

WILDLIFE

INTRODUCTION

The development of Hawthorne has created a suburban/urban community, eliminating most of the native habitat and reducing the ability of much of the original wildlife to successfully live within the town and greater region. However, there are wildlife species that adapt to the altered environment and flourish under these conditions. By understanding the pre-European settlement vegetation and habitat, one can predict what species of wildlife would have existed in this area.

GEOGRAPHIC REGION

New Jersey's ecosystems are among the most complex and diverse in the nation (Pettigrew 1998). Hawthorne, a suburban northern New Jersey community is located within a unique ecological setting (Pettigrew 1998). This region is an ecotone, an overlap or transition zone between ecosystems, creating a dynamic overlap between northern and southern species. Northern New Jersey is an ecosystem crossroads the southern limit for northern species, and the most northern limit for southern species. The climate and soils of an area dictate the plant life and the variety of habitats produced, which then determine which species can survive in an area. Based upon the Passaic County Soils Map, the species that might have been found in Hawthorne include various wetland and water-habitat organisms along with openland and woodland creatures (**Table 9**) (Seglin 1975).

Table 9. Wildlife Habitat that could be supported by soil types found in Hawthorne. Data Modified from Passaic County Soil Survey. Ratings are 1 = good, 2 = fair, 3= poor, 4 = very poor.

Soil Type	Habitat		
	Openland	Woodland	Wetland
Alluvial (Ae)	2	2	2
Boonton (BrB, BrC and BsD)	2	1	4
Haledon (HcC)	3	2	4
Haledon, wet variant (HdA)	3	2	2
Haledon, wet variant (HdB)	3	2	4
Holyoke (HrC)	2	3	4
Preakness (Px)	2	2	2
Riverhead (RhB and RhC)	1	1	4
Rockoutcrop (RwE)	4	4	4
Urban land (UbB, UbC and UrB)	Urban lands are too variable to be rated		

HABITAT FRAGMENTATION

European settlement began the process of habitat fragmentation, which leads to a loss of species diversity (Mitchell 1992). Hawthorne’s land use and development has altered the habitat that would normally support larger species, such as, the white-tailed deer, bobcat, and coyote. We can frequently find a greater abundance of “edge” species when large areas of land are fragmented partially due to increased temperature, decreased soil moisture, and decreased relative humidity at the edge of the fragment (Mitchell 1992). These fragments become “islands” or pockets of forest or natural areas. Many species require large areas to hunt or breed, and are unable to survive in areas of less than 450 contiguous acres. Other limitations of urban environments for many species include toxic substances, automobiles, domestic pets, and some of the trappings of society, such as, overhead wires (Adams 1994). The loss of habitats, food, refuge, and space are probably of greater importance in many cases.

TERRESTRIAL SPECIES

Prior to the impacts of man, the area that is now Hawthorne would have had several different ecosystems, able to support a diverse number of species. Wetland species would have been able to thrive along the Passaic River and Goffle Brook, while much of the rest of the town would have been meadow or forest. The ridge of the First Watchung would have supported wildlife adapted to surviving on the windswept, barren slopes. Typical wetland species might have been ducks, geese, rails, herons and muskrats (Seglin 1975). Animals that might have been found in Hawthorne’s forests would have been red and gray squirrel, gray fox, white-tailed deer, and raccoon. Mammals found on the First Watchung would probably have included the eastern gray squirrel, eastern chipmunk, and possibly short-tailed shrew, long-tailed weasel, and gray fox (Godfrey 1980). Other species that might have been found in Hawthorne are animals typical of the Piedmont geologic province (**Table 10**).

Table 10. Animal Species common to the Piedmont Geologic Province. Data from Dorham Associate, Inc. 1984.

	Common Name	Scientific Name	
	Black Bear	<i>Ursus americanus</i>	
	Bobcat	<i>Felix rufus</i>	
	Cottontail rabbit	<i>Sylvilagus floridanus</i>	
	Eastern chipmunk	<i>Tamias striatus</i>	
	Eastern mole	<i>Scalopus aquaticus</i>	
	Gray fox	<i>Urocyon cinereoargenteus</i>	
	Long tailed weasel	<i>Mustela frenata</i>	
	Masked shrew	<i>Sorex cinereus</i>	
	Meadow jumping mouse	<i>Zapus hudsonius</i>	
	Meadow vole	<i>Microtus pennsylvanicus</i>	
	Mink	<i>Mustela vison</i>	
	Muskrat	<i>Ondatra zibethicus</i>	
	Opossum	<i>Didelphus marsupialis</i>	
	Raccoon	<i>Procyon lotor</i>	
	Red fox	<i>Vulpes fulva</i>	
	Red squirrel	<i>Tamiasciurus hudsonicus</i>	
	Skunk	<i>Mephitis</i>	
Although	Southern Bog lemming	<i>Synaptomys cooperi</i>	species
	Southern Red-backed vole	<i>Clethrionomys gapperi</i>	
	White-tailed deer	<i>Odocoileus virginianus</i>	

diversity may diminish due to urbanization and fragmentation, some species will adapt and flourish. Non-native species tend to survive in urban settings better than native species (Adams 1994). At least for bird species, it appears that generalists (able to use a wide range of food and habitat types) account for many of the species in an urban community, while specialists (restricted in either food or habitat choices) require a more natural habitat.

