

# An Environmental Resource Inventory of the Borough of Hillsdale, New Jersey Bergen County

Version: March 2022



## Part II of II

Prepared by the Hillsdale Environmental Commission

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## H. Vegetation and Wildlife

Version 1: Prepared by Fred N. Rubel, M.S., QEP, Member, Hillsdale Environmental Commission. Last updated, March 19, 2022. Please contact the Hillsdale Environmental Commission to offer any suggested corrections/changes.

**Overview** - One might think that a fairly well built-out community such as Hillsdale would not have much wildlife. But the fact is, wildlife exists throughout Hillsdale. Many of us are so accustomed to seeing it that we fail to recognize wildlife for what it is.

When considering what we should consider to be "wildlife," one might prefer to identify only those living things that are present 'naturally' - - without human intervention. This approach would fail to describe the great variety of plants and animals that abound in Hillsdale - - and even thrive in our mostly built-up community. An attempt at using this narrow definition would quickly show this to be unworkable. We humans interact with and influence change our environment and the organisms within our environment in many ways.

To more accurately describe 'what exists' in the way of vegetation and wildlife here, this inventory will consider all manner of living things that co-inhabit this little slice of earth that we call Hillsdale - - whether they exist as a result of human influence or not. This inventory of the wildlife of Hillsdale will employ a wide, encompassing definition, so as to provide the greatest chance for recording the big picture that otherwise can easily be overlooked in terms of the other organisms that are present in and around us daily. The following is an overview of the biota (biological organisms) in Hillsdale. As to whether 'naturally occurring' or artificially 'introduced' species, or of perceived value or creating harm, the matter of invasive/native species is mostly not addressed in order to avoid the risk of endless discussion.

To achieve a 'present-day relevant' document, this Section intends to record in a qualitative (non-quantitative) way the wildlife and vegetation that is currently

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present in Hillsdale, both 'natural'/'native,' as well as introduced. To the extent known, some historical context is also provided as to the vegetation and wildlife that originally existed in the area. This may serve as a basis for discussion regarding how we might maintain and even improve the variety of wildlife and vegetation present in Hillsdale, to the extent that is possible.

"Ecoregion" is a term used to classify areas that are generally similar in their ecosystems, and the type, quality, and quantity of environmental resources. The classification identifying general purpose regions is useful for structuring and implementing ecosystem management strategies across political boundaries (such as state lines) and across agencies. Ecoregions stratify the environment according to its probable response to disturbance, and recognize the spatial differences in the capacities and potentials of ecosystems. Application of the Ecoregion framework is useful for: 1) Inventorying and assessing national and regional environmental resources; 2) Setting regional resource management goals; 3) Establishing geographical research frameworks; and 4) Developing regional biological criteria and water quality standards.<sup>1</sup>

Hillsdale lies within the "Glaciated Triassic Lowland" [er64e] "Ecoregion."<sup>2</sup> The terrain of this Ecoregion is mostly flat but locally irregular, with depressions and low hills and ridges. The bedrock of this region is Triassic sedimentary rock, mostly covered by extensive till and drift left over from the geologically relatively recent Wisconsin glaciation, of which Hillsdale is believed lie at its historic southern-most extent. The till is derived from acidic red sandstone and shale, itself derived from Triassic sediments. This type of till create acidic soils that are markedly less fertile than those formed from the sedimentary rocks of the unglaciated Triassic lowland regions. Soil textures vary considerably, as the till is a mixture of gravel, sand, silt, and clay. There are thus a mix of well-drained and poorly-drained sites throughout the region.<sup>3</sup>

**H.1 Dominant Vegetation Types/Land Cover** - The New Jersey Shade Tree and Community Forestry Assistance Act was passed on December 5, 1996 to promote more livable communities through the care and management of trees, and provides

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community grants for activities that advance this objective. In concert with the Department of Public Works, the Environmental Commission actively seeks to help maintain accreditation within the State of New Jersey's Community Forestry Program for the Borough of Hillsdale. An abundance of trees helps to preserve water quality, abates noise, and enhance the ambience and character of a community. In the interest of preserving and protecting trees within the Borough, Hillsdale has codified the preservation of trees in the Borough under Section 310 of its regulatory code (currently, Ordinance No. 21-14, adopted 9/14/2021).

For participation in the State's Forest Stewardship Program, the NJDEP requires that tracks of private land be a minimum of 5 acres of forest land or land capable of being a forest and scheduled to be forested.<sup>4</sup> It defines forest land as being a continuous area of land that lies wholly within a property and has at least 10% canopy cover or is capable of achieving 10% canopy cover over the plan period. Forest Stewardship Plans have a duration of 10 years.

**H.2 Native and Current Species of Vegetation** - The original (pre-human settlement) vegetative cover of our specific area and our region is not well known. The general area in which Hillsdale is located is a region broadly transitional from Appalachian Oak forests that are farther south, and Northern Hardwood forests that are common in New England. On drier sites native species were probably a mix of oaks, including northern red oak (*Quercus rubra*), white oak (*Quercus alba*), and black oak (*Quercus velutina*), and also American chestnut (*Castanea dentata*) and hickories (*Carya sp.*). Moister sites, including valleys, sheltered ravines, and north-facing slopes supported northern hardwood forests with sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), yellow birch (*Betula alleghaniensis*), and eastern hemlock (*Tsuga canadensis*).<sup>5</sup>

For a glimpse into the variety of mostly uncultivated trees that are native to our area, one might take a look at the trees located in current day Beechwood Park, and as described in 1970 by Jack Stubbs of the then "Hillsdale Conservation Commission."<sup>6</sup> Also at Beechwood Park, some time prior to 1980 a large truck-mounted rig was used to obtain geologically historic soil borings. Pollen was

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recovered from a thin clayey peat layer in interstadial lacustrine gray clay from those borings. The clay was beneath sand and gravel that was coextensive with the adjacent kame. The large fairly shallow kettle bog, set in sandy outwash against kames constructed at the distal end of a very large yellow- brown till drumlin, yielded an apparently continuous post-glacial vegetational record. Birch, pine and alder were the predominant arboreal (tree) species with small pollen forms of the birch and pine much more abundant. Spruce and alder were also present. Grass, aquatics, lilaceae and sedge are the most abundant non-arboreal (plant) pollen with some subordinate heath and Typha tetrads. They both indicate the presence of an open boreal forest and the associated subarctic climate.<sup>7</sup>

Table H.2 is an inventory (incomplete) of vegetation present in open spaces and built-upon lands in present-day Hillsdale. It is expected that this list will be added to and refined as further input by the citizens of Hillsdale using Form H.5 contained in this Section. Table H.2.a is a list of deer-resistant plantings that was published by the Rutgers New Jersey Agricultural Experiment Station.<sup>8</sup> Table H.2.b contains a list of desirable flowering plants suggested for plantings. Table H.2.c provides a recommended list of vegetation for "Native Plant Backyard Gardening" from the Bergen County Audubon Society. An example of a creatively planted landscape in Hillsdale is the Westervelt-Demarest house (737 Hillsdale Ave.) which was awarded "Certified Wildlife Garden" status by the Bergen County Audubon Society/Suez.



Westervelt-Demarest House, Hillsdale Ave. (Photo by: Fred Rubel)

**Table H.2 Inventory (Partial) of the Vegetation of Hillsdale, New Jersey\* (Current to: 3/19/2022)**

**Notes:** C = Common; E = Endangered; I = Invasive; N = Nuisance, undesired; O = Ornamental; R = Rare; T = Transient presence.

Common Name	Species/ Scientific Name	When Seen		Location Seen	Photo #	Notes, Source, Reference
		Year	Month			
<b>Terrestrial</b>						
<b>Fungus</b>						
Black Bulgar	Bulgaria inquinans	2021	July	Glen Hook Road	Fung-2	
deceiver	Laccaria laccata	2021	July	Glen Hook Road	Fung-3	
Inkcap, pleated	Parasola plicatilis	2021	July	Glen Hook Road	Fung-4	
Trametes	Trametes	2021	May	Beechwood Park Nature Trail	Fung-1	
<b>Plants</b>						
Appalachian sedge	Carex appalachia	2021	N/A	Hillsdale Library Native Perennial Garden	PL-9	Native
Bamboo		2021	August	N. side Hillsdale Ave., by Cherry Rd.		N
Blue wood aster	Aster cordifolius	2021	N/A	Hillsdale Library Native Perennial Garden	PL-9	Native
Clover		2021	July	Glen Hook Road		C
Dandelion	Taraxacum officinale	2021	July	Glen Hook Road	PL-4	C
Garlic Mustard	Allaria	2021	May	Beechwood Park Nature Trail	PL-5	
Geranium		2021	May	Glen Hook Road	PL-2	
Grass	Kentucky Bluegrass	2021	May	Glen Hook Road		C
Great Blue Lobelia	Lobelia siphilitica	2021	N/A	Hillsdale Library Native Perennial Garden	PL-9	Native
Iris						
Ivy	English Ivy	2021	May	Glen Hook Road		C
	Poison Ivy	2020		Glen Hook Road		C, N
Lamb's Ear, wooly hedg	Stachys Byzantina	2021	Sept.	Wiermus Road	PL-7	
Mile a Minute		2021	July	Craig Road	PL-6	I
Milkweed	Asclepias spp.	2021	July	Hillsdale Ave. N/E. Side GS Parkway Overpass	PL-10	
Northern Sea Oats	Chasmanthium latifolium	2021	N/A	Hillsdale Library Native Perennial Garden	PL-9	Native
Pachysandra		2021	May	Glen Hook Road		C

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Common Name	Species/ Scientific Name	When Seen		Location Seen	Photo #	Notes, Source, Reference
		Year	Month			
Periwinkle	Common periwinkle. Creeping myrtle/ Vinca minor	2021	April	Hillsdale Ave./Pascack Rd. (Tandy/Allen property)		O
Pineapple Weed	Matricaria matricariodes	2021	May	Glen Hook Road	PL-3	
Pitcher plant		2014	N/A	Saddlewood (Formerly Tandy/Allen) Properties		Carnivorous; Steve Buxbaum, Lori Charkey
Purslane	Portulaca oleracea	2021	July	Glen Hook Road	PL-8	C
Skunk cabbage, Eastern skunk cabbage	Symplocarpus foetidus	2021	May	Beechwood Park Nature Trail	PL-1	A 'native' plant. Extensive, dense growth at the very wet "Low Ground" portion of the nature trail.
Squaw weed	Senecio obovatus	2021	N/A	Hillsdale Library Native Perennial Garden	PL-9	Native
Virginia creeper	Parthenocissus quinquefolia	2021	July	Glen Hook Road		C
Woodland sunflower	Helianthus divaricatus	2021	N/A	Hillsdale Library Native Perennial Garden	PL-9	Native
<b>Shrubs</b>						
Arrowwood viburnum		1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Blackhaw	Viburnum prunifolium	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Holly		2020	N/A	Glen Hook Road		
Honeysuckle		2014	N/A	Saddlewood (Formerly Tandy/Allen) Properties		Steve Buxbaum, Lori Charkey
Inkberry holly		2014	N/A	Saddlewood (Formerly Tandy/Allen) Properties		Steve Buxbaum, Lori Charkey
Mountain laurel		2020	N/A	Glen Hook Road		
New Jersey tea	Caenothus americanus	2021	May	Border of Beechwood Park Nature Trail	Shr-1	
Rhododendron		2021	May	Glen Hook Road		C
Roses		2021	May	Glen Hook Road		C, O
	Wild rose	2014	N/A	Saddlewood (Formerly Tandy/Allen) Properties		Steve Buxbaum, Lori Charkey
Spicebush	Lindera benzoin	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Winged spindle tree	Euonymus alata	2021	N/A	Glen Hook Road	Shr-2	I

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		Year	Month			
<b>Trees</b>						
American Hornbeam	Carpinus caroliniana	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Apple		2020	N/A	Demarest Farm		Agricultural
		2019	N/A	Glen Hook Road		Residential tree
Arborvitae	Thuja	2019	N/A	Glen Hook Road		
Ash		2019	N/A	Various		C, Hillsdale Tree Report (2019)
Aspen, Big Tooth	Populus grandidentata	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Beech	American Beech, Fagus grandifolia	1970	N/A	Beechwood Park Nature Trail	T-3	Field Guide to the Beechwood Nature Trail and Conservancy
Birch	Black Birch, Betula lenta	1970	N/A	Beechwood Park Nature Trail		I, Field Guide to the Beechwood Nature Trail and Conservancy
	Gray Birch, Betula populifolia	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Blackgum	Sourgum, Tupelo, Nyssa sylvatica	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Butternut	White Walnut, Juglans cinera	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Catalpa, northern	Catalpa speciosa	2021	May	Hillsdale Ave./Pascack Rd. (Tandy-Allen property)	T-2	
Cherry	Wild	2019	N/A	Kent Road - Dead End		Hillsdale Tree Report (2019)
	Black Cherry, Prunus serotina	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Dogwood	Cornus florida	2021	N/A	King Court		Ed Alter
Elm	American Elm, Ulmus americana	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Hickory	Bitternut Hickory, Carya cordiformis	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
	Pignut Hickory, Carya glabra	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
	Shagbark Hickory, Carya ovata	2021	N/A	Beechwood Park	T-5	Native.
Honey locust	Gleditsia triacanthos	2019	N/A	257 Cambridge Rd.		Hillsdale Tree Report (2019)
Linden	American Basswood, Tilia americana	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy

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Common Name	Species/ Scientific Name	When Seen		Location Seen	Photo #	Notes, Source, Reference
		Year	Month			
Locust, Black		2019	N/A	Carlyle Place along river		I, Hillsdale Tree Report (2019)
Maple	Norway Maple	2019	N/A	Various	T-1	I, Hillsdale Tree Report (2019)
	Red Maple, <i>Acer rubrum</i>	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
	Silver Maple	2019	N/A	Various		Hillsdale Tree Report (2019)
	Sugar Maple, <i>Acer sacharum</i>	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Mulberry		2019	N/A	5 Douglas Drive		Hillsdale Tree Report (2019)
Oak	Black Oak, <i>Quercus velutina</i>	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
	Pin Oak, <i>Quercus palustris</i>	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
	Red Oak, <i>Quercus borealis</i>	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
	Scarlet Oak	2019	N/A	Various		C, Hillsdale Tree Report (2019)
	Swamp White Oak	2019	N/A	171 Knickerbocker Ave.		Hillsdale Tree Report (2019)
	White Oak, <i>Quercus alba</i>	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Peach		2021	N/A	Demarest Farm		Agricultural
Pear		2019	N/A	Various		C, Hillsdale Tree Report (2019)
Pine	Eastern white pine/ <i>Pinus strobus</i>	2019	N/A	Various		C, Hillsdale Tree Report (2019)
Poplar	Carolina poplar	2014	N/A	Saddlewood (Formerly Tandy/Allen) Properties		Steve Buxbaum, Lori Charkey
	Yellow poplar	2019	N/A	110 Oakland St.		Hillsdale Tree Report (2019)
Princess Tree		2021	July	Hunters Court		
Shadbush	Amelanchier aborea	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Sumac		2014	N/A	Saddlewood (Formerly Tandy/Allen) Properties		Steve Buxbaum, Lori Charkey
Sycamore	American Sycamore, <i>Platanus occidentalis</i>	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Sweetgum	<i>Liquidambar styraciflua</i>	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Tree of Heaven	<i>Ailanthus altissima</i>	2019	N/A	GS Parkway Overpass, N Side Hillsdale Avenue	T-6	I, N

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Common Name	Species/ Scientific Name	When Seen		Location Seen	Photo #	Notes, Source, Reference
		Year	Month			
Tulip Tree	Liriodendron tulipera	1970	N/A	Beechwood Park Nature Trail	T-4	Field Guide to the Beechwood Nature Trail and Conservancy. Was indicated to include one of the oldest trees in the park, pre-dating the Civil War.
Viburnum	Maple leaf Viburnum, Viburnum acerifolium	1970	N/A	Beechwood Park Nature Trail		Field Guide to the Beechwood Nature Trail and Conservancy
Willow		2019	N/A	30 Chestnut Street		Hillsdale Tree Report (2019)
Wisteria		2014	N/A	Saddlewood (Formerly Tandy/Allen) Properties		Steve Buxbaum, Lori Charkey
Zelkova		2019	N/A	134 Broadway		Hillsdale Tree Report (2019)
<b>Aquatic</b>						

\* Not including uncommon ornamental plantings. Unless otherwise indicated, source for listing is Fred Rubel.

# Landscape Plants Rated by Deer Resistance



The following is a list of landscape plants rated according to their resistance to deer damage. The list was compiled with input from nursery and landscape professionals, Rutgers New Jersey Agricultural Experiment Station (NJAES) Cooperative Extension personnel, and Rutgers Master Gardeners in northern New Jersey.

Realizing that no plant is deer proof, plants in the *Rarely Damaged*, and *Seldom Severely Damaged* categories would be best for landscapes prone to deer damage. Plants *Occasionally Severely Damaged* and *Frequently Severely Damaged* are often preferred by deer and should only be planted with additional protection such as the use of fencing, repellents, etc. Success of any of these plants in the landscape will depend on local deer populations and weather conditions.

## KEY:

**A** = Rarely Damaged

**B** = Seldom Severely Damaged

**C** = Occasionally Severely Damaged

**D** = Frequently Severely Damaged

# All Ratings - All Types

Common Name	Latin Name	Type	Rating
Ageratum	<i>Ageratum houstonianum</i>	Annuals	A
Allegheny Spurge	<i>Pachysandra procumbens</i>	Groundcovers	A
American Holly	<i>Ilex opaca</i>	Trees	A
Angel's Trumpet	<i>Brugmansia sp. (Datura)</i>	Annuals	A
Anise	<i>Pimpinalla anisum</i>	Annuals	A
Anise Hyssop	<i>Agastache sp.</i>	Perennials	A
Annual Vinca	<i>Catharanthus rosea</i>	Annuals	A
Arrowwood Viburnum	<i>Viburnum dentatum</i>	Shrubs	A
Autumn Crocus	<i>Colchicum sp.</i>	Bulbs	A
Barberry	<i>Berberis sp.</i>	Shrubs	A
Barrenwort	<i>Epimedium sp.</i>	Groundcovers	A
Basket of Gold	<i>Aurinia saxatilis</i>	Perennials	A
Bayberry	<i>Myrica pensylvanica</i>	Shrubs	A
Bearberry	<i>Arctostaphylos uva-ursi</i>	Groundcovers	A
Big Bluestem	<i>Andropogon sp.</i>	Ornamental Grasses	A
Bigleaf Goldenray	<i>Ligularia dentata</i>	Perennials	A
Bishop's Weed	<i>Aegopodium podagaria</i>	Groundcovers	A
Bleeding Heart	<i>Dicentra spectabilis</i>	Perennials	A
Blue Fescue	<i>Festuca glauca</i>	Ornamental Grasses	A
Blue Mist Shrub	<i>Caryopteris clandonensis</i>	Shrubs	A
Blue Oat Grass	<i>Helictotrichon sempervirens</i>	Ornamental Grasses	A
Bluebell	<i>Endymion sp.</i>	Bulbs	A
Bottlebrush Buckeye	<i>Aesculus parviflora</i>	Trees	A
Broom	<i>Cytisus sp.</i>	Shrubs	A
Bugleweed	<i>Ajuga reptans</i>	Groundcovers	A
Bush Cinquefoil	<i>Potentilla fruticosa</i>	Shrubs	A
Butter & Eggs	<i>Linaria vulgaris</i>	Perennials	A
Buttercup	<i>Ranunculus sp.</i>	Perennials	A
Butterfly Bush	<i>Buddleia sp.</i>	Shrubs	A
Cactus	<i>Cactaceae sp.</i>	Perennials	A
Catmint	<i>Nepeta sp.</i>	Perennials	A
Christmas Fern	<i>Polystichum arcostichoides</i>	Ferns	A
Cinnamon Fern	<i>Osmunda cinnamomea</i>	Ferns	A
Clump Bamboo	<i>Fargesia sp.</i>	Ornamental Grasses	A
Common Boxwood	<i>Buxus sempervirens</i>	Shrubs	A
Common Foxglove	<i>Digitalis purpurea</i>	Biennials	A
Common Tansy	<i>Tanacetum vulgare</i>	Perennials	A
Corydalis	<i>Corydalis sp.</i>	Perennials	A
Crown Imperial, Fritilia	<i>Fritilaria imperialis</i>	Bulbs	A
Daffodil	<i>Narcissus sp.</i>	Bulbs	A
Dame's Rocket	<i>Hesperis matronalis</i>	Perennials	A
Daphne	<i>Daphne sp.</i>	Shrubs	A
Devil's Walking Stick	<i>Aralia spinosa</i>	Shrubs	A
Drooping Leucothoe	<i>Leucothoe fontanesiana</i>	Shrubs	A
Dusty Miller	<i>Centaurea cineraria</i>	Annuals	A

