https://www.dec.ny.gov/animals/77710.html#Bag>



**NEW YORK**  
STATE OF  
OPPORTUNITY

**Department of  
Environmental  
Conservation**

48





**Herbicide**

Photo: DEC



**Pick or Pull**

Photo: DEC



**Clean**

Photo: BRISM



**Insecticide**

Photo: DEC

## Prevent and Control Invasives

49

50

## DEC Private Land Foresters

- Free Stewardship Plans
- Technical Advice
- 480-a Forest Tax Law
- Brice June:
  - (585) 226-5330
  - [brice.june@dec.ny.gov](mailto:brice.june@dec.ny.gov)



Photo: DEC

*Call a DEC forester for help managing your woodlot*

50

## Possible Funding Source

- USDA Natural Resource Conservation Service
  - EQIP – Environmental Quality Incentives Program
  - CSP – Conservation Stewardship Program
- Contact your local NRCS office:
  - Geneseo: (585) 243-0030
  - Canandaigua: (585) 394-0525
  - Bath: (607) 776-7398
- DEC's Regenerate NY Grant Program
  - <https://www.dec.ny.gov/lands/119950.html>



## Thank You

- Michael Palermo
- Certified Wildlife Biologist
- 6274 East Avon-Lima Road,  
Avon, NY 14414
- [michael.palermo@dec.ny.gov](mailto:michael.palermo@dec.ny.gov)
- (585) 226-5383

### Connect with us:

Facebook: [www.facebook.com/NYSDEC](https://www.facebook.com/NYSDEC)

Twitter: [twitter.com/NYSDEC](https://twitter.com/NYSDEC)

Flickr: [www.flickr.com/photos/nysdec](https://www.flickr.com/photos/nysdec)