Some animals are so proficient at living in close proximity to man that they have become “pests”. In many New Jersey communities, including Hawthorne, Canada geese are thriving due to factors such as human supplemental feeding, grazing areas surrounding lakes and ponds, lower predation casualties, and higher urban temperatures. The populations of these waterfowl are having a detrimental effect on water quality in Hawthorne (Sebetich, pers. comm. 2000). Chipmunks and squirrels are able to survive in urban/suburban areas, although predation from domestic cats may reduce the numbers of chipmunks (Adams 1994). There are known examples of white-tailed deer populations surviving in urban/suburban areas such as Princeton, New Jersey, and white-tailed deer have been observed in Hawthorne by residents (Maene, pers. comm. 2000).

Small and medium-sized predators, such as shrews and moles may be found in suburban areas, in yards, and other open spaces. A few species of bats will utilize attics of houses or other buildings as roosting sites (Adams 1994). It should be remembered that almost all bats are beneficial to people, and are frequently insectivorous (Adams 1994). Human residences may provide food for some species able to forage through refuse. Raccoons would be a prime example of a refuse scavenger. Raccoons will make their homes in tree cavities, but have also utilized such human infrastructures as underground storm sewer systems for cover.

As Hawthorne is located within the boundary of Passaic County, a list of rare invertebrate species in Passaic County (**Table 11**) (NJ Natural Heritage, 2000) and vertebrates (**Table 12**) (NJ Natural Heritage, 2000) are important components of wildlife diversity in Hawthorne. Many species are small. Both Goffle Brook and the Passaic River are possible habitats for these species.

Table 11. Rare invertebrate species of Passaic County. Data from the New Jersey Natural Heritage Database, 2000.

Common Name	Scientific Name
Acadian Hairstreak	<i>Satyrium acadicum</i>
American Burying Beetle	<i>Nicrophorus americanus</i>
Checkered White	<i>Pontia protodice</i>
Columbine Dusky Wing	<i>Erynnis lucilius</i>
Eastern Lampmussel	<i>Lampsilis radiata</i>
Four-Spotted Skimmer	<i>Libellula Quadrimaculata</i>
Frosted Elfin	<i>Incisalia irus</i>
Giant Swallowtail	<i>Papilio cressphontes</i>
Gray Comma	<i>Polygonia progne</i>
Harris' Checkerspot	<i>Chlosyne harrisii</i>
Henry's Elfin	<i>Incisalia henrici</i>
Long Dash	<i>Polites mystic</i>
Mottled Dusky Wing	<i>Erynnis martialis</i>
New England Bluet	<i>Enallagma laterale</i>
Persius Dusky Wing	<i>Erynnis persius</i>
Pipevine Swallowtail	<i>Battus philenor</i>
Ringed Boghaunter	<i>Williamsonia linteri</i>
Silver-Bordered Fritillary	<i>Boloria selene myrina</i>
Silvery Checkerspot	<i>Chlosyne nycteis</i>
Southern Grizzled Skipper	<i>Pyrgus wyandot</i>
Triangle floater	<i>Alasmidonta undulata</i>
West Virginia White	<i>Pieris virginiensis</i>

Table 12. Rare vertebrate species in Passaic County. Data from the New Jersey Natural Heritage Database, 2000.

Common Name	Scientific Name
Allegheny Woodrat	<i>Neotoma magister</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Barred Owl	<i>Strix varia</i>
Bobcat	<i>Lynx rufus</i>
Bog Turtle	<i>Clemmys muhlenbergii</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Cooper's Hawk	<i>Accipiter cooperii</i>
Eastern Small-footed Myotis	<i>Myotis leibii</i>
Marbled Salamander	<i>Ambystoma opacum</i>
Northern Goshawk	<i>Accipiter Gentilis</i>
Northern Cricket Frog	<i>Acris crepitans</i>
Pied-Billed Grebe	<i>Podilymbus podiceps</i>
Red-Shouldered Hawk	<i>Buteo lineatus</i>
Southern Bog Lemming	<i>Synaptomys cooperi</i>
Timber Rattlesnake	<i>Crotalus horridus</i>
Wood Turtle	<i>Clemmys insculpta</i>

BIRD SPECIES

The personal observations of local birdwatchers have identified a diverse number of bird species in the Eight Acre Woods and Goffle Brook Park (**Table 13**). Some birds are residents and nest here, while others migrate and are just passing through (DeVos and Cowen, 2021).

Table 13. Bird Species observed in Eight Acre Woods and Goffle Brook Park.