Common Name	Latin Name	Type	Rating
Dwarf Alberta Spruce	<i>Picea glauca</i> 'Conica'	Trees	A
European Ginger	<i>Asarum europaeum</i>	Perennials	A
False Camomile	<i>Matricaria</i> sp.	Annuals	A
False Indigo	<i>Baptisia australis</i>	Perennials	A
Feather Reed Grass	<i>Calamagrostis</i> sp.	Ornamental Grasses	A
Flowering Tobacco	<i>Nicotiana</i> sp.	Annuals	A
Forget-Me-Not	<i>Myosotis</i> sp.	Perennials	A
Forget-Me-Not	<i>Myosotis sylvatica</i>	Annuals	A
Fountain Grass	<i>Pennisetum alopecuroides</i>	Ornamental Grasses	A
Fragrant Sumac	<i>Rhus aromatica</i>	Shrubs	A
Fringed Bleeding Heart	<i>Dicentra eximia</i>	Perennials	A
Garden Sage	<i>Salvia officinalis</i>	Perennials	A
Germander	<i>Teucrium chamaedrys</i>	Perennials	A
Giant Japanese Silver Grass	<i>Miscanthus floridulis</i>	Ornamental Grasses	A
Giant Reed	<i>Arundo donax</i>	Ornamental Grasses	A
Golden Bamboo	<i>Phyllostachys aurea</i>	Ornamental Grasses	A
Greek Jerusalem Sage	<i>Phlomis</i> sp.	Perennials	A
Hakonechloa	<i>Hakonechloa macra</i>	Ornamental Grasses	A
Hard Rush	<i>Juncus effusus</i>	Ornamental Grasses	A
Hayscented Fern	<i>Dennstaedtia punctilobula</i>	Ferns	A
Heath	<i>Erica</i> sp.	Shrubs	A
Heather	<i>Calliuna</i> sp.	Shrubs	A
Heliotrope	<i>Heliotropium arborescens</i>	Annuals	A
Holly Fern	<i>Cyrtomium falcatum</i>	Ferns	A
Horehound	<i>Marrubium vulgare</i>	Perennials	A
Horseradish	<i>Armoracia rusticana</i>	Perennials	A
Hyssop	<i>Hyssopus officinalis</i>	Perennials	A
Indian Grass	<i>Sorghastrum nutans</i>	Ornamental Grasses	A
Iris (2)	<i>Iris</i> sp.	Perennials	A
Jack-in-the-pulpit	<i>Arisaema triphylum</i>	Perennials	A
Japanese Black Pine	<i>Pinus thunbergiana</i>	Trees	A
Japanese Blood Grass	<i>Imperata cylindrica</i>	Ornamental Grasses	A
Japanese Painted Fern	<i>Athyrium goeringianum (nipponicum)</i>	Ferns	A
Japanese Pieris, Andromeda	<i>Pieris japonica</i>	Shrubs	A
Japanese Plum Yew	<i>Cephalotaxus harringtonia</i>	Shrubs	A
Japanese Sedge	<i>Carex</i> sp.	Ornamental Grasses	A
Japanese Silver Grass	<i>Miscanthus sinensis</i>	Ornamental Grasses	A
Japanese Skimmia	<i>Skimmia japonica</i>	Shrubs	A
Japanese Sweet Flag	<i>Acorus</i> sp.	Ornamental Grasses	A
John T. Morris Holly	<i>Ilex</i> x 'John T. Morris'	Shrubs	A
Katsura Tree	<i>Cercidiphyllum japonicum</i>	Trees	A
Lamb's Ear	<i>Stachys byzantina</i>	Perennials	A
Large Blue June Grass	<i>Koeleria glauca</i>	Ornamental Grasses	A
Larkspur	<i>Consolida ambigua</i>	Annuals	A
Lavendar	<i>Lavandula</i> sp.	Perennials	A
Lavender-Cotton	<i>Santolina chamaecyparissus</i>	Perennials	A
Leatherleaf Mahonia	<i>Mahonia bealei</i>	Shrubs	A

Common Name	Latin Name	Type	Rating
Lemon Balm	<i>Melissa officinalis</i>	Perennials	A
Lenten or Christmas Rose	<i>Helleborus sp.</i>	Perennials	A
Lily of the Valley	<i>Convallaria majalis</i>	Groundcovers	A
Little Bluestem	<i>Schizachyrium scoparium</i>	Ornamental Grasses	A
Lungwort	<i>Pulmonaria sp.</i>	Perennials	A
Lydia Morris Holly	<i>Ilex x 'Lydia Morris'</i>	Shrubs	A
Lyme Grass	<i>Leymus arenarius glaucous</i>	Ornamental Grasses	A
Marjoram	<i>Majorana</i>	Perennials	A
May Apple	<i>Podophyllum</i>	Perennials	A
Meadow Rue	<i>Thalictrum sp.</i>	Perennials	A
Mimosa	<i>Albizia julibrissin</i>	Trees	A
Mint	<i>Mentha sp.</i>	Perennials	A
Monkshood	<i>Aconitum sp.</i>	Perennials	A
Moonglow Juniper	<i>Juniperus scopulorum 'Moonglow'</i>	Shrubs	A
Mountain Pieris	<i>Pieris floribunda</i>	Shrubs	A
New York Fern	<i>Thelyptens noveboracensis</i>	Ferns	A
Northern Sea Oats	<i>Chasmanthium latifolium</i>	Ornamental Grasses	A
Oregano	<i>Origanum sp.</i>	Perennials	A
Oregon Grape Holly	<i>Mahonia aquifolium</i>	Shrubs	A
Oriental Fountain Grass	<i>Pennisetum orientale</i>	Ornamental Grasses	A
Ornamental Onion	<i>Allium sp.</i>	Perennials	A
Ornamental Onion	<i>Allium sp.</i>	Bulbs	A
Ostrich Fern	<i>Matteuccia struthiopteris</i>	Ferns	A
Pachysandra	<i>Pachysandra terminalis</i>	Groundcovers	A
Pampus Grass	<i>Cortaderia selloana</i>	Ornamental Grasses	A
Paper Birch	<i>Betula papyrifera</i>	Trees	A
Pawpaw	<i>Asimina triloba</i>	Trees	A
Peony (2)	<i>Paeonia sp.</i>	Perennials	A
Pitch Pine	<i>Pinus rigida</i>	Trees	A
Poppy	<i>Papaver sp.</i>	Annuals	A
Pot Marigold	<i>Calendula sp.</i>	Annuals	A
Potentilla, Cinquefoil	<i>Potentilla sp.</i>	Perennials	A
Prince of Wales Juniper	<i>Juniperus horizontalis 'Prince of Wales'</i>	Shrubs	A
Purple Moor Grass	<i>Molinia caerulea</i>	Ornamental Grasses	A
Purple Rock-Cress	<i>Aubretia deltoidea</i>	Perennials	A
Ravenna Grass	<i>Erianthus ravennae</i>	Ornamental Grasses	A
Red Elderberry	<i>Sambucus racemosa</i>	Shrubs	A
Red Pine	<i>Pinus resinosa</i>	Trees	A
River Birch	<i>Betula nigra</i>	Trees	A
Rock-Cress	<i>Arabis caucasica</i>	Perennials	A
Rocket Ligularia	<i>Ligularia 'The Rocket'</i>	Perennials	A
Rodgers Flower	<i>Rodgersia sp.</i>	Perennials	A
Rose Campion	<i>Lychnis coronaria</i>	Perennials	A
Rosemary	<i>Rosmarinus officinalis</i>	Annuals	A
Royal Fern	<i>Osmunda regalis</i>	Ferns	A
Rue	<i>Ruta sp.</i>	Perennials	A
Russian Cypress	<i>Microbiota decussata</i>	Shrubs	A

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Russian Olive	<i>Elaeagnus angustifolia</i>	Shrubs	A
Russian Sage	<i>Perovskio atriplicifolia</i>	Perennials	A
Sensitive Fern	<i>Onoclea sensibilis</i>	Ferns	A
Siberian Bugloss	<i>Brunneria macrophylla</i> (Brunnera)	Perennials	A
Siberian Squill	<i>Scilla siberica</i>	Bulbs	A
Silver Mound	<i>Artemisia sp.</i>	Perennials	A
Small Globe Thistle	<i>Echinops ritro</i>	Perennials	A
Snapdragon	<i>Antirrhinum majus</i>	Annuals	A
Snowdrops	<i>Galanthus nivalis</i>	Bulbs	A
Snow-on-the-Mountain	<i>Euphorbia marginata</i>	Annuals	A
Spider Flower	<i>Cleome sp.</i>	Annuals	A
Spotted Deadnettle	<i>Lamium sp.</i>	Groundcovers	A
Spurge	<i>Euphorbia sp.</i> (except 'Chameleon')	Perennials	A
Statice	<i>Limonium latifolium</i>	Perennials	A
Strawflower	<i>Helichrysum</i>	Annuals	A
Sweet Alyssum	<i>Lobularia maritima</i>	Annuals	A
Sweet Box	<i>Sarcococca hookeriana</i>	Shrubs	A
Sweet Woodruff	<i>Galium odoratum</i> ( <i>Asperula odorata</i> )	Groundcovers	A
Switch Grass	<i>Panicum virgatum</i>	Ornamental Grasses	A
Tarragon	<i>Artemisia dracunculus</i>	Perennials	A
Threadleaf Coreopsis	<i>Coreopsis verticillata</i>	Perennials	A
Thyme	<i>Thymus sp.</i>	Perennials	A
Variegated Purple Moor Grass	<i>Molinia caerulea</i> 'Variegata'	Ornamental Grasses	A
Varigated Oat Grass	<i>Arrhenatherum elatius</i>	Ornamental Grasses	A
Weeping Love Grass	<i>Eragrostus curvula</i>	Ornamental Grasses	A
Wild Ginger	<i>Asarum canadense</i>	Perennials	A
Winter Aconite	<i>Eranthus hyemalis</i>	Bulbs	A
Wood Fern	<i>Dryopteris marginalis</i>	Ferns	A
Yucca	<i>Yucca filimentosa</i>	Perennials	A
African Lily	<i>Agapanthus sp.</i>	Perennials	B
Allegheny Serviceberry	<i>Amelanchier laevis</i>	Trees	B
American Bittersweet	<i>Celastrus scandens</i>	Vines	B
Anthony Waterer Spirea	<i>Spiraea x bumalda</i>	Shrubs	B
Armstrong Juniper	<i>Juniperus chinensis</i> 'Armstrongii'	Shrubs	B
Asparagus	<i>Asparagus officinalis</i>	Perennials	B
Aster	<i>Aster sp.</i>	Perennials	B
Astilbe	<i>Astilbe sp.</i>	Perennials	B
Austrian Pine	<i>Pinus nigra</i>	Trees	B
Autumn Olive	<i>Elaeagnus umbellatus</i>	Shrubs	B
Baby's Breath	<i>Gypsophila sp.</i>	Perennials	B
Bachelor's Buttons	<i>Centaurea cyanus</i>	Annuals	B
Bamboo	<i>Bambusa sp.</i>	Ornamental Grasses	B
Basil	<i>Ocimum basilicum</i>	Annuals	B
Bearberry Cotoneaster	<i>Cotoneaster dammeri</i>	Shrubs	B
Beautyberry	<i>Callicarpa sp.</i>	Shrubs	B
Beautybush	<i>Kolkwitzia amabilis</i>	Shrubs	B
Beebalm	<i>Monarda didyma</i>	Perennials	B

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Black-Eyed Susan	<i>Rudbeckia sp.</i>	Perennials	<b>B</b>
Blackhaw Viburnum	<i>Viburnum prunifolium</i>	Shrubs	<b>B</b>
Blazing Star	<i>Liatris sp.</i>	Perennials	<b>B</b>
Blue Star Juniper	<i>Juniperus squamata</i> 'Blue Star'	Shrubs	<b>B</b>
Blueberry Elder, Sweet Elder	<i>Sambucus canadensis</i>	Shrubs	<b>B</b>
Bog Rosemary	<i>Andromeda polifolia</i>	Shrubs	<b>B</b>
Borage	<i>Borage officinalis</i>	Annuals	<b>B</b>
Bottlebrush Grass	<i>Hystrix patula</i>	Ornamental Grasses	<b>B</b>
Brambles	<i>Rubus sp.</i>	Shrubs	<b>B</b>
Bridalwreath Spirea	<i>Spiraea prunifolia</i>	Shrubs	<b>B</b>
Buckthorn	<i>Rhammus sp.</i>	Shrubs	<b>B</b>
Bugloss	<i>Anchusa sp.</i>	Perennials	<b>B</b>
Butterfly Weed	<i>Asclepias tuberosa</i>	Perennials	<b>B</b>
California Poppy	<i>Eschscholzia californica</i>	Annuals	<b>B</b>
California Sweetshrub	<i>Calycanthus occidentalis</i>	Shrubs	<b>B</b>
Calla Lily	<i>Zantedeschia sp.</i>	Bulbs	<b>B</b>
Camassia	<i>Camassia leichtlini</i>	Bulbs	<b>B</b>
Candytuft	<i>Iberis sempervirens</i>	Perennials	<b>B</b>
Candytuft	<i>Iberis umbellata</i>	Annuals	<b>B</b>
Canna Lily	<i>Canna sp.</i>	Bulbs	<b>B</b>
Cardinal Flower	<i>Lobelia sp.</i>	Perennials	<b>B</b>
Carnation, Pinks	<i>Dianthus sp.</i>	Perennials	<b>B</b>
Carolina Silverbell	<i>Halesia carolina</i>	Shrubs	<b>B</b>
Cherry Laurel	<i>Prunus laurocerasus</i>	Shrubs	<b>B</b>
Chinese Fringe Tree	<i>Chionanthus retusus</i>	Trees	<b>B</b>
Chinese Holly	<i>Ilex cornuta</i>	Shrubs	<b>B</b>
Chinese Juniper (1)	<i>Juniperus chinensis cv.</i>	Shrubs	<b>B</b>
Chinese Paper Birch	<i>Betula albo-sinensis</i>	Trees	<b>B</b>
Coast Leucothoe	<i>Leucothoe axillaris</i>	Shrubs	<b>B</b>
Cock's Comb	<i>Celosia sp.</i>	Annuals	<b>B</b>
Colorado Blue Spruce	<i>Picea pungens</i>	Trees	<b>B</b>
Columbine	<i>Aquilegia sp.</i>	Perennials	<b>B</b>
Common Flowering Quince	<i>Chaenomeles speciosa</i>	Trees	<b>B</b>
Common Lilac	<i>Syringa vulgaris</i>	Shrubs	<b>B</b>
Common Sassafras	<i>Sassafras albidurn</i>	Trees	<b>B</b>
Common Sweetshrub	<i>Calycanthus floridus</i>	Shrubs	<b>B</b>
Common Witchhazel	<i>Hamamelis virginiana</i>	Shrubs	<b>B</b>
Common Yarrow	<i>Achillea millefolium</i>	Perennials	<b>B</b>
Coralbells	<i>Heuchera sp.</i>	Perennials	<b>B</b>
Coralberry	<i>Symphoricarpos x chenaultii</i>	Shrubs	<b>B</b>
Corkscrew Willow	<i>Salix matsudana tortuosa</i>	Trees	<b>B</b>
Cranberry Bush	<i>Viburnum opulus</i>	Shrubs	<b>B</b>
Cranberry Cotoneaster	<i>Cotoneaster apiculatus</i>	Shrubs	<b>B</b>
Crape Myrtle	<i>Lagerstroemia indica</i>	Shrubs	<b>B</b>
Creeping Juniper (1)	<i>Juniperus horizontalis cv.</i>	Shrubs	<b>B</b>
Creeping Wintergreen	<i>Gaultheria procumbens</i>	Groundcovers	<b>B</b>
Crocoshmia	<i>Crocoshmia sp.</i>	Perennials	<b>B</b>

Common Name	Latin Name	Type	Rating
Crocus	<i>Crocus sp.</i>	Bulbs	<b>B</b>
Currant	<i>Ribes sp.</i>	Shrubs	<b>B</b>
Cyclamen	<i>Cyclamen sp.</i>	Perennials	<b>B</b>
Dawn Redwood	<i>Metasequoia glyptostroboides</i>	Trees	<b>B</b>
Delphinium	<i>Delphinium sp.</i>	Perennials	<b>B</b>
Deutzia	<i>Deutzia sp.</i>	Shrubs	<b>B</b>
Dill	<i>Anethum graveolens</i>	Annuals	<b>B</b>
Doublefile Viburnum	<i>Viburnum plicatum tomentosum</i>	Shrubs	<b>B</b>
Douglas Fir	<i>Pseudotsuga menziesii</i>	Trees	<b>B</b>
Downy Serviceberry	<i>Amelanchier arborea</i>	Trees	<b>B</b>
Dragon Lady, San Jose Holly	<i>Ilex x aquipernyi</i>	Trees	<b>B</b>
Drooping Sedge	<i>Carex pendula</i>	Ornamental Grasses	<b>B</b>
Dwarf Balsam Fir	<i>Abies balsamea</i>	Shrubs	<b>B</b>
Dwarf Mondo Grass	<i>Ophiopogon japonicus</i>	Ornamental Grasses	<b>B</b>
Eastern Red Cedar	<i>Juniperus virginiana</i>	Trees	<b>B</b>
Eastern White Pine	<i>Pinus strobus</i>	Trees	<b>B</b>
Elephant Ear	<i>Colocasia esculenta</i>	Bulbs	<b>B</b>
English Hawthorn	<i>Crataegus laevigata</i>	Trees	<b>B</b>
English Holly	<i>Ilex aquifolium</i>	Shrubs	<b>B</b>
European Ash	<i>Fraxinus excelsior</i>	Trees	<b>B</b>
European Beech	<i>Fagus sylvatica</i>	Trees	<b>B</b>
European White Birch	<i>Betula pendula</i>	Trees	<b>B</b>
Feverfew	<i>Chrysanthemum parthenium</i>	Perennials	<b>B</b>
Firethorn	<i>Pyracantha coccinea</i>	Shrubs	<b>B</b>
Foam Flower	<i>Tiarella cordifolia</i>	Perennials	<b>B</b>
Forget-Me-Not	<i>Myosotis alpestris</i>	Biennials	<b>B</b>
Forsythia	<i>Forsythia x intermedia</i>	Shrubs	<b>B</b>
Fothergillia	<i>Fothergila sp.</i>	Shrubs	<b>B</b>
French Marigold	<i>Tagetes patula</i>	Annuals	<b>B</b>
Gas Plant	<i>Dictamnus alba</i>	Perennials	<b>B</b>
Gladiolus	<i>Gladiolus sp.</i>	Bulbs	<b>B</b>
Glory Lily	<i>Gloriosa superba</i>	Bulbs	<b>B</b>
Glossy Abelia	<i>Abelia sp.</i>	Shrubs	<b>B</b>
Goldenrain Tree	<i>Koelreuteria paniculata</i>	Trees	<b>B</b>
Goldenrod	<i>Solidago sp.</i>	Perennials	<b>B</b>
Goldust Plant	<i>Aucuba japonica</i>	Shrubs	<b>B</b>
Grape Hyacinth	<i>Muscari sp.</i>	Bulbs	<b>B</b>
Green Ash	<i>Fraxinus pennsylvanica</i>	Trees	<b>B</b>
Hardy Geranium	<i>Geranium macrorrhizum</i>	Perennials	<b>B</b>
Harlequin Glorybower	<i>Clerodendrum fargesii</i>	Shrubs	<b>B</b>
Hazelnut	<i>Corylus sp.</i>	Shrubs	<b>B</b>
Heartleaf Bergenia	<i>Bergenia sp.</i>	Perennials	<b>B</b>
Hens and Chickens	<i>Sempervivum sp.</i>	Perennials	<b>B</b>
Himalayan Birch	<i>Betula jacquemontii</i>	Trees	<b>B</b>
Holly Osmanthus	<i>Osmanthus heterophyllus</i>	Shrubs	<b>B</b>
Honey Locust	<i>Gleditsia triacanthos</i>	Trees	<b>B</b>
Hyacinth	<i>Hyacinthus sp.</i>	Bulbs	<b>B</b>

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Inkberry	<i>Ilex glabra</i>	Shrubs	<b>B</b>
Jacob's Ladder	<i>Polemonium caeruleum</i>	Perennials	<b>B</b>
Japanese Anemone	<i>Anemone x hybrida</i>	Perennials	<b>B</b>
Japanese Cedar	<i>Cryptomeria japonica</i>	Trees	<b>B</b>
Japanese Falsecypress	<i>Chamaecyparis pisifera</i>	Trees	<b>B</b>
Japanese Flowering Cherry	<i>Prunus serrulata</i>	Trees	<b>B</b>
Japanese Flowering Quince	<i>Chaenomeles japonica</i>	Shrubs	<b>B</b>
Japanese Garden Juniper	<i>Juniperus procumbens</i> 'Nana'	Shrubs	<b>B</b>
Japanese Kerria	<i>Kerria japonica</i>	Shrubs	<b>B</b>
Japanese Maple	<i>Acer palmatum</i>	Trees	<b>B</b>
Japanese Red Pine	<i>Pinus densiflora</i>	Trees	<b>B</b>
Japanese Spirea	<i>Spiraea japonica</i>	Shrubs	<b>B</b>
Japanese Tree Lilac	<i>Syringa reticulata</i>	Shrubs	<b>B</b>
Judd Viburnum	<i>Viburnum x juddii</i>	Shrubs	<b>B</b>
Koreanspice Viburnum	<i>Viburnum carlesii</i>	Shrubs	<b>B</b>
Kousa Dogwood	<i>Cornus kousa</i>	Trees	<b>B</b>
Ladys' Mantle	<i>Alchemilla sp.</i>	Perennials	<b>B</b>
Lance Coreopsis	<i>Coreopsis lanceolata</i>	Perennials	<b>B</b>
Lantana	<i>Lantana sp.</i>	Annuals	<b>B</b>
Large Periwinkle	<i>Vinca major</i>	Groundcovers	<b>B</b>
Leatherleaf Viburnum	<i>Viburnum rhytidophyllum</i>	Shrubs	<b>B</b>
Lilyturf	<i>Liriope sp.</i>	Groundcovers	<b>B</b>
Lobelia	<i>Lobelia sp.</i>	Annuals	<b>B</b>
Lupine	<i>Lupinus sp.</i>	Perennials	<b>B</b>
Maltese Cross	<i>Lychnis chalconica</i>	Perennials	<b>B</b>
Meadow Sage	<i>Salvia nemorosa</i>	Perennials	<b>B</b>
Mist Flower	<i>Eupatorium coelestinum</i>	Perennials	<b>B</b>
Money Plant	<i>Lunaria annua</i>	Biennials	<b>B</b>
Mountain Juniper (1)	<i>Juniperus scopulorum cv.</i>	Shrubs	<b>B</b>
Mugo Pine	<i>Pinus mugo</i>	Shrubs	<b>B</b>
Mullein	<i>Verbascum sp.</i>	Perennials	<b>B</b>
Nasturtium	<i>Tropaeolum majus</i>	Annuals	<b>B</b>
Norway Spruce	<i>Picea abies</i>	Trees	<b>B</b>
Obedient Plant	<i>Physostegia sp.</i>	Perennials	<b>B</b>
Oriental Poppy	<i>Papaver orientale</i>	Perennials	<b>B</b>
Paperbark Maple	<i>Acer griseum</i>	Trees	<b>B</b>
Parsley	<i>Petroselinum crispum</i>	Annuals	<b>B</b>
Patrinia	<i>Patrinia scabiosifolia</i>	Perennials	<b>B</b>
Periwinkle	<i>Vinca minor</i>	Groundcovers	<b>B</b>
Pfitzer Juniper	<i>Juniperus chinensis</i> 'Pfitzerana'	Shrubs	<b>B</b>
Pincushin Flower	<i>Scabiosa caucasica</i>	Perennials	<b>B</b>
Plumbago	<i>Ceratostigma plumbaginoides</i>	Groundcovers	<b>B</b>
Plume Poppy	<i>Macleaya cordata</i>	Perennials	<b>B</b>
Primrose	<i>Primula sp.</i>	Perennials	<b>B</b>
Privet	<i>Ligustrum sp.</i>	Shrubs	<b>B</b>
Purple Coneflower	<i>Echinacea purpurea</i>	Perennials	<b>B</b>
Pyrenees Cotoneaster	<i>Cotoneaster congestus</i>	Shrubs	<b>B</b>

