



Forest Service
U.S. DEPARTMENT OF AGRICULTURE

Chautauqua County Envirothon: Wildlife Review

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2026

Definitions

- **Herbivore** – Vegetation diet
- **insectivore** – Insect diet
- **Carnivore** – Animal protein diet
- **Omnivore** – Just about anything diet!
- **Keystone Species** – Holds an ecosystem together and supports biodiversity
- **Ecosystem** – a community where biotic and abiotic factors interact
- **Biodiversity** – the variety of life within a defined ecosystem

Definitions

- **Carrying Capacity**- Maximum population size of a species that the environment can sustain indefinitely
- **Limiting Factors** – Resources a species is dependent on for survival
- **Migration** – An adaptation to carrying capacity....Seasonal movement to satisfy required resource needs.
- **Adaptation** – The evolutionary process whereby a population (species) becomes better suited to its habitat. Behavioral, physical, or physiological

Wildlife Outline

I. Identification of NYS Species: <http://www.dec.ny.gov/23.html>

- ❖ Identify NYS wildlife species by specimens, skins/pelts, pictures, skulls, silhouettes, decoys, wings, feathers, scat, tracks, sound and other common signs
- ❖ Use skull and teeth morphology to describe resource characteristics and habitat(s) of a particular specimen



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State Species of New York

Beaver

Eastern Bluebird

Eastern Brook trout

Common Snapping Turtle

Wood Frog

Red-spotted Purple / White Admiral

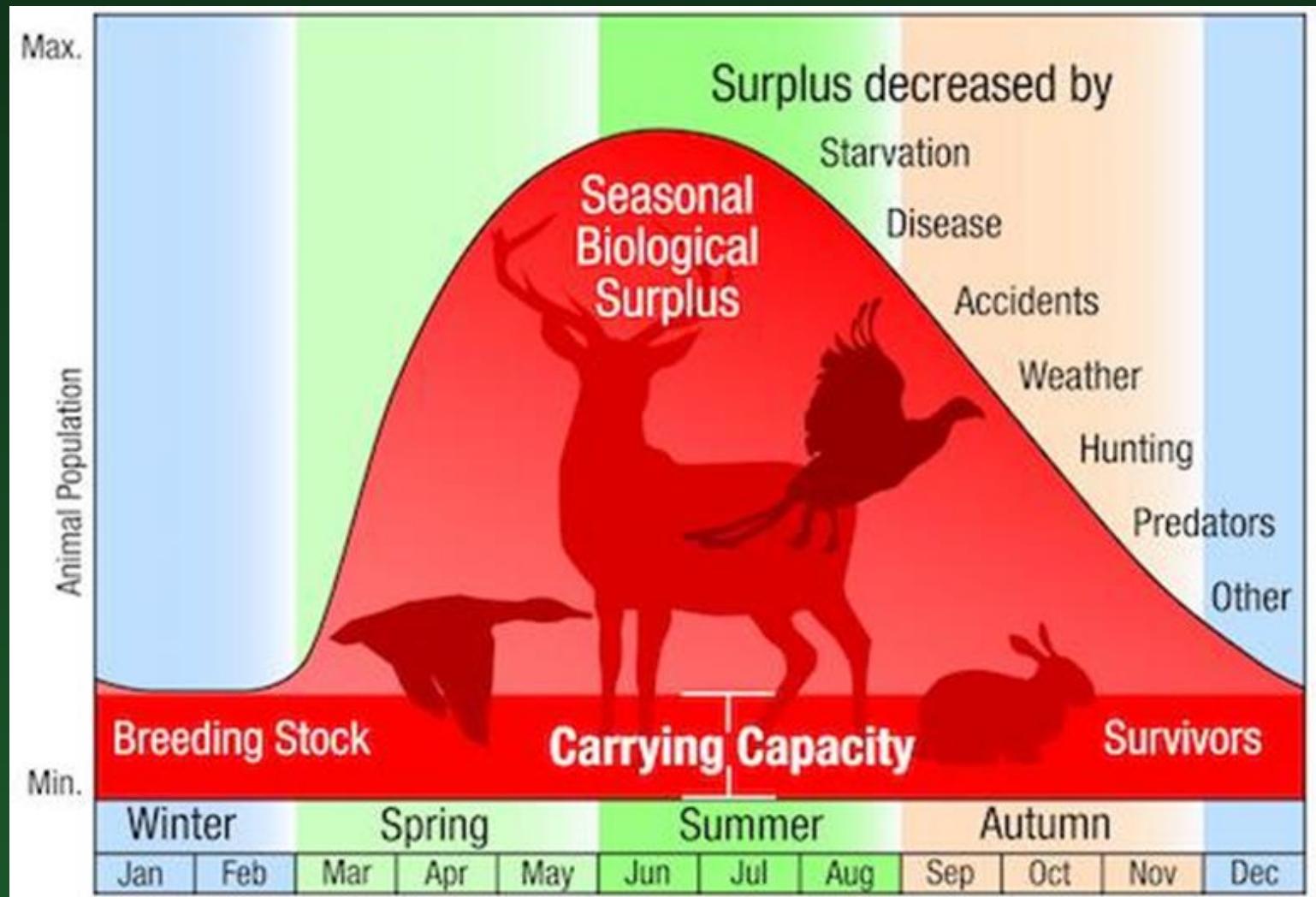


Wildlife Outline Cont.

II. Wildlife Ecology

- ❖ Basic ecologic concepts and terms