American Crow	Golden-crowned Kinglet
American Goldfinch	Gray Catbird
American Kestrel	Great Black-backed Gull
American Redstart	Great Blue Heron
American Robin	Great Egret
Bald Eagle	Green Heron
Baltimore Oriole	Hairy Woodpecker
Barn Swallow	Hermit Thrush
Bay-breasted Warbler	Herring Gull
Belted Kingfisher	Hooded Merganser
Black Duck	Hooded Warbler
Black-and-white Warbler	House Finch
Blackburnian Warbler	House Sparrow
Black-capped Chickadee	Indigo Bunting
Black-crowned Night-Heron	Killdeer
Blackpoll Warbler	Least Flycatcher
Blue Jay	Magnolia Warbler
Blue-gray Gnatcatcher	Mallard
Blue-headed Vireo	Merlin
Brown Creeper	Monk Parakeet
Brown-headed Cowbird	Mourning Dove
Canada Goose	Nashville Warbler
Carolina Wren	Northern Cardinal
Cedar Waxwing	Northern Flicker
Chestnut-sided Warbler	Northern Mockingbird
Chimney Swift	Northern Rough-winged Swallow
Chipping Sparrow	Northern Waterthrush
Common Grackle	Orange-crowned Warbler
Common Merganser	Orchard Oriole
Common Raven	Osprey
Common Redpoll	Palm Warbler
Cooper's Hawk	Pileated Woodpecker
Dark-eyed Junco	Pine Warbler
Double-crested Cormorant	Red-bellied Woodpecker
Downy Woodpecker	Red-breasted Merganser
Eastern Bluebird	Red-headed Woodpecker
Eastern Kingbird	Red-tailed Hawk
Eastern Phoebe	Red-winged Blackbird
Eastern Towhee	Red-eyed Vireo
European Starling	Rock Dove
Field Sparrow	Rose-breasted Grosbeak
Fish Crow	Ruby-crowned Kinglet
Fox Sparrow	Ruby-throated Hummingbird

Savannah Sparrow	White-crowned Sparrow
Sharp-shinned Hawk	White-throated Sparrow
Snowy Egret	Wild Turkey
Song Sparrow	Winter Wren
Spotted Sandpiper	Wood Duck
Tree Swallow	Wood Thrush
Tufted Titmouse	Yellowbellied Sapsucker
Turkey Vulture	Yellow-crowned Night-Heron
Warbling Vireo	Yellow-rumped Warbler
White-breasted Nuthatch	

ENDANGERED, THREATENED AND SPECIAL CONCERN SPECIES

As Hawthorne is located within the boundary of Passaic County, a list of rare plant species and ecological communities in Passaic County (**Table 14**) (NJ Natural Heritage, 2014) are important components of wildlife diversity in Hawthorne. Many species are small. Both Goffle Brook and the Passaic River are possible habitats for these species.

The health of an area's animal and plant populations can be an indicator of the health and sustainability of the environment for people. The decline or disappearance of one (or more) species may signal the deterioration of the habitat. Other species, and human health and welfare, may soon follow. Preserving the future of endangered and threatened species helps preserve our own species, benefiting human health and quality of life by protecting watersheds, preserving land in its natural state, and restoring wildlife habitat. Many people also place an intrinsic value on all species (Conserve Wildlife Foundation, 2002).

Many species are naturally rare in parts of their range, especially at the periphery. New Jersey often lies at the southern periphery of the range for many "northern" species and at the northern edge of the range of many "southern" species. Therefore, a species considered rare or imperiled within the state of New Jersey is not necessarily in danger of extinction worldwide. In addition, many rare species depend on large tracts of continuous undisturbed habitat to survive. If these habitats are interrupted by developed areas, the patches may become too small to support certain species.

The NJ Endangered Species Conservation Act was signed into law on December 14, 1973 (N.J.S.A. 23:2A-1 - 15), preceding the federal Endangered Species Act by two weeks. This milestone legislation established laws to protect and restore the state's endangered and threatened wildlife whose survival in New Jersey is imperiled by loss of habitat, over-exploitation, pollution, or other impacts (NJDEP, October 6, 2004). In February 2012, NJDEP updated the Endangered and Nongame Species rules (N.J.A.C. 7:25), revising the species list based on science, upgrading the status of some recovering species and adding some declining species to the list (NJDEP Division of Fish and Wildlife, April 2, 2012 and January 18, 2011).

Table 15 presents the definitions used by NJDEP in describing the status of species. In order to better document the status or change in status of species, NJDEP solicits information from the general public concerning sightings of endangered, threatened and special concern species. People should use the appropriate reporting forms at NJDEP Division of Fish and Wildlife webpage - <https://www.nj.gov/dep/fgw/ensp/rprtform.htm>).

Table 14. Rare Plant Species and Ecological Communities presently recorded in the NJ Natural Heritage Database.