<b>Common Name</b>	<b>Latin Name</b>	<b>Type</b>	<b>Rating</b>
Red Chokeberry	<i>Aronia arbutifolia</i>	Shrubs	<b>B</b>
Red Maple	<i>Acer rubrum</i>	Trees	<b>B</b>
Red Osier Dogwood	<i>Cornus sericea</i>	Shrubs	<b>B</b>
Red Twigged Dogwood	<i>Cornus alba</i>	Shrubs	<b>B</b>
Red-Hot Poker	<i>Kniphofia tritoma</i>	Perennials	<b>B</b>
Redvein Enkianthus	<i>Enkianthus campanulatus</i>	Shrubs	<b>B</b>
Rhubarb	<i>Rheum rhabarbarum</i>	Perennials	<b>B</b>
Ribbon Grass	<i>Phalaris arundinaceae</i>	Ornamental Grasses	<b>B</b>
Rockspray Cotoneaster	<i>Cotoneaster horizontalis</i>	Shrubs	<b>B</b>
Rose of Sharon	<i>Hibiscus syriacus</i>	Shrubs	<b>B</b>
Ruby Horsechestnut	<i>Aesculus x carnea</i>	Trees	<b>B</b>
Rue Anemone	<i>Anemonella thalictroides</i>	Perennials	<b>B</b>
Salvia	<i>Salvia</i>	Annuals	<b>B</b>
Saucer Magnolia	<i>Magnolia x soulangiana</i>	Shrubs	<b>B</b>
Savin/Tam Juniper	<i>Juniperus sabin cv.</i>	Shrubs	<b>B</b>
Savory	<i>Satureja montana</i>	Perennials	<b>B</b>
Scotch Pine	<i>Pinus sylvestris</i>	Trees	<b>B</b>
Sea Buckthorn	<i>Hippophae rhamnoides</i>	Shrubs	<b>B</b>
Sea Thrift	<i>Armeria maritima</i>	Perennials	<b>B</b>
Sedge	<i>Scirpus lacustris</i>	Ornamental Grasses	<b>B</b>
Serbian Spruce	<i>Picea omorika</i>	Trees	<b>B</b>
Shadbush	<i>Amelanchier canadensis</i>	Trees	<b>B</b>
Shiso	<i>Perilla frutescens</i>	Annuals	<b>B</b>
Singleseed Juniper (1)	<i>Juniperus squamata cv.</i>	Shrubs	<b>B</b>
Skunk Cabbage	<i>Symplocarpos foetidus</i>	Perennials	<b>B</b>
Smokebush	<i>Cotinus coggygia</i>	Shrubs	<b>B</b>
Snakeroot, Bugbane	<i>Cimicifuga sp.</i>	Perennials	<b>B</b>
Sneezeweed	<i>Helenium autumnale</i>	Perennials	<b>B</b>
Snowberry	<i>Symphoricarpos albus</i>	Shrubs	<b>B</b>
Snow-in-Summer	<i>Cerastium</i>	Perennials	<b>B</b>
Soapwort	<i>Saponaria sp.</i>	Perennials	<b>B</b>
Sourwood	<i>Oxydendrum arboreum</i>	Trees	<b>B</b>
Speedwell	<i>Veronica sp.</i>	Perennials	<b>B</b>
Spicebush	<i>Lindera benzoin</i>	Shrubs	<b>B</b>
Spiderwort	<i>Tradescantia sp.</i>	Perennials	<b>B</b>
St. John's Wort	<i>Hypericum calycinum</i>	Perennials	<b>B</b>
St. John's Wort	<i>Hypericum prolificum</i>	Shrubs	<b>B</b>
Stocks	<i>Matthiola sp.</i>	Annuals	<b>B</b>
Stokes' Aster	<i>Stokesia laevis</i>	Perennials	<b>B</b>
Striped Maple	<i>Acer pensylvanicum</i>	Trees	<b>B</b>
Sugar Maple	<i>Acer saccharum</i>	Trees	<b>B</b>
Swamp Milkweed	<i>Asclepias incarnata</i>	Perennials	<b>B</b>
Sweet Mock Orange	<i>Philadelphus coronarius</i>	Shrubs	<b>B</b>
Sweet Pepperbush	<i>Clethra sp.</i>	Shrubs	<b>B</b>
Sweet William	<i>Dianthus barbatus</i>	Biennials	<b>B</b>
Toad Lily	<i>Tricyrtis hirta</i>	Perennials	<b>B</b>
Trillium	<i>Trillium sp.</i>	Perennials	<b>B</b>

Common Name	Latin Name	Type	Rating
Trout Lily	<i>Erythronium</i>	Perennials	<b>B</b>
Tulip Tree	<i>Liriodendron tulipifera</i>	Trees	<b>B</b>
Verbena	<i>Verbena x hybrida</i>	Annuals	<b>B</b>
Violets	<i>Viola sp.</i>	Perennials	<b>B</b>
Virginia Bluebells	<i>Mertensia virginica</i>	Perennials	<b>B</b>
Virginia Sweetspire	<i>Itea virginica</i>	Shrubs	<b>B</b>
Wallflower	<i>Cheiranthus sp.</i>	Annuals	<b>B</b>
Weigela	<i>Weigela florida</i>	Shrubs	<b>B</b>
White Boltonia	<i>Boltonia asteroides</i>	Perennials	<b>B</b>
White Snakeroot	<i>Eupatorium rugosum</i>	Perennials	<b>B</b>
White Spruce	<i>Picea glauca</i>	Trees	<b>B</b>
Willowleaf Cotoneaster	<i>Cotoneaster salicifolius</i>	Shrubs	<b>B</b>
Winter Jasmine	<i>Jasminum nudiflorum</i>	Vines	<b>B</b>
Winterberry Holly	<i>Ilex verticillata</i>	Shrubs	<b>B</b>
Wisteria	<i>Wisteria floribunda</i>	Vines	<b>B</b>
Wood Sorrel	<i>Oxalis sp.</i>	Bulbs	<b>B</b>
Yarrow	<i>Achillea filipendulina</i>	Perennials	<b>B</b>
Yellow Birch	<i>Betula lutea</i>	Trees	<b>B</b>
Yellow Foxglove	<i>Digitalis grandiflora</i>	Perennials	<b>B</b>
Yellow Wax-Bells	<i>Kirengeshoma palmata</i>	Perennials	<b>B</b>
Youngstown Andorra Juniper	<i>Juniperus horizontalis</i> 'Youngstown'	Shrubs	<b>B</b>
Zinnia	<i>Zinnia sp.</i>	Annuals	<b>B</b>
Alternate-Leaved Dogwood	<i>Cornus alternifolia</i>	Trees	<b>C</b>
Apples	<i>Malus sp.</i>	Trees	<b>C</b>
Atlantic White Cedar	<i>Chamaecyparis thyoides</i>	Trees	<b>C</b>
Atlas Cedar	<i>Cedrus atlantica</i>	Trees	<b>C</b>
Bald Cypress	<i>Taxodium distichum</i>	Trees	<b>C</b>
Balloon Flower	<i>Platycodon grandiflorus</i>	Perennials	<b>C</b>
Balsam Fir	<i>Abies balsamea</i>	Trees	<b>C</b>
Balsam, Touch-Me-Not	<i>Impatiens balsamina</i>	Annuals	<b>C</b>
Basswood	<i>Tilia americana</i>	Trees	<b>C</b>
Bellflower	<i>Campanula glomerata</i>	Perennials	<b>C</b>
Bigleaf Hydrangea	<i>Hydrangea macrophylla</i>	Shrubs	<b>C</b>
Black Locust	<i>Robinia pseudoacacia</i>	Trees	<b>C</b>
Blanket Flower	<i>Gaillardia sp.</i>	Perennials	<b>C</b>
Bloodtwig Dogwood	<i>Cornus sanguinea</i>	Shrubs	<b>C</b>
Blue Holly	<i>Ilex x meserveae</i>	Shrubs	<b>C</b>
Caladium	<i>Caladium sp.</i>	Bulbs	<b>C</b>
Callery Pear	<i>Pyrus calleryana</i>	Trees	<b>C</b>
Canterbury Bells	<i>Campanula medium</i>	Biennials	<b>C</b>
Carolina Hemlock	<i>Tsuga caroliniana</i>	Trees	<b>C</b>
Carolina Rhododendron	<i>Rhododendron carolinianum</i>	Shrubs	<b>C</b>
Catawba Rhododendron	<i>Rhododendron catawbiense</i>	Shrubs	<b>C</b>
Checkermallow	<i>Sidalcea malviflora</i>	Perennials	<b>C</b>
Chestnut Oak	<i>Quercus prinus</i>	Trees	<b>C</b>
Chinese Lilac	<i>Syringa x chinesis</i>	Shrubs	<b>C</b>
Clematis	<i>Clematis sp.</i>	Vines	<b>C</b>

<b>Common Name</b>	<b>Latin Name</b>	<b>Type</b>	<b>Rating</b>
Climbing Hydrangea	<i>Hydrangea anomala petiolaris</i>	Vines	C
Coleus	<i>Coleus sp.</i>	Annuals	C
Comfrey	<i>Symphytum officinale</i>	Perennials	C
Common Horsechestnut	<i>Aesculus hippocastanum</i>	Trees	C
Common Pear	<i>Pyrus communis</i>	Trees	C
Cornelian Cherry	<i>Cornus mas</i>	Trees	C
Cosmos	<i>Cosmos sp.</i>	Annuals	C
Dahlia	<i>Dahlia sp.</i>	Annuals	C
Daylily	<i>Hemerocallis sp.</i>	Perennials	C
Deciduous Azaleas (1)	<i>Rhododendron sp.</i>	Shrubs	C
Eastern Hemlock	<i>Tsuga canadensis</i>	Trees	C
Eastern Redbud	<i>Cercis canadensis</i>	Trees	C
English Daisy	<i>Bellis perennis</i>	Perennials	C
English Ivy	<i>Hedera helix</i>	Groundcovers	C
English Ivy	<i>Hedera helix</i>	Vines	C
European Larch	<i>Larix decidua</i>	Trees	C
Fall Mums	<i>Chrysanthemum</i>	Perennials	C
Fleabane	<i>Erigeron sp.</i>	Perennials	C
Flowering Dogwood	<i>Cornus florida</i>	Trees	C
Fragrant Winterhazel	<i>Corylopsis glabrescens</i>	Shrubs	C
Fraser Fir	<i>Abies fraseri</i>	Trees	C
Garden Lily	<i>Lilium sp.</i>	Bulbs	C
Garden Petunia	<i>Petunia sp.</i>	Annuals	C
Geranium	<i>Pelargonium sp.</i>	Annuals	C
Gerbera Daisy	<i>Gerbera jamesonii</i>	Annuals	C
Geum, Avens	<i>Geum sp.</i>	Perennials	C
Globeflower	<i>Trollius sp.</i>	Perennials	C
Goat's Beard	<i>Aruncus sp.</i>	Perennials	C
Goldflame Honeysuckle	<i>Lonicera x heckrottii</i>	Vines	C
Gooseneck Loosestrife	<i>Lysimachia clethroides</i>	Perennials	C
Greenspire Littleleaf Linden	<i>Tilia cordata 'Greenspire'</i>	Trees	C
Hardy Begonia	<i>Begonia grandis</i>	Perennials	C
Hardy Geranium	<i>Geranium clarkei</i>	Perennials	C
Hardy Geranium	<i>Geranium sanguineum</i>	Perennials	C
Hardy Geranium	<i>Geranium x cantabrigiense</i>	Perennials	C
Heavenly Bamboo	<i>Nandina sp.</i>	Shrubs	C
Highbush Blueberry	<i>Vaccinium corymbosum</i>	Shrubs	C
Hinoki Cypress	<i>Chamaecyparis obtusa</i>	Trees	C
Hollyhock	<i>Alcea sp.</i>	Perennials	C
Hybrid Tea Rose	<i>Rosa x hybrid</i>	Shrubs	C
Impatiens	<i>Impatiens walleriana</i>	Annuals	C
Japanese Euonymus	<i>Euonymus japonica</i>	Shrubs	C
Japanese Holly	<i>Ilex crenata</i>	Shrubs	C
Late Lilac	<i>Syringa villosa</i>	Shrubs	C
Leyland Cypress	<i>Cupressocyparis leyandii</i>	Trees	C
Meadowsweet	<i>Filipendula sp.</i>	Perennials	C
Morning Glory	<i>Ipomea sp.</i>	Annuals	C

<b>Common Name</b>	<b>Latin Name</b>	<b>Type</b>	<b>Rating</b>
Mountain Bluet	<i>Centaurea montana</i>	Perennials	<b>C</b>
Mountain Laurel	<i>Kalmia latifolia</i>	Shrubs	<b>C</b>
Multiflora Rose	<i>Rosa multiflora</i>	Shrubs	<b>C</b>
Nellie Stevens Holly	<i>Ilex x 'Nellie R. Stevens'</i>	Trees	<b>C</b>
Northern Red Oak	<i>Quercus rubra</i>	Trees	<b>C</b>
Norway Maple	<i>Acer platanoides</i>	Trees	<b>C</b>
Oakleaf Hydrangea	<i>Hydrangea quercifolia</i>	Shrubs	<b>C</b>
Panicle Hydrangea	<i>Hydrangea paniculata</i>	Shrubs	<b>C</b>
Panicled Dogwood	<i>Cornus racemosa</i>	Shrubs	<b>C</b>
Pansy	<i>Viola sp.</i>	Annuals	<b>C</b>
Penstemon	<i>Penstemon sp.</i>	Perennials	<b>C</b>
Pernyi Holly	<i>Ilex pernyi</i>	Trees	<b>C</b>
Persian Lilac	<i>Syringa x persica</i>	Shrubs	<b>C</b>
Phlox	<i>Phlox sp.</i>	Perennials	<b>C</b>
Pink Turtlehead	<i>Chelone sp.</i>	Perennials	<b>C</b>
Purple Leaf Sand Cherry	<i>Prunus x cistena</i>	Shrubs	<b>C</b>
Purple Loosestrife	<i>Lythrum sp.</i>	Perennials	<b>C</b>
Rose Mallow	<i>Hibiscus moscheutos</i>	Perennials	<b>C</b>
Rosebay Rhododendron	<i>Rhododendron maximum</i>	Shrubs	<b>C</b>
Rugosa Rose	<i>Rosa rugosa</i>	Shrubs	<b>C</b>
Shasta Daisy	<i>Chrysanthemum superbum</i>	Perennials	<b>C</b>
Shasta Daisy	<i>Leucanthemum maximum</i>	Perennials	<b>C</b>
Shore Juniper	<i>Juniperus conferta</i>	Shrubs	<b>C</b>
Showy Sedum	<i>Sedum spectabile</i>	Perennials	<b>C</b>
Silver Maple	<i>Acer saccharinum</i>	Trees	<b>C</b>
Smooth Hydrangea	<i>Hydrangea arborescens</i>	Shrubs	<b>C</b>
Solomon's Seal	<i>Polygonatum sp.</i>	Perennials	<b>C</b>
Spurge	<i>Euphorbia dulcis 'Chameleon'</i>	Perennials	<b>C</b>
Staghorn Sumac	<i>Rhus typhina</i>	Trees	<b>C</b>
Sundrops	<i>Oenothera sp.</i>	Perennials	<b>C</b>
Sunflower	<i>Helianthus sp.</i>	Annuals	<b>C</b>
Sweet Cherry	<i>Prunus avium</i>	Trees	<b>C</b>
Sweetgum	<i>Liquidambar styraciflua</i>	Trees	<b>C</b>
Trumpet Creeper	<i>Campsis radicans</i>	Vines	<b>C</b>
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	Vines	<b>C</b>
Wax Begonia	<i>Begonia semperflorens</i>	Annuals	<b>C</b>
Western Arborvitae	<i>Thuja plicata</i>	Trees	<b>C</b>
White Fir	<i>Abies concolor</i>	Trees	<b>C</b>
White Fringe Tree	<i>Chionanthus virginicus</i>	Trees	<b>C</b>
White Oak	<i>Quercus alba</i>	Trees	<b>C</b>
Willows (1)	<i>Salix sp.</i>	Trees	<b>C</b>
Winged Euonymus	<i>Euonymus alata</i>	Shrubs	<b>C</b>
Wintercreeper	<i>Euonymus fortunei</i>	Groundcovers	<b>C</b>
American Arborvitae	<i>Thuja occidentalis</i>	Trees	<b>D</b>
Candy Lily	<i>Pardancanda x norrisii</i>	Perennials	<b>D</b>
Cherries (1)	<i>Prunus sp.</i>	Trees	<b>D</b>
European Mountain Ash	<i>Sorbus aucuparia</i>	Trees	<b>D</b>

Common Name	Latin Name	Type	Rating
Evergreen Azaleas (1)	<i>Rhododendron sp.</i>	Shrubs	<b>D</b>
Hardy Geranium	<i>Geranium endressii</i>	Perennials	<b>D</b>
Hosta	<i>Hosta sp.</i>	Perennials	<b>D</b>
Pinxterbloom Azalea	<i>Rhododendron penclymenoides</i>	Shrubs	<b>D</b>
Plums	<i>Prunus sp.</i>	Trees	<b>D</b>
Rhododendrons (1)	<i>Rhododendron sp.</i>	Shrubs	<b>D</b>
Sea-Holly	<i>Eryngium sp.</i>	Perennials	<b>D</b>
Strawberry	<i>Fragraria sp.</i>	Perennials	<b>D</b>
Tulip	<i>Tulip sp.</i>	Bulbs	<b>D</b>
Wintercreeper	<i>Euonymus fortunei</i>	Shrubs	<b>D</b>
Wintercreeper	<i>Euonymus fortunei</i>	Vines	<b>D</b>
Yews	<i>Taxus sp.</i>	Shrubs	<b>D</b>

## Footnotes

1 Check other rating categories to find additional species or cultivars of this genus.

2 May eat buds.

## Credits

**Content:** Pete Nitzsche, Pedro Perdomo, and David Drake

**Photos:** Pete Nitzsche

**Database Design:** Kathy Robinson and Phil Wisneski

**Website Design:** Phil Wisneski

**Special thanks to our cooperators on this project:** Helen Heinrich, Certified Landscape Architect; James Messina, Certified Landscape Architect, Landscape Plus; Valerie Sudal, Garden Writer, The Newark Star-Ledger; and numerous landscapers, Master Gardeners, and nurserymen who provided ratings.

Highly recommended native plants for the Mid-Atlantic\* Dr. Dan Duran, Rowan University



Flowers / herbaceous

1. **Mountain-mint**<sup>†</sup> (*Pycnanthemum muticum*, *P. incanum*)
2. **Butterfly weed**<sup>†</sup> (*Asclepias tuberosa*) – **NOT the same as butterfly bush!**
3. **Swamp milkweed**<sup>†</sup> (*Asclepias incarnata*)
4. **Asters**<sup>†</sup> – New England (*Symphotrichum novae-angliae*), smooth blue (*S. laeve*), and heartleaf (*S. cordifolium*) are some of the best choices
5. **Goldenrods**<sup>†\*\*</sup> – showy (*Solidago speciosa*), downy (*S. puberula*), and gray (*S. nemoralis*) goldenrod are some of the best choices
6. **Yellow (or blue) wild indigo**<sup>†</sup> (*Baptisia tinctoria*, *B. australis*)



Groundcovers

7. **Violets**<sup>†</sup> – common blue (*Viola sororia*), creamy (*V. striata*)
8. **May-apple**<sup>†</sup> (*Podophyllum peltatum*)



Vines

9. **Coral honeysuckle**<sup>†</sup> (*Lonicera sempervirens*)
10. **Virginia creeper**<sup>†</sup> (*Parthenocissus quinquefolia*)

Shrubs / trees

11. **Arrow-wood viburnum**<sup>†</sup> (*Viburnum dentatum*)
12. **Serviceberries**<sup>†</sup> (*Amelanchier* spp.)
13. **Aronia (chokeberries)** (*Aronia* spp.)
14. **Oaks** – pin (*Quercus palustris*), white (*Q. alba*), scrub (*Q. ilicifolia*), and red (*Q. rubra*) oak are some of the best choices
15. **Wild cherries and wild plums** – black cherry (*Prunus serotina*) pin cherry (*P. pennsylvanica*), American plum (*P. americana*)



\* Based on multiple criteria, including ecological value as a food source for beneficial pollinators, butterfly/moth caterpillars, and/or birds and other wildlife

\*\* Goldenrods do not cause hay fever. This common misconception is probably due to confusion with ragweed.