- ❖ Wildlife population dynamics
 - Carrying capacity
 - Limiting factors
- ❖ Wildlife Adaptations
 - Physical
 - Behavioral
 - Physiological
- ❖ Biodiversity
 - Genetic
 - Species
 - Ecosystem/Community

Carrying Capacity



Wildlife Adaptations

Physical

- ❖ Pectinations on grouse
- ❖ Pelt color change for hare



Adaptation cont.

Behavioral

Migration



Hibernation



Adaptation cont.



Both physical and
Behavioral

Mimicry

Batesian mimicry



Adaptation cont.

Physiological Internal



1. Freeze Solid
2. Brumation (underwater)
3. Burrow (below frostline)
4. Super Cooling (frozen migration)



Biodiversity

- ❖ the degree of variation of life forms within a given ecosystem, biome, or an entire planet.
- ❖ is a measure of the health of ecosystems.
- ❖ greater biodiversity implies greater health.
- ❖ is in part a function of climate. In terrestrial habitats, tropical regions are typically rich whereas polar regions support fewer species.



The three types of biodiversity:

- **Species Diversity** – number of species within an area, ecosystem, biome etc.
- **Genetic Diversity** – variation within the gene pool of a species
- **Ecological Diversity** – variability of habitats within a geographic area

Survival

There is more life in a one acre of a healthy wetland than there is in one acre of almost any other kind of habitat. Wetlands are virtual havens for the endangered species of the United States; about 35% of all plants and animals listed as threatened or endangered in the United States either live in wetlands or depend on them in some way.



Keystone species



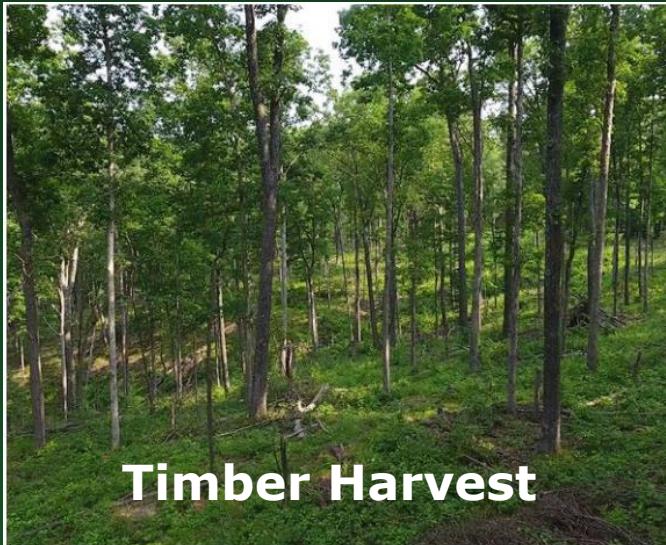
Wildlife Outline Cont.