Rare Plant Species and Ecological Communities Presently Recorded in the NJ Natural Heritage Database							
Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank	
<i>County: Passaic</i>							
International Vegetation Classification							
<i>Picea mariana / (Vaccinium corymbosum, Gaylussacia baccata) / Sphagnum sp. Woodland</i>	Black Spruce Woodland Bog			HL	G3G5	S1	
<i>Chamaecyparis thyoides / Rhododendron maximum Forest</i>	Atlantic White-cedar / Great Rhododendron Swamp			HL	G2G3	S1	
Nonvascular Plant							
<i>Sphagnum fuscum</i>	Sphagnum			HL	G5	S2	
<i>Sphagnum riparium</i>	Sphagnum		E	LP, HL	G5	S1	
<i>Sphagnum squarrosum</i>	Sphagnum			HL	G5	S2	
<i>Sphagnum subsecundum</i>	Sphagnum		E	LP, HL	G5	S1	
Terrestrial Community - Other Classification							
<i>Traprock glade/rock outcrop community</i>	Traprock Glade/rock Outcrop Community				G2	S1	
Vascular Plant							
<i>Adlumia fungosa</i>	Climbing Fumitory			HL	G4	S2	
<i>Agastache nepetoides</i>	Yellow Giant-hyssop			HL	G5	S2	
<i>Agastache scrophulariifolia</i>	Purple Giant-hyssop			HL	G4	S2	
<i>Agrimonia microcarpa</i>	Small-fruit Grooveburr			HL	G5	S2	
<i>Alisma triviale</i>	Large Water-plantain		E	LP, HL	G5	S1	
<i>Andromeda polifolia var. glaucophylla</i>	Bog Rosemary		E	LP, HL	G5T5	S1	

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Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank
County: Passaic						
<i>Anemone canadensis</i>	Canada Anemone			HL	G5	SX
<i>Arabis hirsuta</i> var. <i>pyenocarpa</i>	Western Hairy Rockcress			HL	G5T5	S1
<i>Asclepias quadrifolia</i>	Four-leaf Milkweed			HL	G5	S3
<i>Asclepias verticillata</i>	Whorled Milkweed			HL	G5	S2
<i>Botrychium oneidense</i>	Blunt-lobe Grape Fern			HL	G4	S2
<i>Calystegia spithamea</i> ssp. <i>spithamea</i>	Erect Bindweed		E	LP, HL	G4G5T4T5	S1
<i>Cardamine longii</i>	Long's Bittercress		E	LP, HL	G3?	SH
<i>Carex bebbii</i>	Bebb's Sedge			HL	G5	S2
<i>Carex brunnescens</i> var. <i>sphaerostachya</i>	Round-spike Brownish Sedge		E	LP, HL	G5T5	S1
<i>Carex bushii</i>	Bush's Sedge		E	LP, HL	G4	S1
<i>Carex deweyana</i> var. <i>deweyana</i>	Dewey's Sedge		E	LP, HL	G5T5	S1
<i>Carex disperma</i>	Soft-leaf Sedge			HL	G5	S1S2
<i>Carex limosa</i>	Mud Sedge		E	LP, HL	G5	S1
<i>Carex pallescens</i>	Pale Sedge			HL	G5	S2
<i>Carex siccata</i>	Hillside Sedge		E	LP, HL	G5	S1
<i>Carex utriculata</i>	Bottle-shaped Sedge			HL	G5	S2
<i>Carex willdenowii</i> var. <i>willdenowii</i>	Willdenow's Sedge			HL	G5T5	S2
<i>Castilleja coccinea</i>	Scarlet Indian-paintbrush			HL	G5	S2
<i>Cercis canadensis</i> var. <i>canadensis</i>	Redbud		E	LP, HL	G5T5	S1
<i>Chenopodium simplex</i>	Maple-leaf Goosefoot			HL	G5	S2
<i>Clematis occidentalis</i> var. <i>occidentalis</i>	Purple Clematis			HL	G5T5	S2
<i>Coeloglossum viride</i> var. <i>virescens</i>	Long-bract Green Orchid			HL	G5T5	S2