† No plant is "deer proof", but these species are generally more deer resistant than most plants.

Table H.2.b Desirable flowering plants, suggested for planting.

## Table H.2.c - **Bergen County Audubon Society**

### ***Native Plant Backyard Gardening***

#### *Habitat for Birds (resident & migratory) and Butterflies*

The **Native Plants** below can be used to create a backyard habitat for birds and butterflies.

#### **Butterfly Definitions:**

**Host Plant:** Used by a **specific** butterfly species to lay eggs. Butterflies are specialists. Only host plant leaves can be the food source for the emerging caterpillar. Host plants can be heavily eaten by the growing caterpillars.

**Nectar Plant:** Food source for adult butterflies of many species.

**(H) = HOST plant** Noted in the list along with the butterfly species it serves.

#### **Large Trees**

Tulip (*Liriodendron tulipifera*) **(H)**

American Hackberry (*Celtis occidentalis*) **(H)**

Wild Black Cherry (*Prunus serotina*) **(H)**

Sassafras (*Sassafras albidum*) **(H)**

White Oak (*Quercus alba*) **(H)**

Red Oak (*Quercus rubra*) **(H)**

#### **Butterfly(s)**

E. Tiger Swallowtail

American Snout,

Question Mark, & Mourning Cloak

Red-spotted Purple.

Spring Azure, & E. Tiger Swallowtail

Spicebush Swallowtail

Banded Hairstreak

Gray Hairstreak

#### **Small Trees**

Serviceberry/Shadbush (*Amelanchier spp.*) **(H)**

Pagoda Dogwood (*Cornus alternifolia*) **(H)**

Flowering Dogwood (*Cornus florida*) **(H)**

Eastern Red Cedar (*Juniperus virginiana*)

#### **Butterfly(s)**

Red-spotted Purple

Spring Azure

Spring Azure

#### **Shrubs**

Arrowwood Viburnum (*Viburnum dentatum*) **(H)**

Spicebush (*Lindera benzoin*) **(H)**

Buttonbush (*Cephalanthus occidentalis*)

Clethra "Summersweet" (*Clethra alnifolia*)

Redosier Dogwood (*Cornus sericea*) **(H)**

Silky Dogwood (*Cornus amomum*)

Virginia Sweetpire "Itea" (*Itea virginica*)

#### **Butterfly(s)**

Summer Azure

\*Hummingbird Clearwing Moth

Spicebush Swallowtail

Spring Azure

Oakleaf Hydrangea (*Hydrangea quercifolia*)

Winterberry Holly (*Ilex verticillata*)

Coralberry (*Symphoricarpos orbiculatus*) (H)

Elderberry (*Sambucus Canadensis*)

American Cranberry Viburnum (*Viburnum opulus*) (H)

Red Chokeberry (*Photinia pyrifolia*)

Black Chokeberry (*Photinia melanocarpa*)

Northern Bayberry (*Morella pensylvanica*)

New Jersey Tea (*Ceanothus americanus*) (H)

Mapleleaf Viburnum (*Viburnum acerifolium*) (H)

**Native Azaleas**

\*Snowberry Clearwing Moth

Spring Azure

Spring Azure & Summer Azure

Spring Azure

### Vines

Pipevine (*Aristolochia macrophylla*) (H)

Dropmore Honeysuckle (*Lonicera x brownii*) (H)

Virginia Creeper (*Parthenocissus quinquefolia*) (H)

Trumpet Vine (*Campsis radicans*)

### Butterfly(s)

Pipevine Swallowtail

Spring Azure

\*Snowberry Clearwing Moth

\*various Sphinx Moths

Ruby-throated Hummingbird

### Grasses

Switchgrass (*Panicum virgatum*) (H)

Big Bluestem (*Andropogon gerardii*) (H)

Little Bluestem (*Andropogon scoparius*) (H)

### Butterfly(s)

Least Skipper & various other Skippers

Delaware Skipper

Indian Skipper & various other Skippers

### Host Flowers (Nectar source also)

Swamp Milkweed (*Asclepias incarnata*) (H)

Common Milkweed (*Asclepias syriaca*) (H)

Butterfly Weed (*Asclepias tuberosa*) (H)

False Indigo (*Baptisia australis*) (H)

New York Aster (*Symphotrichum novi-belgii*) (H)

New England Aster (*Symphotrichum novae-angliae*) (H)

Violets (*Viola spp.*) (H)

White Turtlehead (*Chelone glabra*) (H)

Golden Zizia (*Zizia aurea*) (H)

### Butterfly(s)

Monarch

Monarch

Monarch

Wild Indigo Duskywing

Pearl Crescent

Pearl Crescent

Great Spangled Fritillary & Meadow Fritillary

Baltimore Checkerspot

Black Swallowtail

### Flowers – Perennials - Nectar sources for butterflies & Hummingbirds (where noted )

Anise Hyssop (*Agastache foeniculum.*)

Yellow Giant Hyssop (*Agastache nepetoides*)

New York Ironweed (*Vernonia noveboracensis*)  
Joe-Pye Weed (*Eupatorium purpureum*)  
Little Joe-Pye Weed (*Eupatorium dubium*)  
Common Boneset (*Eupatorium perfoliatum*)  
Late Bloom Boneset (*Eupatorium serotinum*)  
Wild Ageratum (*Eupatorium coelestinum*)  
White Snakeroot (*Eupatorium rugosum*)  
Purpletop Vervain (*Verbena bonariensis*)  
Goldenrod (*Solidago spp.*)

**Flowers – Perennials (continued)**

Bee Balm – Jacob’s Cline ( <i>Monarda didyma</i> )	Ruby-throated Hummingbird
Wild Bergamot ( <i>Monarda fistulosa</i> )	Ruby-throated Hummingbird
Cardinal Flower ( <i>Lobelia cardinalis</i> )	Ruby-throated Hummingbird
Great Blue Lobelia ( <i>Lobelia siphilitica</i> )	Ruby-throated Hummingbird
Rose Mallow ( <i>Hibiscus moscheutos</i> )	Ruby-throated Hummingbird
Mountain Mint ( <i>Pycnanthemum virginianum</i> )	
Obedient Plant ( <i>Physostegia virginiana</i> )	
Culver’s Root ( <i>Veronicastrum virginicum</i> )	
Blazing Star ( <i>Liatris spicata</i> )	
Queen of the Prairie ( <i>Filipendula rubra</i> )	
Ox-Eye “False Sunflower” ( <i>Heliopsis helianthoides</i> )	
Tall Coneflower ( <i>Rudbeckia nitida</i> )	
Thread Leaf Coreopsis ( <i>Coreopsis verticillata</i> )	
Gaillardia ( <i>Gaillardia pulchella</i> )	
Purple Coneflower ( <i>Echinacea purpurea</i> )	
Sneezeweed ( <i>Helenium spp.</i> )	
Pink Turtlehead ( <i>Chelone lyonii</i> )	

**Flowers – Annuals** (Nectar sources)

Cosmos (*Cosmos parviflorus*)  
Lantana (*Lantana urticoides*)  
Zinnia (*Zinnia spp.*)  
Nasturtiums  
Mexican Sunflower (*Tithonia rotundiflora*)

**Website:** [www.bergencountyaudubon.org](http://www.bergencountyaudubon.org)

**Email:** [greaauk4@aol.com](mailto:greaauk4@aol.com)

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**H.3 Street Trees** - The predominant street trees in Hillsdale are varieties of oak and maple, white pine, and ash trees. In the northwest area of the borough near Demarest Farm, apple trees are not an uncommon residential and street tree.

- A survey of street trees was conducted by an arborist hired by the Borough on or about 2019. The report provided a qualitative inventory of trees and identified trees that are in poor condition which need to be attended to.
- In order to qualify for state grant funding, Hillsdale maintains Township Community Forestry certification.
- Hillsdale has a tree ordinance, and has a program in place to maintain street trees.
- Hillsdale has a "tree bank" fund that it administers to enhance tree plantings in the borough. Money is placed into the tree bank in lieu of actual tree plantings in circumstances where replacement tree plantings may not be feasible.
- A significant problem exists with Emerald Ash Borer-infected and damaged ash trees in Hillsdale, with some street trees and trees in parks nearing terminal condition with the death of the tree and a threat of structural failure.

To foster the planting of desirable tree plantings, the Hillsdale Environmental Commission prepared a "Street Tree Recommendation List" (updated in October of 2016), a copy of which has been included below as Table H.3.

**H.4 Fire Hazard, History of Wildfire** - Hillsdale has experienced periods of drought/dry conditions and high winds from time to time, prompting general area-wide fire-hazard weather warnings. Hillsdale is a considerably developed community and has been so for many decades. A history of area wildfires associated with Hillsdale has not been encountered.

**H.5 Wildlife: Species Inventory, Including Aquatic Species** - Table H.5 is an inventory (partial) of wildlife found in Hillsdale. This list hopefully will be added to and refined with the passage of time, especially with the input of the Hillsdale's citizens, and perhaps others. Form H.5 (see below) can be used to nominate additional species present in Hillsdale for addition to Table H.5.

## Table H.3

**Large Trees (greater than 50 ft. ht. at maturity):** Recommended for areas with no overhead wires, & no sidewalks.

Botanical Name:	Common Name:	Variety:	*Planting Considerations:
1. Acer rubrum	Red Maple	'Red Sunset'	(1),(3),(4),(7)
2. Cercidiphyllum japonicum	Katsura Tree		(1), (2), (single stem only)
3. Ginkgo biloba	Ginkgo	'Autumn Gold'	-
4. Ginkgo biloba	Ginkgo	'Magyar', 'Princeton Sentry'	(narrow, upright)
5. Gleiditsia triacanthos inermis	Thornless Honeylocust	'Shademaster', 'Halka', 'Imperial', 'Skyline'	(7)
6. Liquidambar styraciflua	Sweetgum	'Cherokee', 'Rotundiloba'	(2), (seedless type only) ,(7)
7. Liriodendron tulipifera	Tulip Tree		(2),weak (5) ,(7)
8. Metasequoia glyptostroboides	Dawn Redwood		(pyramidal)
9. Nyssa sylvatica	Tupelo or Black Gum	'Forum', 'Red Rage'	(2), (wet tolerant) ,(7)
10. Platanus x acerfolia	London Planetree	'Bloodgood', 'Columbia'	Give root space, (5)
11. Quercus bicolor	Swamp White Oak		(2),(3),(4) ,(7)
12. Quercus coccinea	Scarlet Oak		(2) ,(3),(4) ,(7)
13. Quercus phellos	Willow Oak	'Hightower'	(2), ,(3),(4) ,(pyramidal) ,(7)
14. Quercus robur 'Fastigiata'	Fastigate English Oak		(2) ,(3),(4) ,(7)
15. Quercus rubra	Red Oak		(2) ,(3),(4) ,(7)
16. Sophora japonica	Pagoda or Scholar Tree	'Princeton Upright'	(narrow, upright)
17. Taxodium distichium	Bald Cypress		(pyramidal, wet tolerant)
18. Tilia cordata	Littleleaf Linden	'Glenlevyn', 'Shamrock'	(heavy salt sensitive) ,(7)
19. Ulmus Americana	American Elm	Dutch Elm resistant cultivars only	(1) ,(7)
20. Ulmus parvifolia	Asian Elm		(1), (2) ,(7)

**Medium Trees (35 - 50 ft. ht. at maturity):** Recommended for areas with no overhead wires, may need to prune up at sidewalks.

Botanical Name:	Common Name:	Variety:	*Planting Considerations:
1. Betula nigra	Heritage River Birch	'Heritage'	(1), (2),(use single stem) ,(7)
2. Carpinus betulus	European Hornbeam	'Fastigata'	(2), (narrow, upright)
3. Cladrastus kentukea	Yellowwood	'Sweet Shade'	
4. Koeleruteria paniculata	Goldenrain tree	'Rose Lantern', 'Fastigiata'	(2), (pollution tolerant)
5. Magnolia virginiana	Magnolia	'Butterflies', 'Elizabeth', 'sweetbay'	(single stem only) ,(7)
6. Ostrya virginiana	Hop Hornbeam		(2) ,(7)
7. Stewartia koreana	Korean Stewartia		
8. Zelkova serrata	Japanese Zelkova	'Green Vase', 'Musachino'	(2), (vase shape)

**Small Trees (Less than 35 ft. ht. at maturity):** May need to prune up at sidewalks.

Botanical Name:	Common Name:	Variety:	*Planting Considerations:
1. Acer campestre	Hedge Maple	'Evelyn', 'Metro Gold'	(1)
2. Acer ginnala	Amur Maple	'Flame', 'Ruby Slippers'	(1)
3. Acer griseum	Paperbark Maple		(1)
4. Acer saccharum	Sugar Maple		(1) ,(7)
5. Amelanchier Canadensis/Arborea	Serviceberry	'Cumulus', 'Robin Hill', 'Spring Flurry'	(single stem only) ,(7)
6. Cercis Canadensis	Eastern Redbud	'Forest Pansy'(red), 'Alba'(white)	(single stem only) ,(7)
7. Cornus kousa	Kousa Dogwood	'Summer Stars'	
8. Malus	Crabapple 'Cardinal',	'Prairiefire', 'Profusion', 'Spring Snow'	(2), (6), (use single stem) ,(7)
9. Prunus okame	Okame Cherry		(2) ,(7)
10. Prunus sargentii	Sargent Cherry		(2) ,(7)
11. Prunus cerasifera	Purpleleaf Plum	'Krauter Vesuvius', 'Thundercloud'	(2) ,(7)
12. Prunus serrulata kwanzan	Kwanzan Cherry		(2)
13. Prunus	Cherry	'Shubert Canada Red', 'Snow Goose'	(2) ,(7)
14. Prunus yedoensis	Yoshino Cherry	'Akebono'	(2),(6)
15. Pyrus callieriana	Callery Pear	aristocrat,chanticleer,redspire	no problems like Bradford
16. Syringa reticulata	Tree Lilac	'Ivory Silk'	

\*Planting Considerations: (1) Asian Longhorn Beetle Host, (2) Spring planting only, (3)girdling roots, (4) susceptible to leaf scorch, (5) tends to drop debris of flowers, branches and/or leaves, (6) use disease resistant varieties and fruitless varieties whenever possible, (7) considered native

**Table H.5 - Inventory (Partial) of the Wildlife of Hillsdale, New Jersey (Current to: 3/18/2022)**

**Notes:** C = Common; E = Endangered; I = Invasive; N = Nuisance; R = Rare; T = Transient presence.

Common Name	Species, Scientific Name	When Seen		Location Seen	Photo #	Notes, Source, Reference*
		Year	Month			
<b>Terrestrial</b>						
<b>Amphibians</b>						
Frog	Green frog	2014		Tandy/Allen**	TA-0	Steve Buxbaum
	Spring peeper	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Salamander	Red-backed salamander	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Toad, Fowler's	Anaxyrus fowleri	2021	September	Glen Hook Road	A-1&2	Also seen Sept. 2020, same location.
<b>Annelida</b>						
Worm, Night crawler	Lumbricus terrestris			Glen Hook Road		C, I
<b>Birds</b>						
American woodcock		2014		Tandy/Allen**	TA-0	Steve Buxbaum
Bald Eagle	Haliaeetus leucocephalus	2016	December	Above ShopRite		R, "Bald Eagle Viewing Director," Keri Salmieri Ross
		2017	January	Woodcliff Lake Reservoir		"Bald Eagle Viewing Director," Rob Warmflash
		2021	October	Glen Hook Road	B-5 & B-6	Two likely young eagles circling overhead (video footage).
		2021	December	Kinderkamack Road by Clinton Ave.		Steve Goodman
		2021	December	Oakland Avenue		Charles DeFiglio; Flew towards Woodcliff Lake Reservoir.
Black bird		2019	September	Glen Hook Road		C
	Red-wing blackbird	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Blue jay		2021	March	Glen Hook Road		C
Brown-headed cowbird		2014		Tandy/Allen**	TA-0	Steve Buxbaum
Cardinal	Northern cardinal	2021	February	Glen Hook Road		C
Cat bird		2021	April	Train Station		Bob DeFiglio
	Gray Catbird	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Chickadee	Black-capped chickadee	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Crow	American crow	2014		Tandy/Allen**	TA-0	C, Steve Buxbaum
	Fish crow	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Dark-eyed junco		2014		Tandy/Allen**	TA-0	Steve Buxbaum
Duck	Mallard	2021	February	Glendale Park	B-4	C
	Wood duck	2014		Tandy/Allen**	TA-0	Steve Buxbaum

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Common Name	Species, Scientific Name	When Seen		Location Seen	Photo #	Notes, Source, Reference*
		Year	Month			
Eastern Bluebird						"Birds of Pascack Valley" (Information Board) Glendale Park
Finch	American goldfinch	2014		Tandy/Allen**	TA-0	Steve Buxbaum
	House finch	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Goose	Canadian Goose	2021	February	King Court	B-1	C, Ed Alter (Photo)
Grackle	Common Grackle, Quiscalus quiscula	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Hawk	Broad-winged hawk	2014		Tandy/Allen**	TA-0	Steve Buxbaum
	Coopers hawk	2014		Tandy/Allen**	TA-0	Steve Buxbaum
	Red-tailed	2020	July	Craig Road		C
	Sharp-shinned hawk	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Heron	Black-crowned night heron	2014		Tandy/Allen**	TA-0	Steve Buxbaum
	Great blue heron	2014		Tandy/Allen**	TA-0	Special concern (NJ); Steve Buxbaum
Hummingbird	Ruby-throated hummingbird	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Mockingbird	Northern mockingbird	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Mourning Dove		2019	September	Glen Hook Road		C
Northern flicker		2014		Tandy/Allen**	TA-0	Steve Buxbaum
Oriole	Baltimore oriole	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Owl		2019	Summer	Glen Hook Road		(Heard at night)
	Barred owl	2014		Tandy/Allen**	TA-0	Threatened species; Steve Buxbaum
	Eastern screech owl	2014		Tandy/Allen**	TA-0	Steve Buxbaum
	Great horned owl	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Pigeon						C
	Rock pigeon	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Pine siskin		2014		Tandy/Allen**	TA-0	Steve Buxbaum
Robin	American Robin/ Robin Red Breast	2014		Tandy/Allen**	TA-0	C, Steve Buxbaum
Rose-breasted grosbeak		2014		Tandy/Allen**	TA-0	Steve Buxbaum
Sea gull				Plaza Mall		C
Sparrow	House Sparrow	2014		Tandy/Allen**	TA-0	C, Steve Buxbaum
	White-throated sparrow	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Starling	European Starling	2014		Tandy/Allen**	TA-0	C, Steve Buxbaum
Tern		2019	March	Glendale Park	B-3	Shore of stream by Glendale Park (by Lafayette).
Tufted titmouse		2014		Tandy/Allen**	TA-0	Steve Buxbaum
Turkey vulture		2021	February	Glen Hook Road	B-2	R

**Table H.5 - Inventory (Partial) of the Wildlife of Hillsdale, New Jersey (Current to: 3/18/2022)**

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Common Name	Species, Scientific Name	When Seen		Location Seen	Photo #	Notes, Source, Reference*
		Year	Month			
Turkey (wild)		2019	Fall	Glen Hook Road		C, T
Warbler	Yellow-rump warbler	2014		Tandy/Allen**	TA-0	Steve Buxbaum
	Yellow warbler	2014		Tandy/Allen**	TA-0	Steve Buxbaum
White-breasted nuthatch		2014		Tandy/Allen**	TA-0	Steve Buxbaum
Woodpecker	Downy woodpecker	2014		Tandy/Allen**	TA-0	Steve Buxbaum
	Hairy woodpecker	2014		Tandy/Allen**	TA-0	Steve Buxbaum
	Piliated woodpecker	2021	September	Glen Hook Road		
	Red-bellied woodpecker	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Wood thrush		2014		Tandy/Allen**	TA-0	Steve Buxbaum
Wren	Carolina wren	2014		Tandy/Allen**	TA-0	Steve Buxbaum
	House wren	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Yellow-bellied sapsucker		2014		Tandy/Allen**	TA-0	Steve Buxbaum
<b>Insects</b>						
Ant	Carpenter Ant	2020	June			C, N
	Sugar Ant					C, N
Bee	Bumble Bee	2020	July	Glen Hook Road		C
	Honey Bee	2020	July	Glen Hook Road		C
Butterfly	Monarch	2019	August			
	Western Tiger Swallowtail	2020	July	Saddlewood Dr.		Carol Schepker Miller (Photo, Facebook post)
Cicada		2021	July	Glen Hook Road		C
Centipede, House	Scutigera coleoptera	2021	April	Glen Hook Road		C, (Indoors)
Crane Fly ("Daddy Longlegs," "Mosquito Hawk")	Tipulidae	2021	April	Glen Hook Road	I-1	C
Dragon Fly						C
Emerald Ash Borer	Agrilus planipennis					I, N
Fire Fly		2020	June	Glen Hook Road		C
Grasshopper		2021	September	Glen Hook Road	I-6	
June Beetle	Phyllophaga, Melolonthinae (family Scarabaeidae, order Coleoptera)	2021	July	Glen Hook Road		C
Lady Bug		2019	August	Glen Hook Road		C
Mosquito						C
Moth - 'Woolly Bear'	Pyrrharctia	2021	October	Glen Hook Road	I-7	Caterpillar stage

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Common Name	Species, Scientific Name	When Seen		Location Seen	Photo #	Notes, Source, Reference*
		Year	Month			
Pill Bug		2021	July	Glen Hook Road		C, Not an insect - actually the only land-dwelling crustacean.
Spider	Orb Weaver				I-2	C
Stink Bug		2021	February	Glen Hook Road		C, (Indoors)
Termite						N
Tick		2020	Fall	Glen Hook Road		C, N
Wasp	Paper Wasp					C
Weevil, Clay-colored	Otiorhynchus singularis	2019	September	Glen Hook Road	I-3	
Western Leaf-footed Bug	Leptoglossus clypealis	2018	April	Glen Hook Road	I-4	
Yellow Jacket						C
<b>Mammals</b>						
Bat		2014	August	Tandy/Allen**	TA-0	C, Steve Buxbaum
Chipmunk	Eastern chipmunk	2021	July	Glen Hook Road		C
Coyote		2015	February	Glen Hook Road		R, T
Deer	White Tail, Odocoileus virginianus	2018	Summer	Glen Hook Road	M-2	C, (Video)
Fox	Red fox, Vulpes vulpes	2020	November	Wiermus Road	M-5	
Ground Hog		2018	Fall	Glen Hook Road	M-4	C
Mink	American Mink, Neovision vison	2015	October	Country Lane by Hillsdale Brook	M-1	Steve Goodman
Mouse	Field mouse	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Muskrat		2014		Tandy/Allen**	TA-0	Steve Buxbaum
Raccoon		2020	June	Glen Hook Road		C, N
Rabbit	Eastern cottontail rabbit	2018	April	Glen Hook Road		C
Rat				Glen Hook Road		
	Wood rat	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Shrew	Sort-tailed shrew	2014		Tandy/Allen**	TA-0	Steve Buxbaum
Skunk	Striped	2014		Tandy/Allen**	TA-0	C, Steve Buxbaum
Squirrel	Eastern Grey	2019	September	Glen Hook Road	M-3	C
	Flying squirrel	2014		Tandy/Allen**	TA-0	Steve Buxbaum
<b>Marsupials</b>						
Opossum	Didelphis virginiana	2022	January	Glen Hook Road	MS-1	C
<b>Mollusca</b>						
Snail, Leopard	Limax maximus	2021	August	Glen Hook Road	ML-1	C

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**Notes:** C = Common; E = Endangered; I = Invasive; N = Nuisance; R = Rare; T = Transient presence.