III. Wildlife Conservation and Management

- ❖ Management practices and methods
 - Conservation
 - Enhancement
 - Protection
- ❖ Hunting regulations
- ❖ Land conflicts with human needs/desires
- ❖ Factors influencing management direction
 - Ecological
 - Financial
 - Social
- ❖ Legislation

III. Wildlife Conservation and Management

Conservation — efficient use of natural resources in a manner to ensure their existence for future generations



Timber Harvest

OAK



Prescribed Fire

The new growth from timber harvest providing sunlight and prescribed fire consuming leaf layer and eliminating undesirable vegetation provides food and cover resources to a variety of wildlife species.

Enhancement – restoration of a site to improve habitat for plants and animals while protecting human health and the surrounding environment.





Enhancement – Continued

- ❖ Hay field management practices
- ❖ Delayed harvest
- ❖ Grain field row harvest
- ❖ Federal incentives





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Protection – Hunting, collecting, fishing, gathering regulations to prevent the overharvesting or elimination (extinction) of a resource with the goal of total recovery.

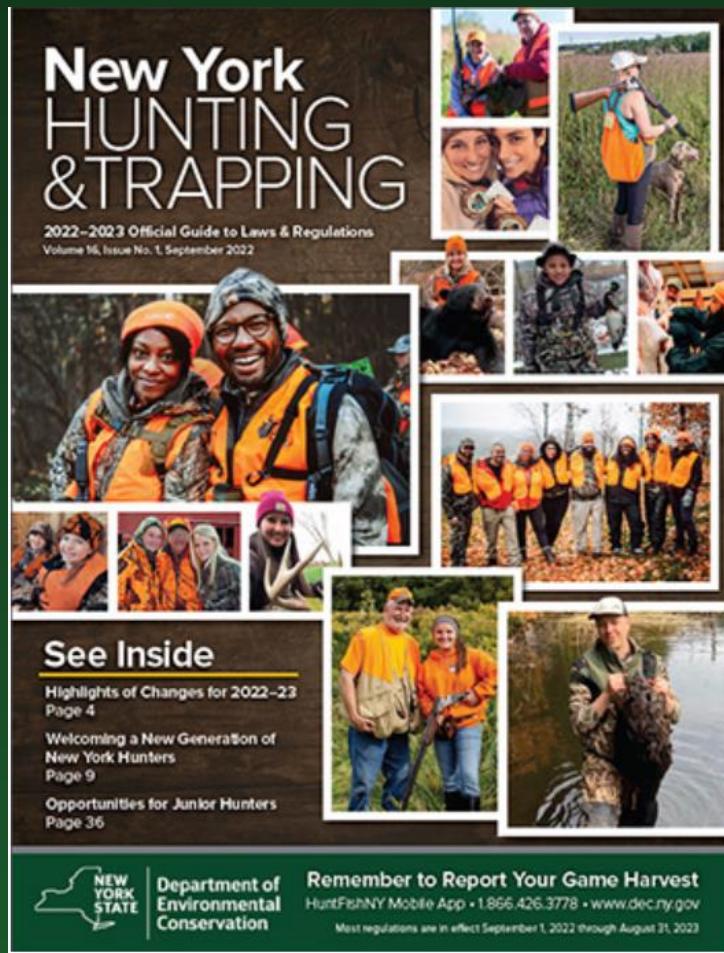




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Hunting Regulations

<https://www.dec.ny.gov/outdoor/37136.html>



Migratory Bird Regulations set through USFWS.