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Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank
County: Passaic						
<i>Conioselinum chinense</i>	Hemlock-parsley		E	LP, HL	G5	S1
<i>Corallorhiza trifida</i>	Early Coralroot			HL	G5	S2
<i>Corallorhiza wisteriana</i>	Spring Coralroot			HL	G5	SX
<i>Cornus canadensis</i>	Bunchberry			HL	G5	S1S2
<i>Crataegus calpodendron</i>	Pear Hawthorn		E	LP, HL	G5	S1
<i>Crataegus chrysocarpa var. chrysocarpa</i>	Fireberry Hawthorn			HL	G5T5	S2
<i>Cuphea viscosissima</i>	Blue Waxweed			HL	G5?	S3
<i>Cynoglossum virginianum var. boreale</i>	Northern Wild Comfrey		E	LP, HL	G5T4T5	SH.1
<i>Cynoglossum virginianum var. virginianum</i>	Wild Comfrey			HL	G5T5	S2
<i>Cypripedium reginae</i>	Showy Lady's-slipper		E	LP, HL	G4	S1
<i>Desmodium cuspidatum var. cuspidatum</i>	Toothed Tick-trefoil			HL	G5T5?	S2
<i>Dirca palustris</i>	Leatherwood			HL	G4	S2
<i>Doellingeria infirma</i>	Cornel-leaf Aster			HL	G5	S2
<i>Dryopteris celsa</i>	Log Fern		E	LP, HL	G4	S1
<i>Elatine americana</i>	American Waterwort			HL	G4	S2
<i>Eleocharis halophila</i>	Salt-marsh Spike-rush			HL	G4	S2
<i>Elymus trachycaulus</i>	Slender Wheatgrass		E	LP, HL	G5	S1
<i>Epilobium angustifolium ssp. circumvagum</i>	Narrow-leaf Fireweed			HL	G5T5	S1S2
<i>Equisetum pratense</i>	Meadow Horsetail		E	LP, HL	G5	S1
<i>Eriophorum viridicarinatum</i>	Thin-leaf Cotton-grass			HL	G5	S3
<i>Galium labradoricum</i>	Labrador Marsh Bedstraw		E	LP, HL	G5	S1
<i>Gaultheria hispidula</i>	Creeping-snowberry		E	LP, HL	G5	S1

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Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank
County: Passaic						
<i>Gentiana linearis</i>	Narrow-leaf Gentian		E	LP, HL	G4G5	SH
<i>Gnaphalium macounii</i>	Winged Cudweed		E	LP, HL	G5	SH
<i>Gymnocarpium dryopteris</i>	Oak Fern			HL	G5	S1S2
<i>Helianthemum bicknellii</i>	Hoary Frostweed			HL	G5	S3
<i>Hottonia inflata</i>	Featherfoil		E	LP, HL	G4	S1
<i>Ilex montana</i>	Large-leaf Holly		E	LP, HL	G5	S1
<i>Isotria medeoloides</i>	Small Whorled Pogonia	LT	E	LP, HL	G2	S1
<i>Juncus brevicaudatus</i>	Narrow-panicle Rush			HL	G5	S2
<i>Lechea tenuifolia</i>	Narrow-leaf Pinweed		E	LP, HL	G5	S1
<i>Lemna perpusilla</i>	Minute Duckweed		E	LP, HL	G5	S1
<i>Lemna trisulca</i>	Star Duckweed			HL	G5	S2
<i>Lemna valdiviana</i>	Pale Duckweed		E	LP, HL	G5	S1
<i>Leptochloa fascicularis var. maritima</i>	Long-awn Sprangletop			HL	G5T3T4Q	S2
<i>Liatris spicata var. spicata</i>	Blazing-star			HL	G5T5?	S3
<i>Lilium philadelphicum var. philadelphicum</i>	Wood Lily			HL	G5T4T5	S2
<i>Lipocarpa micrantha</i>	Small-flower Halfchaff Sedge		E	LP, HL	G5	S1
<i>Lonicera canadensis</i>	American Fly-honeysuckle		E	LP, HL	G5	S1
<i>Lupinus perennis var. perennis</i>	Sundial Lupine			HL	G5T5?	S3
<i>Lycopodiella inundata</i>	Northern Bog Club-moss			HL	G5	S1S2
<i>Lysimachia hybrida</i>	Lowland Loosestrife			HL	G5	S3
<i>Malaxis bayardii</i>	Bayard Long's Adder's-mouth		E	LP, HL	G1G2	SH
<i>Malaxis unifolia</i>	Green Adder's-mouth		E	LP, HL	G5	SH