Common Name	Species, Scientific Name	When Seen		Location Seen	Photo #	Notes, Source, Reference*
		Year	Month			
<b>Reptiles</b>						
Snake	Garter snake	2014		Tandy/Allen**	TA-0	Steve Buxbaum
<b>Aquatic</b>						
<b>Fish</b>						
Bass, Large Mouth				Woodcliff Lake Reservoir		Wikipedia
Bass, Smallmouth				Woodcliff Lake Reservoir		Wikipedia
Bluegill				Woodcliff Lake Reservoir		Wikipedia
Bullhead, brown				Woodcliff Lake Reservoir		Wikipedia
Bullhead, yellow				Woodcliff Lake Reservoir		Wikipedia
Carp				Woodcliff Lake Reservoir		Wikipedia
Perch, white				Woodcliff Lake Reservoir		Wikipedia
Perch, yellow				Woodcliff Lake Reservoir		Wikipedia
Pumkinseed				Woodcliff Lake Reservoir		Wikipedia
<b>Insects (Aquatic)</b>						

\*Unless otherwise indicated, source is Fred Rubel. \*\* = Saddlewood (Formerly Tandy/Allen) Properties

## Form H.5 - Hillsdale Wildlife/Vegetation Inventory [Data Input Report]\*

Print Your Name:

Email:

Date:

**Notes:** C = Common; E = Endangered; I = Invasive; N = Nuisance; R = Rare; T = Transient presence. [Also, Provide Photo(s), if Possible.]

Type**	Common Name	Species/ Scientific Name	When Seen		Location Seen	Notes, Reference ***
			Year	Month		

\* Submit your entry using this form with as much information as you can provide. Send to the Hillsdale Environmental Commission: [frenv@aol.com](mailto:frenv@aol.com)

\*\* Type = Terrestrial or Aquatic; Amphibian, Arthropod, Bird, Bush, Fish, Fungus, Insect, Mammal, Plant, Reptile, Shrub, Tree, etc.

\*\*\* Provide source/reference, if not directly observed.

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## **H.6 Endangered, Threatened and Species of Special Concern (Animals)**

Endangered Species are those whose prospects for survival in New Jersey are in immediate danger because of a loss or change in habitat, over-exploitation, predation, competition, disease, disturbance or contamination. Assistance is needed to prevent future extinction in New Jersey.<sup>9</sup>

Threatened Species are those who may become endangered if conditions surrounding them begin to or continue to deteriorate.

In New Jersey, the term "Species of Special Concern" applies to species that warrant special attention because of evidence of decline, inherent vulnerability to environmental deterioration, or habitat modification that could 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.<sup>10</sup>

The New Jersey Division of Parks and Forestry, Office of Natural Lands Management Natural Heritage Program identified probable habitats of threatened and endangered species and their supporting ecosystems. Its "Natural Heritage" statewide database consisted of thousands of records of individual occurrences of endangered and threatened species and ecosystems. During the early 2000's, the state's Natural Heritage database at that time did not identify rare plants, animals or natural communities as being present in Hillsdale.<sup>11</sup>

The range over which animals travel and locate is governed by a variety of factors including available habitat - - but is not confined by state, county, or municipal boundaries. The presence of endangered, threatened, and species of concern is not readily determinable from on-line state data bases. The NJDEP Division of Parks and Forestry Office of Natural Lands Management has a policy of not revealing exact locations of sightings of rare, threatened or endangered animal species. This is intended to avoid notoriety for the sensitive habitats on which they depend. The Office maintains a computerized database of all such documented sightings, and provides a listing of species, but not location maps.<sup>12</sup>

Although not officially designated, the Saddlewood (Formerly Tandy/Allen) properties off Hillsdale Avenue potentially include 'prime habitat' for wildlife of concern (e.g., the Great blue heron), and additional prime habitat for wildlife of concern may be present in Hillsdale. A number of species that are afforded protected status have been identified in the area around Hillsdale (see Table H.6, below), which means that habitat and their presence in Hillsdale is possible.

**Table H.6 - Local Animal Species of Special Concern, Threatened, or Endangered**

#	Animal	Type	Status <sup>13</sup>	Source
1	Bald Eagle	Bird	E, T	Sighting reports (see Table H. 5)
2	Bittern, American	Bird	E	Fair Lawn ERI, 2010, <sup>14</sup> p. 32.
3	Goshawk, northern	Bird	E	Fair Lawn ERI, 2010, p. 33.
4	Grasshopper Sparrow	Bird	E	Fair Lawn ERI, 2010, p. 32.
5	Great Blue Heron	Bird	SC	Glen Rock ERI, 2009, <sup>15</sup> p. 121. Sighting (near Hillsdale). <sup>16</sup>
6	Grebe, Pied-Billed	Bird	E	Fair Lawn ERI, 2010, p. 32.
7	Harrier, northern	Bird	E	Fair Lawn ERI, 2010, p. 33.
8	Hawk, red-shouldered	Bird	E	Fair Lawn ERI, 2010, p. 33.
9	Kestrel, American	Bird	T	Glen Rock ERI, 2009, p. 121.
10	Owl, barred	Bird	T	Fair Lawn ERI, 2010, p. 33.
11	Owl, short-eared	Bird	E	Fair Lawn ERI, 2010, p. 33.
12	Salamander, Long-tailed	Amphibian	T	Fair Lawn ERI, 2010, p. 33.
13	Sandpiper, upland	Bird	E	Fair Lawn ERI, 2010, p. 32.
14	Sparrow, Savannah	Bird	T	Fair Lawn ERI, 2010, p. 33.
15	Sparrow, vesper	Bird	E	Fair Lawn ERI, 2010, p. 33.
16	Turtle, bog	Reptile	E	Fair Lawn ERI, 2010, p. 33.
17	Turtle, wood	Reptile	T	Fair Lawn ERI, 2010, p. 33, and Englewood ERI, <sup>17</sup> p. 26.
18	Woodpecker, Red-headed	Bird	T	Fair Lawn ERI, 2010, p. 32.
19	Wren, sedge	Bird	E	Fair Lawn ERI, 2010, p. 33.

E = Endangered species (State of NJ). SC = Status of species is of Special Concern (State of NJ).

T = Threatened species (State of NJ).

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An absence of protected plants or animals on here-to-fore undeveloped property should not be presumed. The NJDEP can be queried at the following address using a standardized request sheet, indicating block and lot numbers for projects to check as to whether there is known or suspected presence of special habitat (e.g., vernal pools) or protected species:

State of New Jersey Department of Environmental Protection  
Natural Heritage Data Request Form  
The New Jersey Natural Heritage Program  
DEP - Office of Natural Lands Management, Mail Code 501-04  
P.O. Box 420 - 501 East State Street  
Station Plaza #5, 4<sup>th</sup> Floor  
Trenton, New Jersey 08625-0420  
609-984-1339  
[Natlands@dep.nj.gov](mailto:Natlands@dep.nj.gov)

In addition to reporting a sighting of a protected animal species within Hillsdale to the NJDEP, anyone spotting such species are encouraged to report this to the Hillsdale Environmental Commission for possible future listing here.

**H.7 Endangered, Threatened and Species of Special Concern (Plants)** - The New Jersey Department of Environmental Protection published a list of rare plant species, and this is included below, as Table H.7.

In addition to reporting a sighting of a protected plant species within Hillsdale to the NJDEP, anyone spotting such animals may report this to the Hillsdale Environmental Commission for possible future listing here.

**H.8 Special Wildlife Habitats (e.g. Vernal Pools, Bald Eagle Foraging Areas)**

In the winter of 2016/2017 a bald eagle was spotted over Shoprite in Hillsdale, and by the Woodcliff Lake Reservoir - - a portion of which is within Hillsdale. Bald eagles were again been spotted during the fall of 2021 (see Table H.5 for details). Beyond possibly the Woodcliff Lake Reservoir, no specific area in Hillsdale is suspected as being a foraging area for bald eagles.

**Table H. 7**  
**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
<b>County: Bergen</b>						
<b>Nonvascular Plant</b>						
<i>Sphagnum angustifolium</i>	Sphagnum		E	LP, HL	G5	S1
<i>Sphagnum contortum</i>	Sphagnum		E	LP, HL	G5	S1
<i>Sphagnum majus ssp. norvegicum</i>	Sphagnum		E	LP, HL	G5?TNR	S1.1
<i>Sphagnum platyphyllum</i>	Sphagnum			HL	G5	SX.1
<i>Sphagnum subsecundum</i>	Sphagnum		E	LP, HL	G5	S1
<i>Sphagnum subtile</i>	Sphagnum			HL	G5?Q	S2
<i>Sphagnum teres</i>	Sphagnum			HL	G5	S2
<b>Vascular Plant</b>						
<i>Acorus americanus</i>	American Sweetflag			HL	G5	S1?
<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>Alopecurus aequalis var. aequalis</i>	Short-awn Meadow-foxtail			HL	G5T5?	S2
<i>Amelanchier humilis</i>	Low Service-berry			HL	G5	S1S2
<i>Ammannia latifolia</i>	Koehn's Toothcup		E	LP, HL	G5	S1
<i>Anemone canadensis</i>	Canada Anemone			HL	G5	SX
<i>Aplectrum hyemale</i>	Puttyroot		E	LP, HL	G5	S1

Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank
County: <b>Bergen</b>						
<i>Arabis hirsuta var. pycnocarpa</i>	Western Hairy Rockcress			HL	G5T5	S1
<i>Asclepias verticillata</i>	Whorled Milkweed			HL	G5	S2
<i>Betula papyrifera var. papyrifera</i>	Paper Birch			HL	G5T5	S2
<i>Botrychium oneidense</i>	Blunt-lobe Grape Fern			HL	G4	S2
<i>Bouteloua curtipendula var. curtipendula</i>	Side-oats Grama Grass		E	LP, HL	G5T5	S1
<i>Callitriche palustris</i>	Marsh Water-starwort			HL	G5	S2
<i>Carex albursina</i>	White Bear Lake Sedge			HL	G5	S2
<i>Carex bicknellii var. bicknellii</i>	Bicknell's Sedge			HL	G5T5	S2
<i>Carex deweyana var. deweyana</i>	Dewey's Sedge		E	LP, HL	G5T5	S1
<i>Carex disperma</i>	Soft-leaf Sedge			HL	G5	S1S2
<i>Carex haydenii</i>	Cloud Sedge		E	LP, HL	G5	S1
<i>Carex pallescens</i>	Pale Sedge			HL	G5	S2
<i>Carex pseudocyperus</i>	Cyperus-like Sedge		E	LP, HL	G5	S1
<i>Carex siccata</i>	Hillside Sedge		E	LP, HL	G5	S1
<i>Carex tuckermanii</i>	Tuckerman's Sedge		E	LP, HL	G4	S1
<i>Carex utriculata</i>	Bottle-shaped Sedge			HL	G5	S2
<i>Castilleja coccinea</i>	Scarlet Indian-paintbrush			HL	G5	S2
<i>Cercis canadensis var. canadensis</i>	Redbud		E	LP, HL	G5T5	S1
<i>Chenopodium rubrum</i>	Red Goosefoot		E	LP, HL	G5	S1
<i>Chenopodium simplex</i>	Maple-leaf Goosefoot			HL	G5	S2

Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank
County: <b>Bergen</b>						
<i>Corallorhiza wisteriana</i>	Spring Coralroot			HL	G5	SX
<i>Coreopsis rosea</i>	Rose-color Coreopsis			LP, HL	G3	S2
<i>Cornus canadensis</i>	Bunchberry			HL	G5	S1S2
<i>Crataegus chrysocarpa</i> var. <i>chrysocarpa</i>	Fireberry Hawthorn			HL	G5T5	S2
<i>Cryptogramma stelleri</i>	Slender Rockbrake		E	LP, HL	G5	SH.1
<i>Cuphea viscosissima</i>	Blue Waxweed			HL	G5?	S3
<i>Cynoglossum virginianum</i> var. <i>virginianum</i>	Wild Comfrey			HL	G5T5	S2
<i>Cypripedium reginae</i>	Showy Lady's-slipper		E	LP, HL	G4	S1
<i>Desmodium cuspidatum</i> var. <i>cuspidatum</i>	Toothed Tick-trefoil			HL	G5T5?	S2
<i>Diplazium pycnocarpon</i>	Glade Fern		E	LP, HL	G5	S1
<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>Epilobium angustifolium</i> ssp. <i>circumvagum</i>	Narrow-leaf Fireweed			HL	G5T5	S1S2
<i>Equisetum pratense</i>	Meadow Horsetail		E	LP, HL	G5	S1
<i>Eriophorum gracile</i> var. <i>gracile</i>	Slender Cotton-grass		E	LP, HL	G5T4T5	SH
<i>Eriophorum viridicarinatum</i>	Thin-leaf Cotton-grass			HL	G5	S3
<i>Gaultheria hispidula</i>	Creeping-snowberry		E	LP, HL	G5	S1

Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank
County: <b>Bergen</b>						
<i>Gnaphalium macounii</i>	Winged Cudweed		E	LP, HL	G5	SH
<i>Gymnocarpium dryopteris</i>	Oak Fern			HL	G5	S1S2
<i>Hieracium kalmii</i> var. <i>fasciculatum</i>	Canada Hawkweed		E	LP, HL	G5T3T5	S1
<i>Hottonia inflata</i>	Featherfoil		E	LP, HL	G4	S1
<i>Hydrocotyle ranunculoides</i>	Floating Marsh-pennywort		E	LP, HL	G5	S1
<i>Hypericum adpressum</i>	Barton's St. John's-wort		E	LP, HL	G3	S2
<i>Hypericum majus</i>	Larger Canadian St. John's Wort		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>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</i> var. <i>maritima</i>	Long-awn Sprangletop			HL	G5T3T4Q	S2
<i>Limosella australis</i>	Awl-leaf Mudwort		E	LP, HL	G4G5	S1
<i>Linnaea borealis</i> var. <i>americana</i>	Twinflower		E	LP, HL	G5T5	SH
<i>Linum sulcatum</i> var. <i>sulcatum</i>	Grooved Yellow Flax		E	LP, HL	G5T5	S1
<i>Lipocarpa micrantha</i>	Small-flower Halfchaff Sedge		E	LP, HL	G5	S1
<i>Luzula acuminata</i> var. <i>acuminata</i>	Hairy Wood-rush		E	LP, HL	G5T5	S1
<i>Lycopodiella inundata</i>	Northern Bog Club-moss			HL	G5	S1S2
<i>Lysimachia hybrida</i>	Lowland Loosestrife			HL	G5	S3

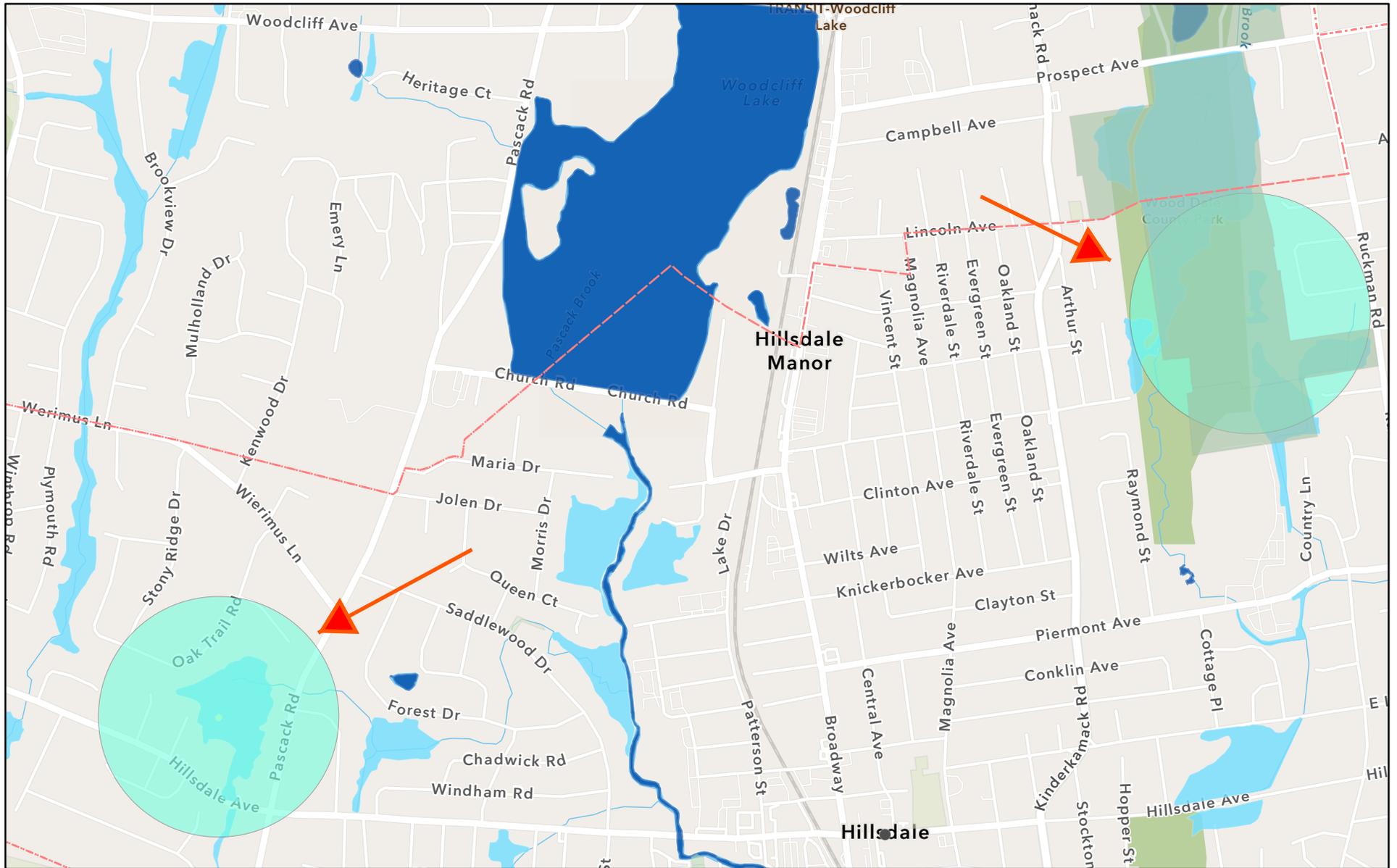
Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank
County: <b>Bergen</b>						
<i>Malaxis unifolia</i>	Green Adder's-mouth		E	LP, HL	G5	SH
<i>Melanthium virginicum</i>	Virginia Bunchflower		E	LP, HL	G5	S1
<i>Menyanthes trifoliata</i>	Buck-bean			HL	G5	S2
<i>Monarda clinopodia</i>	Basil Beebalm		E	LP, HL	G5	SH
<i>Muhlenbergia glomerata</i>	Eastern Smoke Grass			HL	G5	S2
<i>Nuphar lutea ssp. pumila</i>	Small Yellow Pond-lily		E	LP, HL	G5T4T5	SH
<i>Obolaria virginica</i>	Virginia Pennywort			HL	G5	S2
<i>Onosmodium virginianum</i>	Virginia False-gromwell		E	LP, HL	G4	S1
<i>Panicum boreale</i>	Northern Panic Grass		E	LP, HL	G5	S1
<i>Phaseolus polystachios var. polystachios</i>	Wild Kidney Bean			HL	G5T5?	S2
<i>Phlox pilosa var. pilosa</i>	Downy Phlox		E	LP, HL	G5T5	SH
<i>Physalis grisea</i>	Strawberry-tomato			HL	G5?	SH
<i>Plantago maritima var. juncooides</i>	Seaside Plantain			HL	G5T5	S2
<i>Platanthera hyperborea var. huronensis</i>	Leafy Northern Green Orchid			HL	G5T5?	SX
<i>Poa autumnalis</i>	Flexuous Spear Grass		E	LP, HL	G5	SH.1
<i>Potamogeton oakesianus</i>	Oakes' Pondweed			HL	G4	S2
<i>Prenanthes racemosa var. racemosa</i>	Smooth Rattlesnake-root		E	LP, HL	G5T4	SH
<i>Ptelea trifoliata var. trifoliata</i>	Wafer-ash		E	LP, HL	G5T5	S1
<i>Puccinellia fasciculata</i>	Saltmarsh Alkali Grass			HL	G3G5	S1S2
<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

Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank
<i>Ranunculus ambigens</i>	Water-plantain Spearwort			HL	G4	S2
<i>Ranunculus flabellaris</i>	Yellow Water Buttercup			HL	G5	S3
<i>Ranunculus micranthus</i>	Rock Buttercup			HL	G5	S2
<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>Sabatia dodecandra var. dodecandra</i>	Large Marsh-pink			HL	G5?T4T5	S2
<i>Saccharum alopecuroidum</i>	Silver Plume Grass		E	LP, HL	G5	SH
<i>Sagittaria filiformis</i>	Narrow-leaf Arrowhead		E	LP, HL	G4G5	SH
<i>Sagittaria subulata</i>	Awl-leaf Arrowhead			HL	G4	S2
<i>Salix candida</i>	Hoary Willow			HL	G5	S2
<i>Salix lucida ssp. lucida</i>	Shining Willow			HL	G5T5	S1?
<i>Salix pedicellaris</i>	Bog Willow		E	LP, HL	G5	S1
<i>Schoenoplectus maritimus</i>	Saltmarsh Bulrush		E	LP, HL	G5	S1
<i>Schoenoplectus torreyi</i>	Torrey's Bulrush		E	LP, HL	G5?	S1
<i>Scirpus atrocinctus</i>	Black-girdle Woolgrass			HL	G5	S2
<i>Scleria verticillata</i>	Whorled Nut-rush		E	LP, HL	G5	S1
<i>Scutellaria nervosa</i>	Veined Skullcap			HL	G5	S2
<i>Silene caroliniana var. pennsylvanica</i>	Wild-pink			HL	G5T4T5	S3
<i>Smallanthus uvedalius</i>	Bear's-foot		E	LP, HL	G4G5	S1

County: **Bergen**

Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank
County: <b>Bergen</b>						
<i>Solidago rigida var. rigida</i>	Prairie Goldenrod		E	LP, HL	G5T5	S1
<i>Sphenopholis pensylvanica</i>	Swamp Oats			HL	G4	S2
<i>Sporobolus compositus var. compositus</i>	Long-leaf Rush-grass			HL	G5T5	S2
<i>Stachys hyssopifolia</i>	Hyssop Hedge-nettle			HL	G4G5	S2
<i>Thuja occidentalis</i>	Arborvitae		E	LP, HL	G5	S1
<i>Tiarella cordifolia var. cordifolia</i>	Foamflower		E	LP, HL	G5T5	S1
<i>Triglochin maritima</i>	Seaside Arrow-grass		E	LP, HL	G5	S1
<i>Triphora trianthophora</i>	Three Birds Orchid		E	LP, HL	G3G4	S1
<i>Trollius laxus ssp. laxus</i>	Spreading Globe Flower		E	LP, HL	G5T3	S1
<i>Utricularia intermedia</i>	Flat-leaf Bladderwort			HL	G5	S3
<i>Verbena simplex</i>	Narrow-leaf Vervain		E	LP, HL	G5	S1
<i>Viola canadensis var. canadensis</i>	Canadian Violet		E	LP, HL	G5T5	S1
<i>Viola septentrionalis</i>	Northern Blue Violet		E	LP, HL	G5	S1

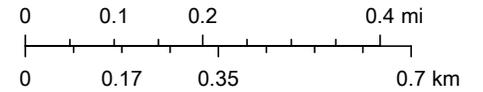
# Figure H.8 NJ-GeoWeb - Potential Hillsdale Vernal Pools



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|-----------------|--------------------|------------------------------------|----------------------------------|
| Open Space      | Municipal Unfunded | Municipalities                     | Vernal Pools - Landscape Project |
| County Unfunded | Water Bodies       | Vernal Habitat - Landscape Project | Potential vernal pool location   |
| Municipal       | Wetlands (2012)    | Potential vernal habitat area      |                                  |



Esri Community Maps Contributors, New Jersey Office of GIS, Esri, HERE,

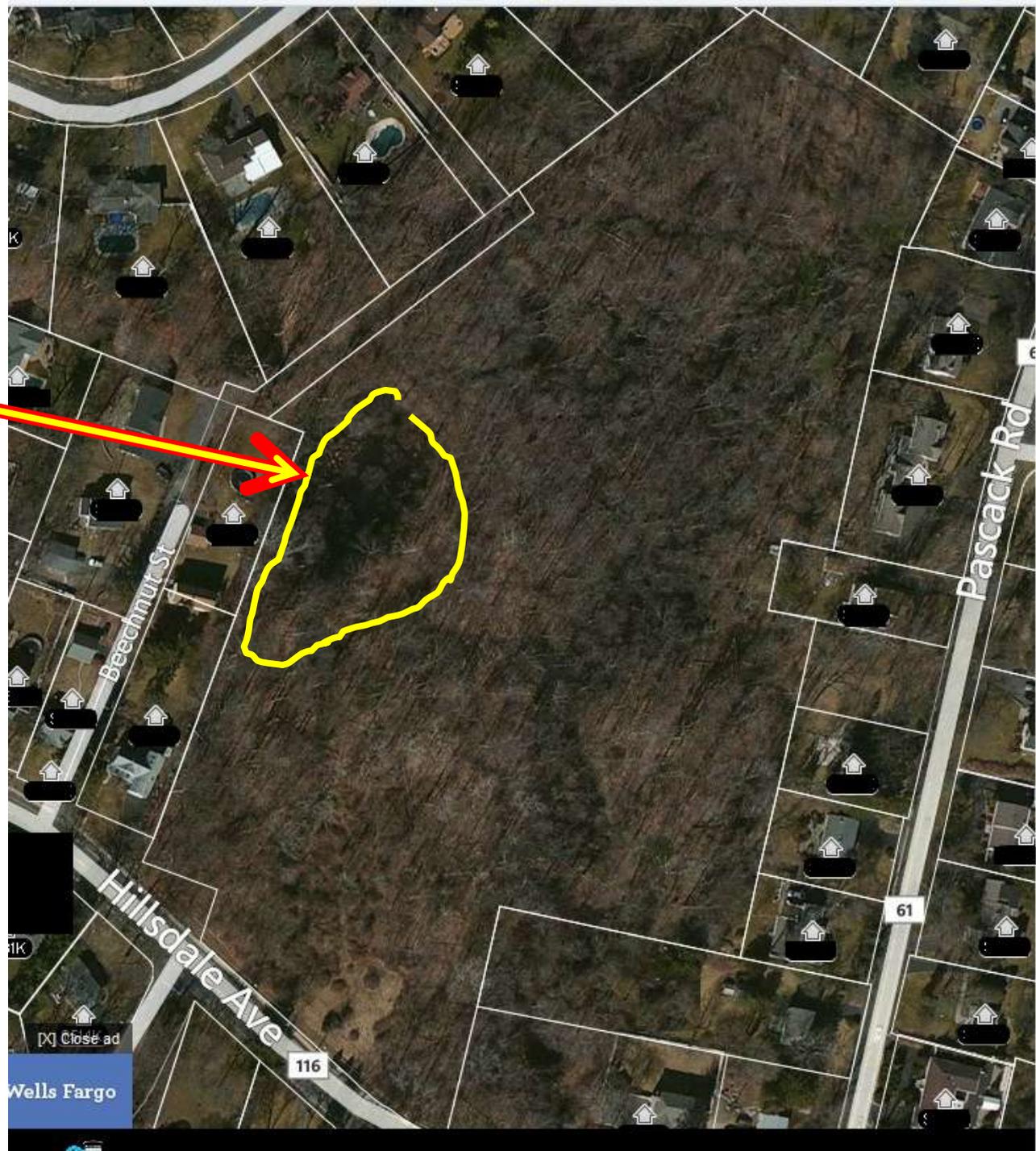
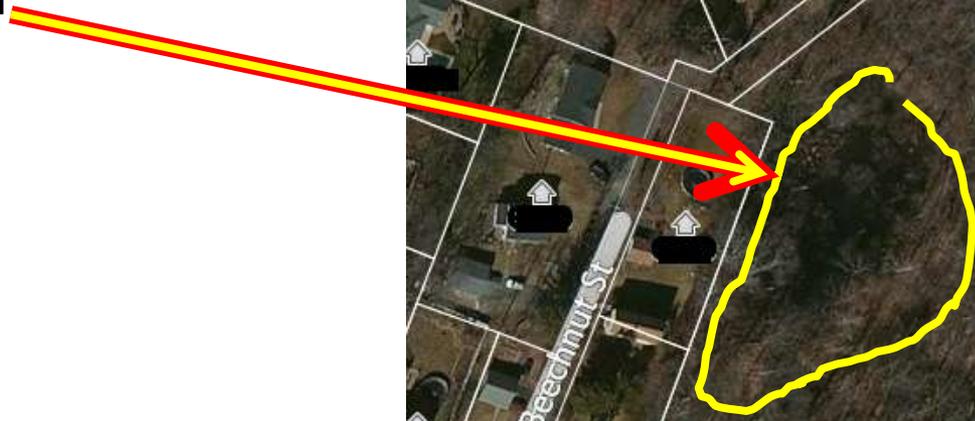
New Jersey Department of Environmental Protection

TANDY PROPERTY

# Vernal Pool

(Block 503, Lot 4)

Vernal Pool



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Vernal pool habitats are ephemeral wetlands with temporary ponding of water, which provides a unique habitat. To be classified by the NJDEP as a vernal habitat, standing water must be present in the pool for at least two continuous months between March and September in a year of normal rainfall. Hillsdale has two (2) locations that have been identified as potentially vernal pools: One is located in the Saddlewood (Formerly Tandy/Allen) property near Pascack Road, off Hillsdale Avenue (see location and wildlife photos, next pages). A second is located in a portion of Wood Dale Park, located off Lincoln Ave., by Ruckman Road near Piermont Avenue. These locations are highlighted in Figure H.8, above.

Vernal pools have only recently been widely recognized for their important ecological function as wetlands. Statewide, the number of vernal pool habitats declined drastically due to development and limited regulatory protection. In 2001 the Freshwater Wetlands Protection Act rules extended specific protection to vernal habitats, restricting filling, altering, draining or otherwise compromising the hydrological or ecological function of vernal habitats without NJDEP approval.

Ecologically, vernal pools harbor obligate or facultative vernal habitat species such as frogs and salamanders as listed by NJDEP, and be free of fish populations. Typical obligate species include amphibians such as the mole salamanders, and wood frog, but are equally important to facultative wildlife such as state threatened Wood turtle. "Obligate species" are those that are dependent on vernal habitats at some stage of the life cycle. "Facultative species" frequently utilize vernal pool habitats but are capable of reproducing outside vernal pool habitats. Photos capturing some of the species that have been found in the Saddlewood (Formerly Tandy/Allen) property in appear below. Landscape Project maps add a 300-meter buffer around the center of designated vernal pools. This buffer has no regulatory status, but is a recognition that the land of immediately surrounding areas may also be important aspects of critical habitat. Vernal pools receive the same regulatory buffers as other delineated freshwater wetlands, depending on the determined resource value. The NJDEP Division of Land Use Regulation (LUR) verifies that freshwater wetlands permit applications do not infringe on certified vernal pool habitat areas.

TANDY PROPERTY (Block 503, Lot 4) WILDLIFE:

White-tailed Deer; Coyote; Red Fox; Raccoon; Virginia Opossum; Striped Skunk; Muskrat; Bat; Wood Rat; Short-tailed Shrew; Eastern Chipmunk; Field Mouse; Eastern Cottontail Rabbit



TANDY PROPERTY (Block 503, Lot 4) WILDLIFE:

Great Horned Owl; Barred Owl; Eastern Screech Owl; Grey Squirrel; Flying Squirrel; Green Frog; Spring Peeper; Red-backed Salamander; Garter Snake; American Woodcock; Wood Thrush;



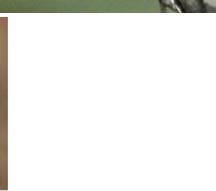
TANDY PROPERTY (Block 503, Lot 4) WILDLIFE:

Red-tailed Hawk; Sharp-shinned Hawk; Coopers Hawk; Broad-winged Hawk; Downy Woodpecker;  
Hairy Woodpecker; Red-bellied Woodpecker; Pileated Woodpecker



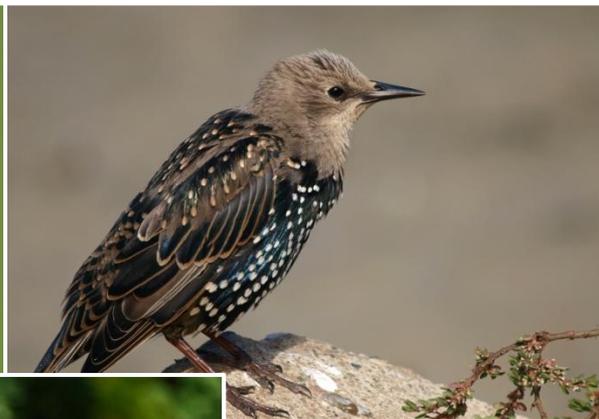
TANDY PROPERTY (Block 503, Lot 4) WILDLIFE:

Northern Flicker; Yellow-bellied Sapsucker; Mourning Dove; Rock Pigeon; Dark-eyed Junco;  
White-breasted Nuthatch; Tufted Titmouse; Black-capped Chickadee; Red-wing Blackbird; Blue  
Jay; Northern Cardinal



TANDY PROPERTY (Block 503, Lot 4) WILDLIFE:

Brown-headed Cowbird; Common Grackle; European Starling; House Sparrow; House Finch; White-throated Sparrow; Rose-breasted Grosbeak; Baltimore Oriole; American Robin; Ruby-throated Hummingbird



TANDY PROPERTY (Block 503, Lot 4) WILDLIFE:

Pine Siskin; American Goldfinch; Yellow Warbler; Yellow-rump Warbler; Carolina Wren; House Wren; Great Blue Heron; Black-crowned Night Heron; Gray Catbird



TANDY PROPERTY (Block 503, Lot 4) WILDLIFE:

Northern Mockingbird; American Crow; Fish Crow; Wood Duck (nesting); Mallard Duck; Turkey Vulture; Canada Goose



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The New Jersey Freshwater Wetlands Protection rules specifically restrict the activities allowed in vernal pools and their associated transition areas.<sup>18</sup>

**H.9 Invasive Exotic Species/Nuisance Species** - Thousands of non-native species have been intentionally and also unintentionally brought to New Jersey from other locations. Many are benign. Some, like agricultural crops, are even highly beneficial. A small percentage can cause severe damage to our environment and can even threaten the health of animals and residents. Invasive species range from plants and animals to fungi, microbes and pathogens.

An increasing number of invasive species, however, threatens our natural heritage. It is estimated that there are 2,200 native (indigenous) plant species in New Jersey, with an estimated 4,000 exotic species of plants that have been introduced to New Jersey, of which some 1,300 have 'escaped' into the wild. About 400 of these are considered to be invasive plants. It is startling to think that about 37% of New Jersey's present flora (species of vegetation) are exotic (non-native) species.<sup>19</sup>

The economic damage caused by invasive species in New Jersey has been estimated at \$290 million in annual agricultural losses alone. To address growing concerns about invasive species, the New Jersey Invasive Species Council was established to coordinate and guide invasive species activities throughout New Jersey and to act as a liaison for regional and national cooperative efforts. Since its creation, the Council has focused on developing the New Jersey Strategic Management Plan for Invasive Species which was published in 2009. The management plan includes, among other things: findings concerning the current status of non-indigenous plant species in New Jersey and their impact on habitat, biota and natural ecosystems; identification of prevention methods and procedures for early detection and rapid response; control measures; identification of restoration and research needs; establishment of information management, education and interpretation measures; and coordination among state agencies and adjacent states.<sup>20</sup>

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Invasive species, as referred to here, are species that have been introduced from outside their natural range, that have a detrimental effect on either natural or agricultural systems, or people.

**Invasive/Exotic Species (Vegetation)** - The following is a brief overview highlighting invasive/exotic species of vegetation that are known to be, or may be present in Hillsdale. A 2004 State of New Jersey Department of Environmental Protection report entitled "An Overview of Nonindigenous Plant Species in New Jersey" provides background on the numbers and origins of nonindigenous species of vegetation in New Jersey, discusses problems caused by harmful invasive species, describes current state and federal programs, and examines methods of control and prevention. The report includes fact sheets for the most problematic invasive vegetative species to help guide management and control initiatives. A list of nonindigenous plant species from that report, some of which are present in Hillsdale (see Table H2, above), are listed in Table H.9, below.



"Norway Maple" (Photo: by Fred Rubel)

**Table H.9 - Invasive Nonindigenous Species of Vegetation in New Jersey<sup>21</sup>**

<b>#</b>	<b>Species</b>	<b>Common Name</b>
1	<i>Acer platanoides</i>	Norway Maple (see photo, below)
2	<i>Ailanthus altissima</i>	Tree-of-heaven (see photo, below)
3	<i>Allaria petiolata</i>	Garlic mustard
4	<i>Ampelopsis brevipedunculata</i>	Porcelain berry
5	<i>Berberis thunbergii</i>	Japanese barberry
6	<i>Carex kobomugi</i>	Japanese sedge
7	<i>Celastrus orbiculatus</i>	Asian bittersweet
8	<i>Centaurea biebersteinii</i>	Spotted knapweed
9	<i>Cirsium arvense</i>	Canadian thistle
10	<i>Dipsacus fullonum</i>	Wild teasel
11	<i>Dipsacus laciniatus</i>	Cut-leaf teasel
12	<i>Elaeagnus umbellata</i>	Autumn olive
13	<i>Euonymus alata</i>	Winged spindletree
14	<i>Lespedeza cuneata</i>	Chinese bush-clover
15	<i>Lonicera japonica</i>	Japanese honeysuckle
16	<i>Lonicera morrowii</i>	Morrow's bush honeysuckle
17	<i>Lonicera tatarica</i>	Tartarian honeysuckle
18	<i>Lythrum salicaria</i>	Purple loosestrife
19	<i>Melilotus officinalis</i>	Yellow sweetclover
20	<i>Microstegium vimineum</i>	Japanese stiltgrass
21	<i>Myriophyllum spicatum</i>	Eurasian water-milfoil
22	<i>Polygonum cuspidatum</i>	Japanese knotweed
23	<i>Polygonum perfoliatum</i>	Mile-a-minute
24	<i>Potamogeton crispus</i>	Curly leaf pondweed
25	<i>Ranunculus ficaria</i>	Lesser celandine
26	<i>Rhamnus cathartica</i>	Common blackthorn
27	<i>Robunia pseudoacacia</i>	Black locust
28	<i>Rosa multiflora</i>	Multiflora rose
29	<i>Robus phoenicolasius</i>	Wineberry



"Tree of Heaven" (Photo: by Fred Rubel)

**Invasive/Exotic Species (Other-Than Vegetation)** - The following is a brief overview highlighting invasive/exotic species other-than vegetation that are known to be, or may be present in Hillsdale.

**Asian Longhorned Beetle** - The Asian Longhorned Beetle kills trees (especially maple) and could severely damage forests. It was introduced to the United States through untreated wooden pallets/crates (referred to as wood packaging materials or WPM) carrying goods from Asia. Since 2002, infestations of the beetle have been detected in Jersey City, Hoboken, Linden, Carteret and Rahway.



Photo of the Asian Longhorned Beetle<sup>22</sup>

Cooperation between governmental agencies and an effective public education campaign led to rapid removal of infested trees and installation of replacement trees. A public education campaign, including news releases and readily available information on the NJDA website, provided guides to identification of the beetle and its telltale damage.<sup>23</sup> Although new infestations may occur, especially near previously impacted areas, protocols in place should ensure successful control. Recent international requirements to treat WPM at their point of origin, the natural tendency of the beetle for short-range movements, and effective educational campaign should reduce new introductions from Asia. Continued federal funding and eventual full implementation of international WPM treatment requirements may mean that the threat posed to our forests from this species have a very good chance of being eliminated without causing further significant damage.