Migratory Bird Stamp
Federal Duck Stamp

Resident species regulated by the State of New York and seasons and bag limits set



Wildlife - Human Conflicts

- ❖ Deer in urban and suburban areas
- ❖ Murder of Crows in some cities
- ❖ Black Bears in Urban areas
- ❖ Beavers
- ❖ Coyotes in residential areas
- ❖ Canada Geese

WHY?



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Loss of habitat – urban sprawl
Lack of forest management
Habitat fragmentation – small little isolated woodlots



Factors Influencing Management Decisions

Ecological

- ❖ The right place the right time for the right reasons

Social

- ❖ Not In My Backyard!
- ❖ People have the right to live where they want or can

Financial

- ❖ Conservation and management is not cheap
- ❖ Landowner compensation

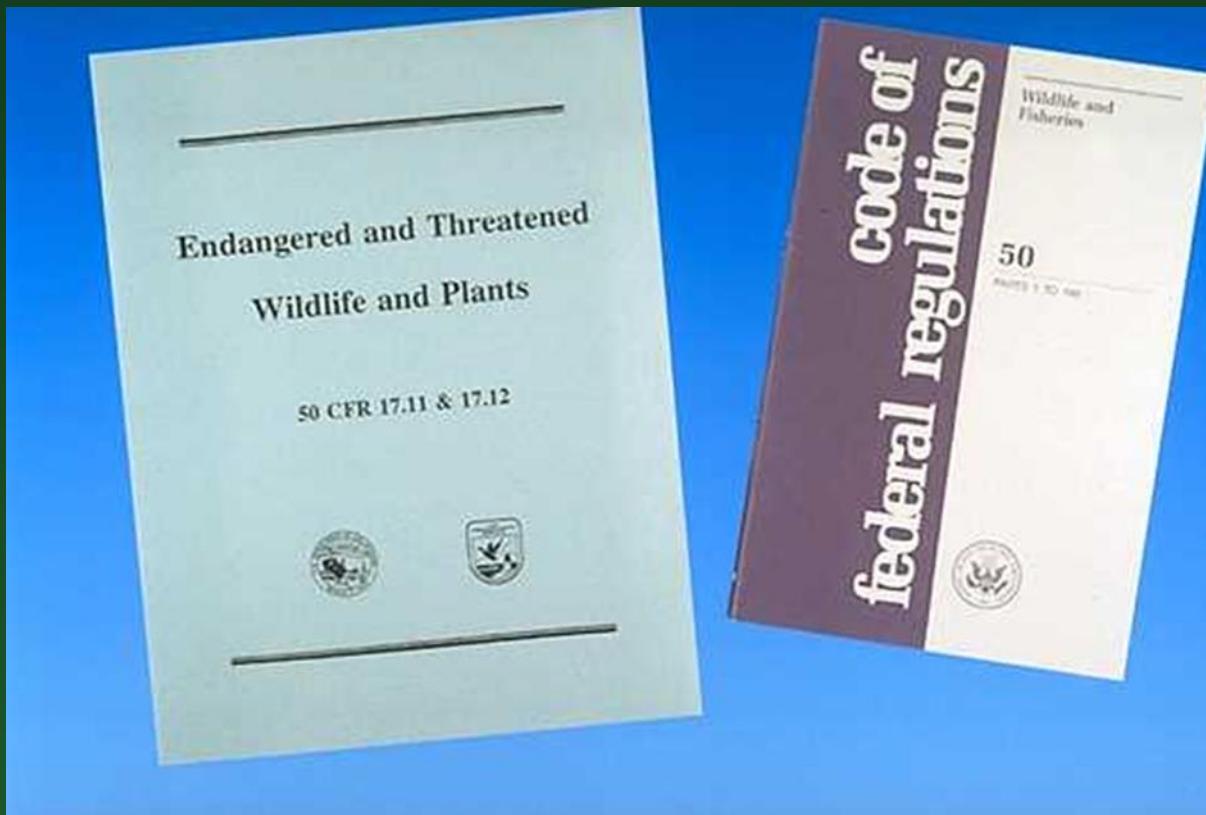


Legislation

- ❖ **The National Environmental Policy Act (NEPA) is a United States environmental law that established a U.S. national policy promoting the enhancement of the environment and established the President's Council on Environmental Quality (CEQ). This law was passed in 1970.**
- ❖ **NEPA's most significant effect was to set up procedural requirements for all federal government agencies to prepare Environmental Assessments (EAs) and Environmental Impact Statements (EISs).**
- ❖ **EAs and EISs contain statements of the environmental effects of proposed federal agency actions.**