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Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank
County: Passaic						
<i>Melanthium virginicum</i>	Virginia Bunchflower		E	LP, HL	G5	S1
<i>Menyanthes trifoliata</i>	Buck-bean			HL	G5	S2
<i>Monarda clinopodia</i>	Basil Beebalm		E	LP, HL	G5	SH
<i>Muhlenbergia capillaris var. capillaris</i>	Long-awn Smoke Grass		E	LP, HL	G5T5?	S1
<i>Myriophyllum heterophyllum</i>	Variable-leaf Water-milfoil			HL	G5	S2
<i>Myriophyllum verticillatum</i>	Whorled Water-milfoil		E	LP, HL	G5	SH
<i>Obolaria virginica</i>	Virginia Pennywort			HL	G5	S2
<i>Panicum boreale</i>	Northern Panic Grass		E	LP, HL	G5	S1
<i>Penstemon laevigatus</i>	Smooth Beardtongue		E	LP, HL	G5	S1
<i>Phaseolus polystachios var. polystachios</i>	Wild Kidney Bean			HL	G5T5?	S2
<i>Phegopteris connectilis</i>	Northern Beech Fern			HL	G5	S2
<i>Picea rubens</i>	Red Spruce		E	LP, HL	G5	S1
<i>Platanthera ciliaris</i>	Yellow Fringed Orchid			LP, HL	G5	S2
<i>Platanthera flava var. herbiola</i>	Tubercled Rein Orchid			HL	G4?T4Q	S2
<i>Platanthera hookeri</i>	Hooker's Orchid		E	LP, HL	G4	SH
<i>Platanthera hyperborea var. huronensis</i>	Leafy Northern Green Orchid			HL	G5T5?	SX
<i>Populus heterophylla</i>	Swamp Cottonwood			HL	G5	S2
<i>Porteranthus trifoliatus</i>	Indian Physic			HL	G4G5	S2
<i>Potamogeton obtusifolius</i>	Blunt-leaf Pondweed		E	LP, HL	G5	S1
<i>Prenanthes racemosa var. racemosa</i>	Smooth Rattlesnake-root		E	LP, HL	G5T4	SH
<i>Pycnanthemum clinopodioides</i>	Basil Mountain-mint		E	LP, HL	G1G2	S1
<i>Pycnanthemum torrei</i>	Torrey's Mountain-mint		E	LP, HL	G2	S1

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County: Passaic						
<i>Ranunculus ambigenus</i>	Water-plantain Spearwort			HL	G4	S2
<i>Ranunculus fascicularis</i>	Early Buttercup		E	LP, HL	G5	S1
<i>Ranunculus flabellaris</i>	Yellow Water Buttercup			HL	G5	S3
<i>Ranunculus pusillus var. pusillus</i>	Low Spearwort			HL	G5T4?	S2
<i>Ranunculus trichophyllus var. trichophyllus</i>	Thread-leaf Water Buttercup			HL	G5T5	S2
<i>Rotala ramosior</i>	Toothcup			HL	G5	S3
<i>Rubus canadensis</i>	Smooth Blackberry		E	LP, HL	G5	S1
<i>Rubus setosus</i>	Bristly Blackberry			HL	G5	SH.1
<i>Sabatia dodecandra var. dodecandra</i>	Large Marsh-pink			HL	G5?T4T5	S2
<i>Sagittaria subulata</i>	Awl-leaf Arrowhead			HL	G4	S2
<i>Salix lucida ssp. lucida</i>	Shining Willow			HL	G5T5	S1?
<i>Salix pedicellaris</i>	Bog Willow		E	LP, HL	G5	S1
<i>Salix serissima</i>	Autumn Willow			HL	G4	S2
<i>Sanicula trifoliata</i>	Large-fruit Black-snakeroot		E	LP, HL	G4	S1
<i>Scirpus atrocinctus</i>	Black-girdle Woolgrass			HL	G5	S2
<i>Scleria pauciflora var. caroliniana</i>	Carolina Nut-rush			HL	G5T4T5	S2
<i>Scleria verticillata</i>	Whorled Nut-rush		E	LP, HL	G5	S1
<i>Scutellaria leonardii</i>	Small Skullcap		E	LP, HL	G4T4	S1
<i>Scutellaria nervosa</i>	Veined Skullcap			HL	G5	S2
<i>Selaginella rupestris</i>	Rock Spike-moss			HL	G5	S2
<i>Sphenopholis pensylvanica</i>	Swamp Oats			HL	G4	S2
<i>Spiranthes laciniata</i>	Lace-lip Ladies'-tresses		E	LP, HL	G4G5	S1

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Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank
<i>County: Passaic</i>						
<i>Stachys tenuifolia</i>	Smooth Hedge-nettle			HL	G5	S3
<i>Stellaria borealis var. borealis</i>	Boreal Starwort		E	LP, HL	G5T5	S1
<i>Streptopus lanceolatus</i>	Rosy Twisted-stalk		E	LP, HL	G5T5	S1
<i>Taxus canadensis</i>	American Yew			HL	G5	S2
<i>Tiarella cordifolia var. cordifolia</i>	Foamflower		E	LP, HL	G5T5	S1
<i>Trillium undulatum</i>	Painted Trillium			HL	G5	S2
<i>Trollius laxus ssp. laxus</i>	Spreading Globe Flower		E	LP, HL	G5T3	S1
<i>Vaccinium oxycoccos</i>	Small Cranberry			HL	G5	S2
<i>Verbena simplex</i>	Narrow-leaf Vervain		E	LP, HL	G5	S1
<i>Viburnum lantanoides</i>	Witch-hobble		E	LP, HL	G5	S1
<i>Viola hirsutula</i>	Southern Wood Violet			HL	G4	S2
<i>Viola septentrionalis</i>	Northern Blue Violet		E	LP, HL	G5	S1
<i>Wolffiella gladiata</i>	Sword Bogmat		E	LP, HL	G5	S1
<i>Xyris montana</i>	Northern Yellow-eyed-grass		E	LP, HL	G4	S1.1

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Table 15. Definitions of Species Status. Presents the definitions used by NJDEP in describing the status of species.