**Earth Worm** - Most people are aware of earth worms as a result of digging into composted or garden soil, or taking a walk after a hard rain when they come to the surface and can be found on sidewalks and roads. Earth worms have very large effects on the structure and chemistry of soils that are a benefit to farmers and gardeners.



The Common Earthworm<sup>24</sup>

The common earth worm, *Lumbricus terrestris*, is associated with beautifully fertile garden soils. According to forest ecologists, earth worms do not however, naturally occur in the soils of forests of regions that were covered by glacial ice during the last great Ice Age, termed the Wisconsin glaciation. The Wisconsin glaciation reached its maximum extent about 18,000 years ago in the northern parts of the United States. In New Jersey, this includes the areas north of an uneven line extending from Woodbridge in Middlesex County, through Morristown, and west to the Delaware River near Phillipsburg, as well as all of New York north of New York City. Over the past couple of decades, European and Asian species of earthworms have become abundant in forests throughout the glaciated region, with profound and often damaging consequences for the soils, plants and animals of forests.<sup>25</sup>

Many forests organisms depend on the quality of the soil, and the introduction of earth worms started a cascade of effects extending to many other organisms. In deciduous forests, dead leaves falling to the forest floor in the autumn normally decay rather slowly, resulting in a layer of slightly, to partially, to mostly-decayed leaf material builds up on the surface of the soil. This layer of organic material, is termed the 'O' horizon by soil scientists. This plays a crucial role in forests. Its loose, spongy structure stores moisture, supplies nutrients for plants, provides an ideal environment for seeds to germinate, and supports an amazing number and diversity of other soil organisms. These in

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turn provide food for other invertebrates like ants and beetles, and for vertebrates like salamanders, mice, and birds. Certain kinds of earthworms, termed "anecic" species, create burrows that run vertically from the surface of soil downward, deep into the mineral soil. These species feed on freshly deposited leaves at the surface of the O horizon, and then travel downward in their burrows, excreting digested leaf material as they go. The most common non-native earthworm of this type is the common night crawler, *Lumbricus terrestris*, a very large worm (up to 10 centimeters, or 4 inches long). Night crawlers can remove all the leaf litter deposited on the soil of a typical hardwood forest every year.

Another type of earthworm, termed "epigeic" (or "over-the-soil"), lives only in the litter and on the surface of the mineral soil. A common non-native species of this type is the leaf worm, or beaver tail, *Lumbricus rubellus*. It too rapidly removes leaf litter from forest floors.

A third type of earthworm is termed "endogeic" (or "within-the-soil"). These live only within the mineral soil, helping to mix organic-rich surface soils deeper into the soil profile. These are typically grey or pinkish, rather than reddish-brown. A common endogeic worm is the angle worm, *Aporrectodea caliginosa*, which is often found in gardens. At least 15 different species of non-native worms are now established in northern forests. These forests tend to be all but devoid of leaf litter, and the lack of leaf litter in turn results in the loss of many native forest plants, including ferns, wildflowers, and tree seedlings. The lack of leaf litter also promotes the establishment and growth of some of the most invasive non-native plant species, such as Japanese stilt grass (*Microstegium vimineum*), seen in almost every forest in our region. The loss of the leaf litter is also thought to result in a loss of salamanders, the most abundant vertebrate in the forest.<sup>26</sup>

The nature trail at Beechwood Park in Hillsdale is remarkable for its stands of large, old trees. It is also remarkable in that it lacks important leaf litter throughout the park floor.

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**Emerald Ash Borer** - The Emerald ash borer ("EAB") was first discovered in southeastern Michigan in 2002, and in May 2014 in Somerset County, NJ. It is a non-native insect pest that infests and kills all species of ash trees. It has since been found in 27 additional states and 2 Canadian provinces. The EAB killed tens of millions of ash trees in Michigan, as well as hundreds of millions of additional trees in other infested states and provinces. The adult EAB is about  $\frac{1}{2}$  inch long x  $\frac{1}{8}$  inch wide, metallic green in color, with a metallic copper red abdomen. Its larvae are white/cream colored, measure about 1 to  $1\frac{1}{4}$  inch long and have 10 bell shaped abdominal segments. The EAB has a 1-year lifecycle.



Photo of the Emerald Ash Borer (NJDA Website)

EAB adults emerge in May or early June creating D-shaped exit holes, 3-4 mm in size on the branches and trunks of infested trees. The female adult EAB feeds on the margins of the ash leaf. After feeding, the female EAB deposits eggs in bark crevices or under bark flaps on the trunk or bark. The adult beetle stays active until August. After the egg matures, larvae burrow under the bark and feed on the cambium - the water and nutrient transporting layer of the tree. The larvae become adult beetles in April or May.

EAB first infests the top of the tree's crown, which makes spotting adult beetles or exit holes nearly impossible from the ground. Woodpecker activity and damage on live trees is often an initial symptom of an EAB infestation. As EAB populations increase, crown dieback, epicormic branching, bark splits, and exit holes lower on the bole become more prevalent. Trees will only live an average of 3-4 years after infestation and 99% of ash trees will die.<sup>27</sup> A series of chemical treatments can

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exterminate the insect and save a tree provided the damage to the tree has not progressed too far. Many ash trees seriously damaged by the EAB insect have already been identified in Hillsdale.<sup>28</sup>

**Longhorned Tick** - In late 2017, the Asian Longhorned Tick (*Haemaphysalis longicornis*), was found on a sheep in Hunterdon County. Since then, as of May 2020, the Longhorned Tick has been found in six NJ counties (Hunterdon, Union, Middlesex, Mercer, Bergen, Somerset, Passaic, Camden and Monmouth), and in twelve other states.



Photo - Longhorned Tick (NJDEP web site)

Ticks are known to parasitize humans and a wide range of animals, including deer, dogs, raccoons, and opossums in North America. If animals become heavily infested with these ticks, the loss of blood can kill the animal. Currently, this tick has only been shown to become experimentally infected with Rickettsia in the U.S. These exotic ticks are being collected to document their range and to test them for disease.<sup>29</sup>

**Spotted Lanternfly**

Although not known to be problematic specifically to Hillsdale at this time, the Spotted Lanternfly ("SLF"), *Lycorma delicatula*, is an invasive insect that has recently been identified here in the northeast.



Spotted Lanternfly (Photo: NJ Department of Agriculture)

It is planthopper native to China, India, and Vietnam. It is also established in South Korea, Japan and the U.S. It was first discovered in the U.S. in Pennsylvania in Berks County in 2014 and has spread to other counties in PA, as well as the states of New Jersey, Delaware, Maryland, Virginia, West Virginia, New York, Connecticut and Ohio.

This insect has the potential to greatly impact agricultural crops and hardwood trees. SLF feeds on the plant sap of many different plants including grapevines, maples, black walnut, and other important plants in NJ. The spotted lanternfly's piercing-sucking mouthpart feeds on sap from over 70 different plant species. While it does not harm humans or animals, it can reduce the quality of life for people living in heavily infested areas. It has a strong preference for economically important plants and the feeding damage significantly stresses the plants which can lead to decreased health and potentially death.

As SLF feeds, the insect excretes honeydew (a sugary substance) which can attract bees, wasps, and other insects. The honeydew also builds up and promotes the growth for sooty mold (fungi), which can cover the plant, forest understories, patio furniture, cars, and anything else found below SLF feeding. The New Jersey Department of Agriculture asks that we help control the Spotted Lanternfly by destroying any that are spotted in our area.<sup>30</sup>

**NUISANCE SPECIES** - Nuisance species may be invasive/exotic from another location, or indigenous, but their presence is detrimental in some manner to a

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larger or smaller extent. Example nuisance (non-invasive/exotic) species are highlighted below.

**The White-tailed Deer** - A newspaper article from 1948 recounted that many families in Hillsdale had depended on deer for part of their winter supply of meat, with herds often traveling almost through the heart of the Borough. "Even some of the younger men in the neighborhood of 50 years can recall without difficulty herds of more than 20 deer, browsing almost undisturbed below the spillway of Pascack Brook."<sup>31</sup> The presence of the White-tailed deer (*Odocoileus virginianus*) in and around Hillsdale today remains evident to most. Accidental collision with moving vehicles is an ongoing concern, particularly during certain times of the year. The damage that deer can do to residential plantings can be vexing. White-tailed deer also play an important role in the ecology of Lyme disease. In the United States, the incidence and geographic range of Lyme disease continues to increase.<sup>32</sup>



White-Tailed Deer in Hillsdale (Photo by: Fred Rubel)

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Deer have an overall negative impact on new vegetative growth in forested locations. Jay F. Kelly, Ph.D. at Raritan Valley Community College, has made numerous presentations on this subject is a good resource for understanding the status of New Jersey forested areas and the impact that deer populations are having.<sup>33</sup> Table H.2.a shown above contains a listing of plantings that tend to be deer damage resistant. While exciting and beguiling to watch as local wildlife, depending on personal experiences and views, the white-tailed deer might well be classified by many as at least somewhat of a nuisance species.

### **H.10 Economically Valuable Species**

Demarest Farms in Hillsdale, is a source of various farm-grown produce (mainly fruit) of economic value, such as apples and peaches. Save perhaps for humans, no locations in Hillsdale are unique due to the presence of an economically valuable species.

## **[END OF NARRATIVE PORTION OF THIS SECTION]**

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<sup>1</sup> Level III and IV Ecoregions of New Jersey, by Alan J. Woods, James M. Omernik, Brian C. Moran, Department of Geosciences, Oregon State University, Corvallis; U.S. Geological Survey, U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Corvallis, Oregon; and Indus Corporation, U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Corvallis, Oregon, January, 2007.

<sup>2</sup> <https://www.plantmaps.com/interactive-new-jersey-ecoregions-l4-map.php>, accessed 4/16/2021.

<sup>3</sup>

<https://bplant.org/region/851#:~:text=The%20Glaciated%20Triassic%20Lowlands%20represents,and%20low%20hills%20and%20ridges>.

<sup>4</sup> [https://www.state.nj.us/dep/parksandforests/forest/stw\\_inc\\_prog.html](https://www.state.nj.us/dep/parksandforests/forest/stw_inc_prog.html), accessed 4/19/2021.

<sup>5</sup>

<https://bplant.org/region/851#:~:text=The%20Glaciated%20Triassic%20Lowlands%20represents,and%20low%20hills%20and%20ridges>.

<sup>6</sup> "Field Guide to the Beechwood Nature Trail and Conservancy," Hillsdale Conservation Commission, 1970.

<sup>7</sup> "Late Wisconsin-Holocene History of the Lower Hudson Region: New Evidence from the Hackensack and Hudson River Valleys," Stephen P. Averill, Richard R. Pardi, Walter S. Newman, Robert J. Dineen, in Field Studies of New Jersey Geology and Guide to Field Trips, W. Manspeizer, Editor, 1980, Newark, NJ, Rutgers University College of Arts and Sciences, Geology Department, New York State Geological Association, p. 171.

<sup>8</sup> <https://njaes.rutgers.edu/deer-resistant-plants/> accessed 4/27/2021.

<sup>9</sup> NJDEP Division of Fish and Wildlife, <https://www.nj.gov/dep/fqw/tandespp.htm>, accessed 7/20/2021.

<sup>10</sup> NJDEP Division of Fish and Wildlife, <https://www.nj.gov/dep/fqw/spclspp.htm>, accessed 7/20/2021.

<sup>11</sup> 2003 Master Plan, Borough of Hillsdale, Bergen County, by C.T. Statile, PA, Consulting Engineers and Planners, page C 9.

<sup>12</sup> Environmental Resource Inventory, Borough of Fair Lawn, Bergen County, by Hakim Associates, January 19, 2021, page 32.

<sup>13</sup> NJDEP Division of Fish And Wildlife, <https://www.nj.gov/dep/fqw/tandespp.htm>, accessed 7/20/2021.

<sup>14</sup> Environmental Resource Inventory, Borough of Fair Lawn, Bergen County, by Hakim Associates, January 19, 2021.

<sup>15</sup> Environmental Resource Inventory, Borough of Glen Rock, by H2M, July 14, 2009.

<sup>16</sup> This species is similar to the Blue heron. It is believed to have been seen on multiple occasions over a number of years, including as recently as July 2021 about 1 mile west/southwest of Hillsdale's border with Ho-Ho-Kus, in and near Brewster Pond, and its associated drainage stream to the Saddle Brook, along North Saddle Brook Drive, by Hillsdale resident, F. Rubel.

<sup>17</sup> Environmental/Natural Resource Inventory Update, City of Englewood, by Dewberry-Goodkind, Inc. December 2010.

<sup>18</sup> Borough of Ramsey, 2011 Environmental Resource Inventory, Pages 56 & 57.

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- <sup>19</sup> "The Impact of Deer and Invasive Species on Forests in Northern and Central New Jersey," presentation at the Closter Nature Center, May 2018.
- <sup>20</sup> <https://www.nj.gov/dep/njisc/>, accessed 7/14/2021.
- <sup>21</sup> An Overview of Nonindigenous Plant Species in New Jersey, by the State of New Jersey Department of Environmental Protection, February 2004, (Table of Contents).
- <sup>22</sup> Photo from the NJ Department of Agriculture, <https://www.state.nj.us/agriculture/images/albphoto.jpg>, accessed 7/16/2021.
- <sup>23</sup> New Jersey Strategic Management Plan for Invasive Species, 2009, Page 13.
- <sup>24</sup> Wikipedia, <https://upload.wikimedia.org/wikipedia/commons/thumb/3/30/Regenwurm1.jpg/220px-Regenwurm1.jpg>, accessed 7/16/2021.
- <sup>25</sup> <https://www.nynjtc.org/news/worms-woods>, accessed 4/18/2021.
- <sup>26</sup> <https://www.nynjtc.org/news/worms-woods>, accessed 4/18/2021.
- <sup>27</sup> State of New Jersey, Department of Agriculture, <https://www.nj.gov/agriculture/divisions/pi/prog/emeraldashborer.html>, accessed 7/16/2021.
- <sup>28</sup> "Borough of Hillsdale, New Jersey Windshield Tree Survey of Borough and Bergen County Right-of-Way and a Hazardous Tree Survey of High Pedestrian Areas of Borough Parks," August 2018, by John D. Linson.
- <sup>29</sup> NJDEP, <https://www.state.nj.us/dep/fgw/tickinfo.htm>, accessed 7/16/2021.
- <sup>30</sup> <https://www.nj.gov/agriculture/divisions/pi/prog/pests-diseases/spotted-lanternfly/assets/images/hero/hero-home.jpg>, accessed 7/17/2021.
- <sup>31</sup> From a October 9, 1948 article in the Bergen Evening Record, published in "Hillsdale Scrapbook," compiled by the Hillsdale Public Library Reference Department, 1985.
- <sup>32</sup> "Will Culling White-Tailed Deer Prevent Lyme Disease?," *Zoonoses Public Health*. 2016 Aug; 63(5): 337–345., K. J. Kugeler, R. A. Jordan, T. L. Schulze, K. S. Griffith, and P. S. Mead, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4912954/> accessed 5/7/2021.
- <sup>33</sup> "The Impact of Deer and Invasive Species on Forests in Northern and Central New Jersey," presentation at the Closter Nature Center, May 2018.

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## I. Land Use

Version 1: Prepared by Fred N. Rubel, M.S., QEP, Member, Hillsdale Environmental Commission. Last updated, March 19, 2022. Please contact the Hillsdale Environmental Commission to offer any suggested corrections/changes.

**Overview** - Hillsdale is a substantially developed, densely populated community - - even when compared to the State of New Jersey as a whole, which is the most densely populated state in the United States. With a population of about 10,405 people,<sup>1</sup> and occupying only about 2.98 square miles (about 1,907 acres) of land,<sup>2</sup> Hillsdale has a population density of 3,492 persons per square mile. This is nearly three times greater than the population density of the State of New Jersey as a whole, which in 2018 had a density of 1,211.3 persons/square mile.<sup>3</sup>

### I.1. Residential/Commercial/Industrial

The overwhelming majority of Hillsdale's land use is residential. Most retail and commercial businesses are in the downtown area, along Hillsdale Avenue and along Broadway (see the discussion of Hillsdale's planning zones, below). Small, isolated industrial establishments are there as well. Historically, industrial operations have been located along Patterson Street, near Hillsdale's downtown.

**I.2. Infrastructure** - Section "K" of this document provides an overview of infrastructure in the Borough of Hillsdale. A more complete discussion is contained in the Borough's published Master Plan.

**I.3. Waste Collection/Treatment Areas** - No waste treatment facilities are present in Hillsdale. In the past, Waste Management operated a solid waste transfer station for municipal solid waste on property it owns at 131 Patterson Street, adjoining 77 Brookside Place, which is identified as a solid waste container repair facility. Also, Carmine Franco Sanitation Services is (or was) located in this general area, at Patterson Street and Piermont Avenue. This area of Hillsdale (downtown Patterson Street) is the focus of a Borough redevelopment initiative.

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It is uncertain as to whether Waste Management will use its property in this area for waste transfer or other similar purposes again.

**I.4. Open Space** - A specific obligation of Environmental Commissions is to identify, prepare and maintain ". . . an index of all open areas, publicly or privately owned, including open marshland, swamps and other wetlands, in order to obtain information on the proper use of such areas . . ." (N.J.S.A. 40:56A-2). New Jersey's Municipal Land Use Ordinance, at N.J.S.A. 40:55D-5, provides the following relevant definitions:

"Common open space" means an open space area within or related to a site designated as a development, and designed and intended for the use or enjoyment of residents and owners of the development. Common open space may contain such complementary structures and improvements as are necessary and appropriate for the use or enjoyment of residents and owners of the development."

"Open-space" means any parcel or area of land or water essentially unimproved and set aside, dedicated, designated or reserved for public or private use or enjoyment or for the use and enjoyment of owners and occupants of land adjoining or neighboring such open space; provided that such areas may be improved with only those buildings, structures, streets and offstreet parking and other improvements that are designed to be incidental to the natural openness of the land."

"Public areas" means (1) public parks, playgrounds, trails, paths and other recreational areas; (2) other public open spaces; (3) scenic and historic sites; and (4) sites for schools and other public buildings and structures.

"Public open space" means an open space area conveyed or otherwise dedicated to a municipality, municipal agency, board of education, State or county agency, or other public body for recreational or conservational uses.

The term "open space" for the purposes of this inventory is taken to mean:

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- a) Property that is identified as vacant land on the tax rolls, or b) Property that otherwise has substantial grass or other vegetation, and mostly not covered with artificial surfacing (e.g., concrete, macadam), or by structures.

Using these definitions, about 103.6 acres of Hillsdale can be classified as being "open space." This is about 5.5% of Hillsdale's area. Table I.4 in this section contains a listing of the Borough's open space that is the basis for these figures. A list of privately owned land (generally more than 1 acre in size) consisting of substantially unbuilt-upon land is identified in a second, separate list of open (non-public) noteworthy areas. The Saddlewood property (formerly known as the Tandy/Allen property) is listed in the second "Other Properties" list since the site contains about 9 acres that is reserved to remain undeveloped. This open land was originally to be transferred to the Borough, but the Borough has not taken possession of the property. In addition, there are 3.4 acres of open private land that are on the market for sale by its owner for development.

The following main parks and (passive and active) recreational facilities are located in Hillsdale that are open to the public (with some restrictions):

1. Ann Blanche Smith Elementary School - A baseball field is located on the west side of the school, and has been named *Elfenbein (Memorial) Field*. The field includes a dedication plaque. Two more baseball fields and a soccer field are present as well on the east side of the school's property.
2. Beechwood Park - This 21.4 acre<sup>4</sup> park is Hillsdale's main park complex, and is located east of Broadway, along Hillsdale Avenue. This park includes a number of features:
  - a. Beechwood Park Nature Trail This nature trail is located by Holdrum Street and East Liberty Ave. This original forest exhibits three ecological areas within a small area: an uplands; a middle grounds; and a lowland, and is unique to the area. Proper forest management and a level of care consistent with this being a valuable local natural resource, are absent. Graffiti on trees, a sparse understory of new growth trees, and invasive vegetation indicate a forest in jeopardy.<sup>5</sup> Tree and plant identification markings, and known geological, and ecological information about this location are absent from the trail. Sitting benches and a dilapidated boardwalk path above wet lowland grounds are present.

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- b. The Richard Seubert Athletic Field is located within the Beechwood Park complex that includes a softball field that is also used for football at the end of the softball season.
- c. A performance stage/band shell is present at the east end of Beechwood Park.
3. Centennial Field - Located at 360 St. Mary's Street, this large sports field complex is 10.8 acres<sup>6</sup> in size, and can be accessed via St. Mary's Street. This sports complex includes both a little league and a full-size baseball field, and includes Roell Field. The Rich Harada Soccer Complex is also located here, and contains two soccer fields.
  4. Glenbrook Park - This is a small neighborhood park with play equipment for young children.
  5. Hillsdale Public Library - In addition to the library building itself, this 1.4 acre site at 509 Hillsdale Avenue at Yesler Way, includes lawns, a view of Pascack Brook from embankment walls, as well as gardens, trees and other plantings.
  6. Meadowbrook Elementary School - Located at 50 Piermont Avenue, the school has a student green team, and its grounds include vegetated and landscaped areas, as well as a baseball/sports field.
  7. Memorial Park - This 3.3 acre baseball/sports field is located on the south side of Hillsdale Avenue, opposite Beechwood Park and contains a girls' softball field, and a little league baseball field.
  8. Sapienza Gardens - This small 2.7 acre<sup>7</sup> park is located at 100 St. Nicholas Avenue, behind the Pascack Valley High School, is accessible from St. Nicholas Place, off of Kinderkamack Road. Sapienza Gardens includes a Children's Garden, offers lectures by the NJ Audubon Society and others on wildlife, ecology and the environment, promotes children's activities, and sponsors 'garden planting' days.
  9. Stonybrook Swim Club - This 11.3 acre<sup>8</sup> recreational site is located at Cedar Lane and Piermont Avenue, and contains a pool complex, as well as open fields. In addition to the swimming pools (see Section K, "Existing and Planned Infrastructure" for details), this location contains a playground, a basketball court, a volleyball court, a combination soccer/lacrosse field, and a picnic grove.
  10. Veterans Plaza - This small 0.8 acre<sup>9</sup> park is located at 143 Broadway, in the center of Hillsdale's downtown, and contains picnic tables and benches.