- ❖ **NEPA's procedural requirements apply to all federal agencies in the executive branch. NEPA does not apply to the President, to Congress, or to the federal courts**



The Fish and Wildlife Service makes sure endangered and threatened species are identified, put on the endangered species list, enforces protection for them under the law, assists other government agencies with protecting endangered and threatened species, and develops plans for restoring endangered or threatened species to a secure condition



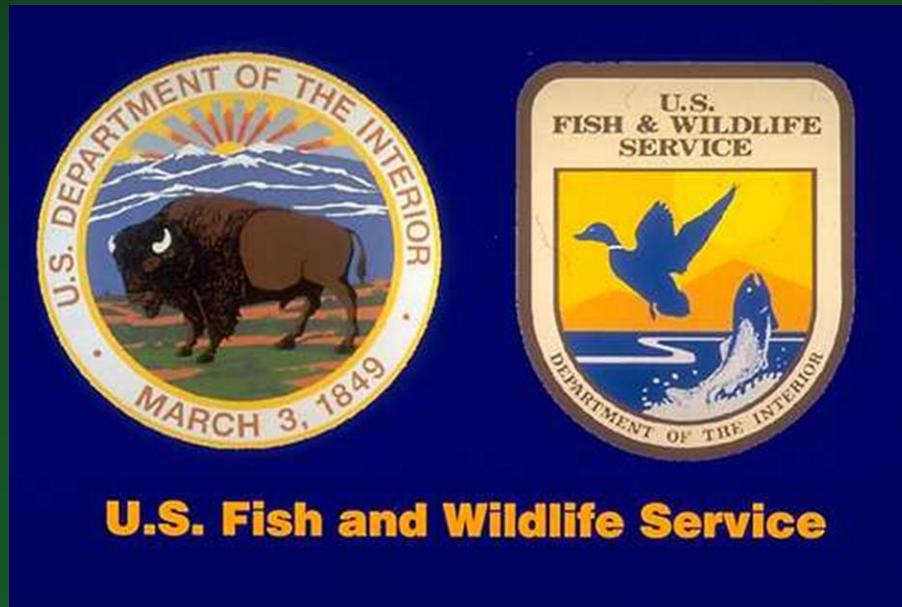


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Protection

The Endangered Species Act says it is the job of the US Fish and Wildlife Service to protect endangered and threatened species and habitats they depend upon.

Plight of the Whooping Crane, prompted the 1966 Endangered Species Act.





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**1969 Act improved upon the 1966 Act and
the 1973 Act really set the stage**

Endangered Species Act
1973





Wildlife Outline Cont.

IV. Issues Involving Wildlife and Society

- ❖ Non-native and Invasive species
 - Examples in NY
 - Environmental Impact
- ❖ Endangered, Threatened and Species of Special Concern
 - Examples in NY
 - Habitat requirements
 - Legislation
 - Terminology and factors
- ❖ Disease
 - Examples in NY

Invasive and Exotic Species of North America

any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem; and whose introduction does or is likely to cause economic or environmental harm or harm to human health.