STATE STATUS	STATE STATUS DEFINITIONS
	Animals: Two animal lists provide state status codes after the Endangered and Nongame Species Conservation Act of 1973 (N.J.S.A. 23:2A-13 et. seq.): the list of endangered species (N.J.A.C. 7:25-4.13) and the list defining status of indigenous, nongame wildlife species of New Jersey (N.J.A.C. 7:25-4.17(a)). The status of animal species is determined by the Endangered and Nongame Species Program (ENSP), with the review and approval of the Endangered and Nongame Species Advisory Committee. Status for animals separated by a slash (/) indicate a dual status. First status refers to the state breeding population, and the second status refers to the migratory or winter population.
E	An endangered species is one whose prospects for survival within the state are in immediate danger due to one or many factors - a loss of habitat, over exploitation, predation, competition, disease. An endangered species requires immediate assistance or extinction will probably follow.
T	A threatened species is a species that may become endangered if conditions surrounding the species begin to or continue to deteriorate.

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SC	The term Special Concern applies to animal species that warrant special attention because of some evidence of decline, inherent vulnerability to environmental deterioration, or habitat modification that would result in their becoming a Threatened species. This category would also be applied to species that meet the foregoing criteria and for which there is little understanding of their current population status in the state.
S	A stable species is one whose population is not undergoing any long-term increase/decrease within its natural cycle.
U	An undetermined species is one about which there is not enough information available to determine the status
Plants: Plant taxa listed as endangered are from New Jersey's official Endangered Plant Species List (N.J.A.C. 7:5C – 5.1).	
E	Native New Jersey plant species whose survival in the State or nation is in jeopardy.
FEDERAL STATUS	FEDERAL STATUS DEFINITIONS
LE	Taxa formally listed as endangered .
LT	Taxa formally listed as threatened .
REGIONAL STATUS	REGIONAL STATUS CODES FOR PLANTS AND ECOLOGICAL COMMUNITIES
LP	Indicates taxa listed by the Pinelands Commission as endangered or threatened within their legal jurisdiction. Not all species currently tracked by the Pinelands Commission are tracked by the Natural Heritage Program. A complete list of endangered and threatened Pineland species is included in the NJ Pinelands Comprehensive Management Plan.
HL	Indicates taxa or ecological communities protected by the Highlands Water Protection and Planning Act within the jurisdiction of the Highlands Preservation Area.
GLOBAL & STATE CODE	The Nature Conservancy developed a ranking system for use in identifying elements (rare species and ecological communities) of natural diversity most endangered with extinction. Each element is ranked according to its global, national, and state (or subnational in other countries) rarity. These ranks are used to prioritize conservation work so that the most endangered elements receive attention first. Definitions for element ranks are after The Nature Conservancy (1982: Chapter 4, 4.1-1 through 4.4.1.3-3).
GLOBAL CODE	GLOBAL ELEMENT RANK DEFINITIONS
G1	Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.
G2	Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.
G3	Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout its range; with the number of occurrences in the range of 21 to 100.
G4	Apparently secure globally ; although it may be quite rare in parts of its range, especially at the periphery.
G5	Demonstrably secure globally ; although it may be quite rare in parts of its range, especially at the periphery.
GH	Of historical occurrence throughout its range i.e., formerly part of the established biota, with the expectation that it may be rediscovered.
STATE CODE	STATE ELEMENT RANK DEFINITIONS

S1	Critically imperiled in New Jersey because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres). Elements so ranked are often restricted to very specialized conditions or habitats and/or restricted to an extremely small geographical area of the state. Also included are elements which were formerly more abundant, but because of habitat destruction or some other critical factor of its biology, they have been demonstrably reduced in abundance. In essence, these are elements for which, even with intensive searching, sizable additional occurrences are unlikely to be discovered.
S2	Imperiled in New Jersey because of rarity (6 to 20 occurrences). Historically many of these elements may have been more frequent but are now known from very few extant occurrences, primarily because of habitat destruction. Diligent searching may yield additional occurrences.
S3	Rare in state with 21 to 100 occurrences (plant species and ecological communities in this category have only 21 to 50 occurrences). Includes elements which are widely distributed in the state but with small populations/acreage or elements with restricted distribution, but locally abundant. Not yet imperiled in state but may soon be if current trends continue. Searching often yields additional occurrences.
S4	Apparently secure in the state, with many occurrences.
S5	Demonstrably secure in state and essentially ineradicable under present conditions.
SH	Elements of historical occurrence in New Jersey. Despite some searching of historical occurrences and/or potential habitat, no extant occurrences are known. Since not all of the historical occurrences have been field surveyed, and unsearched potential habitat remains, historically ranked taxa are considered possibly extant, and remain a conservation priority for continued field work with the expectation they may be rediscovered.
B	Refers to the breeding population of the element in the state.
N	Refers to the non-breeding population of the element in the state.
Note: To express <i>uncertainty</i> , the most likely rank is assigned and a question mark added (e.g., G2?). A range is indicated by combining two ranks (e.g., G1G2, S1S3).	
Source: NJDEP Division of Fish and Wildlife, March 22, 2010	