Emerald Ash Borer



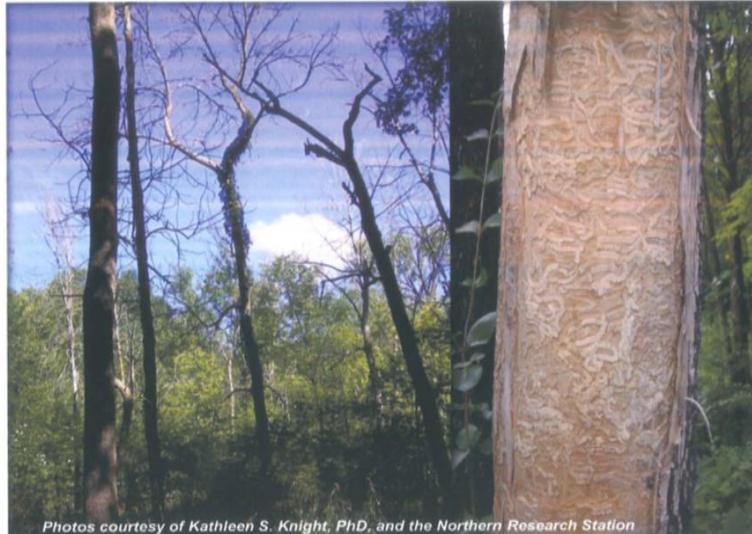


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United States Department of Agriculture

Bradford Emerald Ash Borer Remediation Project Scoping Document



Photos courtesy of Kathleen S. Knight, PhD, and the Northern Research Station



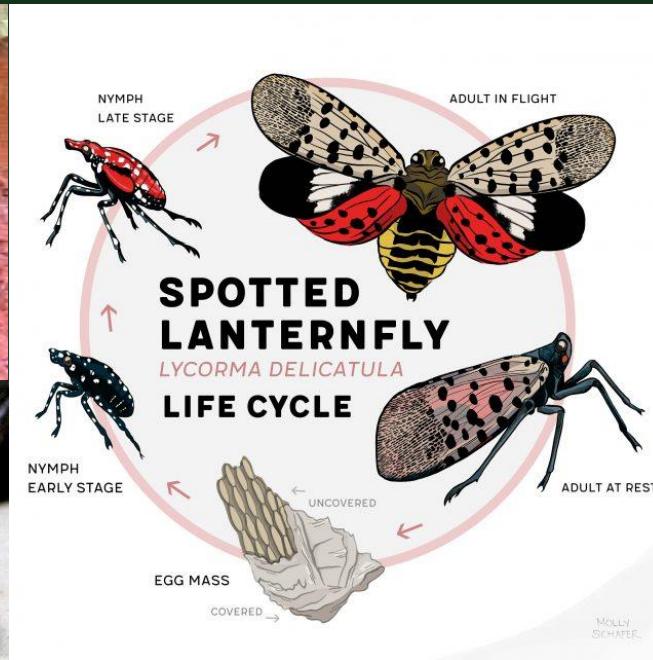
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Allegheny
National
Forest

Bradford
Ranger
District

Warren, McKean, and
Forest Counties,
Pennsylvania

**Public comment on how
YOUR public lands are
managed**



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Information



Non-Native and Invasive Plants common to New York

Giant Hogweed (*Heracleum mantegazzianum*)

Japanese Knotweed (*Polygonum cuspidatum*)(a.k.a *Fallopia japonica*)

Japanese Stiltgrass (*Microstegium vimineum*)

Mile-a-Minute Vine (*Polygonum perfoliatum*)

Pale Swallow-wort (*Vincetoxicum rossicum*)(a.k.a. *Cynanchum rossicum*)

also Black Swallow-wort (*Vincetoxicum nigrum*)(a.k.a. *Cynanchum louiseae*)

Water Chestnut (*Trapa natans*)

Hydrilla or common reed (*Phragmites austalis*)

Garlic Mustard (*Alliaria petiolata*)

Multiflora Rose (*Rosa multiflora*)

Honeysuckle (*Lonicera spp.*)

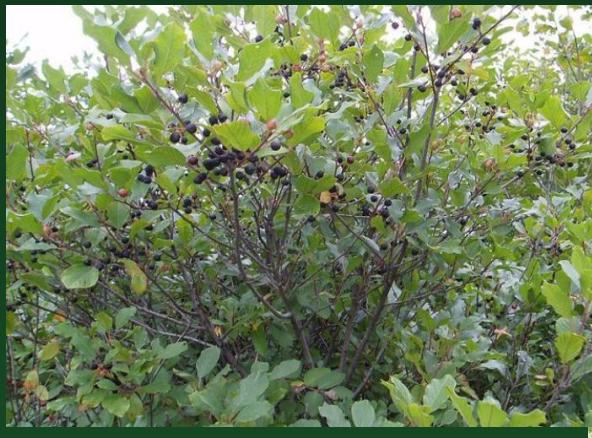
Glossy Buckthorn (*Rhamnus frangula*)

Partial list



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Non-Native and Invasive Plants common to New York





Definitions

- **Extinct** - Species is no longer living or existing.
- **Extirpated** - No longer occurring in a wild state within New York, or no longer exhibiting patterns of use traditional for that species in New York (e.g., historical breeders no longer breeding here).
- **Endangered** - Any native species in imminent danger of extirpation or extinction in New York State. **Spruce Grouse, Bog Turtle**
- **Threatened** - Any native species likely to become an endangered species within the foreseeable future in New York State. **Canada Lynx, Northern Harrier**
- **Special Concern** - Any native species for which a welfare concern or risk of endangerment has been documented in New York State. **Wood Turtle, Hellbender, New England Cottontail**

NYSDEC Listed Species

https://www.dec.ny.gov/docs/administration_pdf/lpendangerfs.pdf

	Reptiles	Amphibs.	Birds	Mammals	Fishes
Endangered	4	2	9	4	8
Threatened	5	-	11	1	11
Special Concern	6	7	19	3	5
Extirpated	11				
Extinct					



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**Extirpated
Wolverine, Gray Wolf, Cougar, Red Wolf**

**Extinct
Labrador Duck, Carolina Parakeet, Passenger
Pigeon, Heath Hen, Eastern Elk, Eskimo
Curlew, Blackfin Cisco, Blue Pike**



ESA Success Stories

**Peregrine Falcon
Bald Eagle
Whooping Crane
Grizzly Bear
Black Footed Ferret**



Wildlife Diseases

Chronic Wasting Disease (CWD)

- ❖ is a contagious neurological disease affecting deer and elk.
- ❖ degeneration of the brains of infected animals resulting in emaciation, abnormal behavior, loss of bodily functions and death.
- ❖ CWD belongs to a group of diseases known as transmissible spongiform encephalopathies (TSEs). Within this family of diseases, there are several other variants that affect domestic animals: scrapie, which has been identified in domestic sheep and goats for more than 200 years, bovine spongiform encephalopathy (BSE) in cattle (also known as "mad cow disease"), and transmissible mink encephalopathy in farmed mink
- ❖ Restriction on feeding deer to slow the spread



West Nile Virus (WNV)

- ❖ Mosquito born disease affecting a variety of birds, most notably ruffed grouse, crows, eastern towhees and blue jays.
- ❖ Birds may appear lethargic, emaciated.
- ❖ Can recover, most do not
- ❖ Can infect humans with compromised immunity but ONLY through bite of an infected skeeter.

White-Nose Syndrome (WNS)

- ❖ Fungal disease first detected in NY 2006-07
- ❖ *Pseudogymnoascus destructans* that invades and ingests the skin of hibernating bats, including their wings.
- ❖ Devastated and continues to devastate bat populations across the country.
- ❖ Has led to Federal Listing of multiple bat species

Lyme Disease

- ❖ Tick borne disease – Deer Tick
- ❖ Can infect humans and other animals
- ❖ Can be extremely debilitating or mild symptoms
- ❖ Readily treated when caught early





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