PROTECTING ENDANGERED, THREATENED AND SPECIAL SPECIES

WILDLIFE ACTION PLAN

NJDEP Division Fish and Wildlife prepared a Wildlife Action Plan (WAP) in 2008, required by the US Fish and Wildlife Service in order to qualify for future federal funds through the State Wildlife Grants program. This program provides federal funds to states for the conservation of species that are endangered, threatened, or have special conservation needs. A 25% match, provided by citizen contributions, is required. NJ has received approximately \$1.2 million dollars of State Wildlife Grants funding each year (NJDEP, January 23, 2008). The report states,

"The greatest threats to NJ's natural resources include habitat loss, destruction, alteration, and fragmentation. This has been a recurring theme within NJ for years as it is the most densely populated state in our nation with an annually increasing population requiring additional homes, roads, commercial buildings, schools, etc. Additional threats include, but are not limited to, invasive species (flora and fauna, aquatic and terrestrial), pollution, and unsustainable land management practices." (NJDEP, January 23, 2008)

A WAP specific to each region identifies habitats, wildlife of greatest conservation need, and threats. Conservation goals and actions are identified and prioritized, and potential partnerships are outlined with landowners, the public and conservation organizations, wildlife professionals and local, state and federal agencies. Hawthorne is in the Northern Highlands of the Skylands Landscape region.

On April 6, 2022, Borough of Hawthorne re-adopted a resolution in support of New Jersey's Wildlife Action Plan (Hawthorne, April 6, 2022).

FISH SPECIES

Fish species found in the Borough of Hawthorne reside in two waterways: Goffle Brook, and the Passaic River. Goffle Brook has been sporadically sampled (**Table 16**) (Sebetich 2009) and does provide habitat for some species of fish. As the sampling was not thorough, more species may reside in Goffle Brook than are listed. The Passaic River was considered highly toxic to fish for much of the Twentieth Century, but is now slowly beginning to see a return of native fish species including anadromous species as its quality improves (**Table 17**) (Papson, pers. comm. 2000). The anadromous fish, species whose life cycle contains freshwater and salt-water stages are extremely sensitive to pollution and when spawning will avoid a polluted river system. Recently, several anadromous species including shad and striped bass have been spotted below the Dundee Dam, indicating significant water quality improvement, as these species were absent from the river for many years (Papson, Pers. comm. 2000).

Table 16. Fish sampled in Goffle Brook. Sebetich 2009.

Common Name	Scientific Name
American eel	<i>Anguilla rostrata</i>
Banded killifish	<i>Fundulus diaphanus</i>
Black crappie	<i>Pomoxis nigromaculatus</i>
Blacknose dace	<i>Rhinichthys atratulus</i>
Bluegill sunfish	<i>Lepomis macrochirus</i>
Brown bullhead	<i>Ictalurus nebulosus</i>
Carp	<i>Cyprinus carpio</i>
Catfish	<i>Siluriformes</i>
Largemouth bass	<i>Micropterus salmoides</i>
Pumpkinseed sunfish	<i>Lepomis gibbosus</i>
Sculpin	<i>Scorpaeniformes</i>
Shiner	<i>Cypriniformes</i>
Tessellated darter	<i>Etheostoma olmstedi</i>
White sucker	<i>Catostomus commersoni</i>

Table 17. Fish sampling of Passaic River, Paterson, FishTrack, Division of Fish & Wildlife –
Bureau of Freshwater Fisheries, NJDEP, 2010

Common Name	Scientific Name
American eel	<i>Anguilla rostrata</i>
Banded killifish	<i>Fundulus diaphanus</i>
Bluegill sunfish	<i>Lepomis macrochirus</i>
Carp	<i>Cyprinus carpio</i>
Golden shiner	<i>Notemigonus crysoleucas</i>
Largemouth bass	<i>Micropterus salmoides</i>
Pumpkinseed sunfish	<i>Lepomis gibbosus</i>
White sucker	<i>Catostomus commersoni</i>
Alewife	<i>Alosa pseudoharengus</i>
Gizzard Shad	<i>Dorosoma cepedianum</i>
White Perch	<i>Morone Americana</i>
Goldfish	<i>Carassuis auratus</i>
Blueback Herring	<i>Alosa aestivalis</i>
Brown bullhead	<i>Ameiurus nebulosus</i>
Black crappie	<i>Pomoxis nigromaculatus</i>
Redbreast Sunfish	<i>Lepomis auritus</i>
Silvery Minnow	<i>Hybognathus amarus</i>
Satin Shinner	<i>Cyprinella analostana</i>