**Table I.4 - Index of Hillsdale's Open Space (Current to 1/7/22)**

A specific obligation that Environmental Commissions have in the State of New Jersey, is to identify, prepare, and maintain “. . . an index of all open areas, publicly or privately owned, including open marshland, swamps and other wetlands, in order to obtain information on the proper use of such areas . . .” (N.J.S.A. 40:56A-2). New Jersey's Municipal Land Use Ordinance (N.J.S.A. 40:55D-5) defines Open-Space as "Any parcel or area of land or water essentially unimproved and set aside, dedicated, designated or reserved for public or private use or enjoyment or for the use and enjoyment of owners and occupants of land adjoining or neighboring such open space; provided that such areas may be improved with only those buildings, structures, streets and offstreet parking and other improvements that are designed to be incidental to the natural openness of the land." Properties that contain more than incidental development, such as schools, are therefore not included in this Index. The following is a listing of "Open Space" in Hillsdale. Bergen County property within the boundaries of Hillsdale (not owned by the Borough of Hillsdale) is included in this list. The Hillsdale Library including a small gravel parking lot and adjoining parcels along Hillsdale Ave., parcels set aside for drainage & flood plain storage, a natural sandbar in Pascack Brook, and a small former cemetery (Block 1106, Lot 19) do not appear to meet the definition for inclusion on this list, and therefore are not included.

No.	Property Name	Block No.	Lot No.	Acres	Location	Owner	Primary Use
1	Beechwood Park	1906	1	21.3	Hillsdale Ave./Liberty Ave.	Hillsdale	Park
2	Centennial Field + Old Landfill	2101	20 - 28	11.8	St. Mary/St. Nicholas	Hillsdale	Athletic Field + Closed Landfill
3	Field Adjoining Stonybrook Swim Club	1910	29.02	5.1	183 Cedar Lane	Hillsdale	Soccer/Athletic Field
4	Glendale Park	1106	33 - 37	1.9	Glendale Drive	Hillsdale	Play Ground/Park, Flood Buffer
5	Lot	503	1	0.3	Pascack Rd./Hillsdale, Ave.	Hillsdale	Footpath
6	Lot	601	25	0.2	Oak Trail/Crestwood Place	Hillsdale	Footpath
7	Lot ("Evergreen Park" - Unofficial)	1610	9	0.1	Ralph & Evergreen	Hillsdale	Park (Unofficial)
8	Maple Ave. Park	702	3-7, 12	0.1	Maple Ave.	Hillsdale	Play Ground/Park
9	Memorial Field	1301, 1801	11, 55, 56	8.7	Hillsdale Ave.	Hillsdale	Athletic Field
10	Veterans' Park	1103	1	0.9	Broadway/Park Ave.	Hillsdale	Park
11	Wood Dale Park	2101	1	41.5	St. Nicholas Ave./St. Mary	<b>Bergen County</b>	Park
12	Wood Dale Park	2002	28	11.7	Adjacent Centennial Field; Behind Pascack Valley High School	<b>Bergen County</b>	Park

Total Acres:	<b>103.6</b>	% of Hillsdale 1,887.36 Acres:	<b>5.5%</b>
Average Size (Acres):	<b>8.6</b>		

**Table I.4 - Other Substantially Unbuilt-Upon Properties in Hillsdale (Current to 3/17/22)**

The following properties appear to have substantial portions that are not 'built-upon' but do not meet the New Jersey's Municipal Land Use Ordinance definition of "Open Space" at N.J.S.A. 40:55D-5 ("Any parcel or area of land or water essentially unimproved and set aside, dedicated, designated or reserved for public or private use or enjoyment or for the use and enjoyment of owners and occupants of land adjoining or neighboring such open space; provided that such areas may be improved with only those buildings, structures, streets and offstreet parking and other improvements that are designed to be incidental to the natural openness of the land"). These properties are noteworthy from the standpoint of Hillsdale's Environmental Resource Inventory, as potentially having some significance from a natural resources standpoint.

No.	Property Name	Block No.	Lot No.	Acres**	Location	Owner	Description
1	Ann Blanche Smith Middle School	305	1,5	13.4	1000 Hillsdale Ave.	Hillsdale	School + Athletic Field
2	Demarest Farm	202	1	11.6	244 Wierimus Rd./Hillsdale Ave.	Private/Trust	Agricultural + Store, Equipment Facilities. Farm Land Preservation
3	George G. White Middle School	1410	1	5.6	120 Magnolia/Hillsdale Ave.	Hillsdale	School + Athletic Field
4	Hillsdale House (Most of the open lot is a pond).	2001	4	3.1	32 Piermont Ave.	Hillsdale Senior Housing Corp.	Open Areas Adjoining Multi-Story Housing
5	Hillsdale Public Library	1106	5,23	1.4	509 Hillsdale Ave.	Hillsdale	Library
6	Lot	1106	27	0.1	Glendale Dr./Hazelwood	Private	Vacant
7	Lot (Less than 1 acre)	909	1	0.5	Morris Drive	Private	Recommended for open space acquisition, May 20, 2002.
8	Lot	909	7	6.7	Morris Drive	Private	Wooded, Adjoining Residences
9	Lot West of Pascack Regional High School	2002	30	5.5	Piermont Ave.	Private	Recommended for open space acquisition, May 20, 2002.
10	Meadowbrook Elementary School	2001	3	7.0	50 Piermont Ave. S	Hillsdale	School + Athletic Field
11	Woodcliff Lake Reservoir	1005 - 1008	N/A	26.0	Church Road, Reservoir Road	SUEZ Water North Jersey	Land Adjoining Water Supply Reservoir
12	Edgewood Country Club Golf Course	2201	26, 50, 51	24.6	Piermont Ave.	Private	Golf Course
13	Higgins Property	102	1	5.3	90 Van Emburgh Ave.	Private	Grass, Wooded, Approved for Housing
14	Pascack Valley High School	2002	29-32	34.6	200 Piermont Ave.	Hillsdale	School + Athletic Field
15	Saddlewood (Formerly Tandy/Allen) Properties	503	4	12.2	Hillsdale Ave., West of Pascack Ave.	Private	Portion Excluded from Development?
16	Sapienza Gardens	2101	29	2.7	106 St. Nicholas, Holdrum Brook	Sapienza Gardens Corp.	Garden, Horticultural, Wooded Trails
17	St. Johns Academy/Church of St. John the Baptist	1301	4, 1	11.4	460 Hillsdale Ave.	Catholic Church	School, Church, Athletic Field
18	St. John the Baptist Roman Catholic Church	1101, 1209	4, 1	5.8	69 Valley Street (at Prospect, New St., Orchard)	Catholic Church	Church, Related Facilities

**Total Acres: 177.4 % of Hillsdale 1,887.36 Acres: 9.4%**

From: Hillsdale Tax Map (April 2012); and Hillsdale's Master Plan, Christopher P. Statile, P.A., "Parks Open Space and Recreation Plan Element," page P-1 thru 9.

\*\* Acreage shown is not all "unbuilt upon" land (may include building structures such as schools, parking lots, etc.)

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11. Wood Dale County Park - This county park is 118 acres<sup>10</sup> in total. Nearly half of the park (~53 acres) is in Hillsdale (off Prospect Avenue), with the remainder in Park Ridge and Woodcliff Lake. Park facilities include two tennis courts (with lights), an off-leash dog-park area, a pedestrian path, a playground, a picnicking pavilion with electric service (permit required), fishing (NJ state fishing license required), and model boating (by permit).

**I.5. Lesser Known Places of Interest** - Among the places in Hillsdale one might find of interest to learn of are the following:

- a. **Cemetery** - A former cemetery from the 1800's, the "Old Hillsdale Graveyard," is located at Hazelwood Ave./Glendale Drive.
- b. **Landfill** - A former waste disposal landfill is now Centennial Field, a municipal sports field complex (see above), accessible via St. Mary's Street.
- c. **Limited Trail** - A limited path exists at the end of Beechnut Street (on the north side of Hillsdale Ave.) alongside and into vacant Tandy and Allen property.
- d. **Mini-Park (Memorial)** - Kenny Cardaci Park, is a 0.2 acre<sup>11</sup> park located off Maple Ave., by Elm St.
- e. **Mini-Park (Memorial)** - Joan Angela D'Alessandro Memorial Park adjoining the Hillsdale Train Station.
- f. **Mini-Park** - Jepson Plaza Flower Garden, by Hillsdale Train Station.
- g. **Mini-Park** - McSpirit Memorial Park is a 0.8 acre<sup>12</sup> park located at 16 Glendale Drive by Sycamore Avenue, off Patterson Street.
- h. **Undeveloped Trail** - At the south end of Hillsdale Court, off Hillsdale Ave., leading into undeveloped private woods in Washington Township.
- i. **Vistas** - At the northwest corner of Hillsdale, along Horizon Place, and adjacent to Demarest Farms, are elevated vantage points that provide views across the Pascack Valley to the New York side of the Hudson Valley to the east, as well as the New York City skyline to the south east. An expanse of open sky that is unique to our mostly developed area can be viewed on Craig Road, at its junction with Demarest Farms.

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- j. **Walking Path** - A narrow public access path with a considerable number of steeply climbing concrete steps extends from the heights of Royal Park Terrace, to Wiermus Road below, west of the Demarest Farms store.
  - k. **Walking Path** - A short wooded walking path heads north behind a baseball cage/dugout at the *east end of Ann Blanche Smith School*, on the north side of Hillsdale Avenue.

**I.6. Zoning Districts** - The following land use zoning districts are identified in Hillsdale's Master Plan.<sup>13</sup> Refer to the latest version of the Borough's Master Plan for any updates to this information:

**Commercial Zoning** - There are two Commercial ("C") zones in Hillsdale, both of which are centrally located around the railroad tracks. The first C zone is located in the northern section of the Borough. It straddles Broadway from the north municipal border with Woodcliff Lake and runs until Knickerbocker Ave. The second C zone is located along Hillsdale's southern border with Westwood. This zone straddles the rail line and includes the St. John's the Baptist Church property. Permitted uses in the C zone include professional offices, retail businesses, offices, banks, restaurants, medical and dental clinic, commercial schools and public parks and playgrounds.

**Industrial Zoning** - The Industrial ("I") zone is located in the center of the Borough, west of the rail line, east of the Pascack Brook, north of Orchard Street and south of Esplanade. Light industrial uses, such as laboratories, manufacturing processing, packaging and warehousing of products are permitted in the I zone. The I zone includes the waste transfer station and the PSEG substation.

**Recreation Zoning** - The Recreation ("REC") zone consists of 11.3 acres and is located south of Piermont Avenue, east of the Townhouse Complex zone (see below), and west of the municipal border with River Vale. The REC zone is completely developed with the Stonybrook Swim Club and a Borough recreation field. Permitted uses in the REC zone include single recreational activities of the field or country club type, single family dwellings, and public parks and playgrounds.

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**Residential Zoning** - The Borough's Master Plan identifies four (4) residential ("R-1" thru "R4") zone designations, the details for each are contained in the Master Plan.

**Senior Citizen Housing Zoning** - A Senior Citizen housing ("SC") zone is the smallest zone district in Hillsdale, consisting of 3.11 acres. It is located on Piermont Avenue, east of the Ruckman Avenue intersection and the Meadowbrook School. The SC zone is completely developed with senior citizen housing.

**Townhouse Complex Zoning** - A Townhouse Complex ("TC") zone is present on the south side of Piermont Avenue near intersection with Ruckman Avenue. This zone is about seven acres in size and is completely developed with townhouses.

**I.7. Changes in Land Use** - Hillsdale is a mostly developed, suburban residential community. Save for the possible redevelopment of the old industrial portion of the downtown area by Patterson Street, no substantial areas of the Borough are slated for a major change in land use.

In 2003 the Environmental Commission developed a conceptual "Greenway Map" for the Borough of Hillsdale (see map that follows). The map identifies potential "green" routes, areas of open space and conservation easements. The concept intends to avoid routes through private property. The Greenway Map that follows represents an initial concept of a possible future, formal greenway system. The Municipal Land Use Law identifies the process for reservation of public areas in N.J.S. 40:55D-44. If the Borough were to choose to establish a formal greenway plan, it would need to enact an ordinance as detailed in Section 44 of the Municipal Land Use Law and create a more specific, detailed map.<sup>14</sup>



**LEGEND**

OPEN SPACE



EASEMENT



 Greenway Within Public-Right-of-Way

# GREENWAY

Prepared by Hillsdale Environmental Commission

NOVEMBER 2003

# MAP 13

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**[END OF NARRATIVE PORTION OF THIS SECTION]**

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<sup>1</sup> 2018 U.S. Census Bureau

<sup>2</sup> 640 acres/square mile.

<sup>3</sup> Statista, June 2020

<sup>4</sup> Section 3, "2019 Hillsdale Forestry Management Plan," page 11.

<sup>5</sup> Letter of Tracy Hanson, Tracy Hanson Landscape & Design, to Hillsdale Mayor and Council, 1/25/2022.

<sup>6</sup> Section 3, "2019 Hillsdale Forestry Management Plan," page 11.

<sup>7</sup> Section 3, "2019 Hillsdale Forestry Management Plan," page 11.

<sup>8</sup> Section 3, "2019 Hillsdale Forestry Management Plan," page 11.

<sup>9</sup> Section 3, "2019 Hillsdale Forestry Management Plan," page 11.

<sup>10</sup> <https://www.co.bergen.nj.us/parks-recreation-areas/wood-dale-county-park>, accessed 12/31/2021.

<sup>11</sup> Section 3, "2019 Hillsdale Forestry Management Plan," page 11.

<sup>12</sup> Section 3, "2019 Hillsdale Forestry Management Plan," page 11.

<sup>13</sup> 2003 Master Plan, Borough of Hillsdale, C.P. Statile, PA, Pages LU-4 and LU-5.

<sup>14</sup> 2003 Master Plan, Borough of Hillsdale, C.P. Statile, PA, Page P-9.

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## J. Historical and Cultural

Version 1: Prepared by Fred N. Rubel, M.S., QEP, Member, Hillsdale Environmental Commission. Last updated March 17, 2022. Please contact the Hillsdale Environmental Commission to offer any suggested corrections/changes.

**Overview** - Community historic and cultural features are an important part of any community's environmental resources. The following is a broad overview of the history of Hillsdale and its environs, along with historic and cultural features that exist. Other references more fully describe Hillsdale's history.<sup>1</sup>

Due to a concentration of industry early on in the area, the Patterson Street area of downtown Hillsdale might be considered the historic district portion of town. However, it in fact does not go very far back in time. For historic context information in this section is organized into three overall historic eras: Original Inhabitants; Post-Lenni Lenape/Pre-Twentieth Century History; and Twentieth-Century Hillsdale.

**Original Inhabitants** - The first people known to have lived in New Jersey have been referred to as the Delaware Indians - - also known as the Lenni Lenape, which translates to "original people" or "genuine people." The Lenni Lenape spoke an Algonquian dialect, and were present in all of New Jersey, Delaware, and eastern Pennsylvania going back some 12,000 years ago according to the book "The Land and Its First People."<sup>2</sup>



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Some 8,000 to 20,000 Lenni Lenape lived within the borders of what is present-day New Jersey at the time that the first Europeans arrived.<sup>3</sup> Within the land of the Lenape, known as Lenapehoking, two different languages were spoken.<sup>4</sup> Munsee was spoken in territories north of the Raritan River and the Delaware Water Gap, and Unami was spoken in the southern territories. Both areas were under separate political rule, and each band was governed by at least two chiefs, a council, and its people. The Lenape migrated west during the late 17th and early 18th centuries, and the villages joined together.<sup>5</sup> Detailed records of the history of the original peoples of this area are almost non-existent. The Lenni Lenape were members of the powerful Algonquin Nation,<sup>6</sup> and likely roamed the Hackensack River valley at the time of the arrival of the first Dutch who began to settle the area in 1630.

With respect to remnants of pre-European settlement inhabitants, Francesca Moskowitz, a trustee at the Pascack Historical Society indicates "There was a very small number of Lenape around here. There was never an archeological site found here, but there were random arrowheads." A few artifacts from the Lenape, and the names of the Pascack and Musquapsink Brooks are almost all that remain from the several millennia over which original peoples were in Hillsdale and the surrounding area.<sup>7</sup>

**Post-Lenni Lenape/Pre-Twentieth Century History** - This section on Hillsdale's history and culture is intended to encompass early European settlement of the area, British colonization, the American Revolutionary War and Civil War, and pre-twentieth century development of the Borough. The first European settlers in the area that is now Hillsdale were farmers who were some of Bergen County's earliest families, including the Blauvelt, Demarest, Durie, Banta, Forshee, and Vanderbeck families.<sup>8</sup> They located their farmsteads along the oldest roads in what is now the Borough of Hillsdale. These roads, in existence before 1840, as seen on the U. S. Coast Survey map of the area are: Demarest Avenue; Ruckman Avenue; Piermont Avenue; Cedar Lane; Broadway north of Piermont Avenue; Hillsdale Avenue between Broadway and Pascack Road, Yesler Layne; Ell Road; Pascack Road with the section between Ell Road and Hillsdale Ave. omitted; Wiermus Lane; and Wiermus Road (various spellings of Wiermus exist). A 1840 map shows about thirty farmsteads along these roads in present-day Hillsdale. Neither that map nor a 1861 Hopkins

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Map of Bergen and Passaic Counties identify the then rural area that is now Hillsdale by name.

On or about September 27, 1778, a notorious Revolutionary War event known today as "The Baylor Massacre," took place at the Hering Farm on Rivervale Road in what is now River Vale, which was part of Hillsdale from 1898 to 1906.<sup>9</sup> British troops surprise-attacked the 3<sup>rd</sup> Regiment of Continental Light Dragoons under the command of Colonel George Baylor. The remains of those killed were re-discovered during an archaeological survey in 1967 in the vicinity of Rivervale Road and Red Oak Drive in River Vale. In 1970 those remains were reinterred in this wooded area that has since been designated a County Historic Site and park.<sup>10</sup> The original burial site on the banks of the Hackensack River is now marked with the site's original millstone. This historic park contains accessible pathways and historic interpretive panels describing the history of the Baylor Massacre.

Pre-1900's milestone dates in Hillsdale's recent history, include:<sup>11</sup>

**1869** - The first railroad train entered "Hillsdale" on December 25<sup>th</sup>.

**1870** - Rail travel opened to public at Hillsdale station on March 4<sup>th</sup>.

**1871** - The park area in the center of town was donated by David P. Patterson.

**1874** - Hillsdale Methodist Episcopal Church organized on May 3<sup>rd</sup>.

**1890** - Holy Trinity Episcopal Church held its first service on June 29<sup>th</sup>.

**1898** - Magnolia Avenue School #2 opened. Hillsdale became incorporated as a township on March 25<sup>th</sup> after the state legislature enabled separation from Washington Township. On April 23<sup>rd</sup>, Hillsdale's Board of Education was organized.

**Twentieth Century Hillsdale** - Milestone dates from the 1900's on that provide context to Hillsdale's more recent history include:<sup>12</sup>

**1900** - On May 7<sup>th</sup> the NY & NJ Telephone Co., which became NJ Bell, was granted a franchise, and the first telephone was installed in home of Thomas C. Demarest on Summit Avenue/Broadway.

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**1902** - In April the Hillsdale Fire Association and Ladies Auxiliary was organized. The first macadam was laid on Summit and Railroad Avenue (now Broadway).

**1903** - On September 3<sup>rd</sup> a water franchise was granted to Hackensack Water Co. to lay water lines and fire hydrants.

**1907-1908** - Special town meetings authorized \$45,000 to macadamize streets.

**1913** - The first post office building was erected. On July 7<sup>th</sup> the first uniformed special police officer was appointed.

**1921** - A new twelve-room schoolhouse was built (now George White School), and on July 8<sup>th</sup> the Hillsdale Fire Department was created.

**1923** - On April 24<sup>th</sup> a "borough" form of government was adopted.

**1924** - On September 15<sup>th</sup> the Avolia Transportation Co. of Paterson inaugurated the first bus service from Hillsdale to Paterson.

**1925** - First assigned Road Department was organized with Axel Gufstafson using wheel barrow and hand tools. On December 13<sup>th</sup> St. John the Baptist R.C. Church was dedicated.

**1927** - On November 9<sup>th</sup> the first Borough Planning Board was appointed.

**1928** - On July 13<sup>th</sup> a regular Police Department was organized. On December 11<sup>th</sup> the first council meeting was held in Borough Hall after purchase from the Exempt Firemen's Association in 1927.

**1929** - On April 5<sup>th</sup> the Sun Dial Garden Club was organized to beautify the Borough. On July 23<sup>rd</sup> a Zoning Board of Adjustment was organized.

**1931** - Shade Tree Commission was formed in April.

**1934** - Hillsdale Recreation Committee formed.

**1936** - The Hillsdale Public Library began to distribute books on Jan. 27<sup>th</sup>.

**1941** - The Hillsdale Defense Council formed May 23<sup>rd</sup> during World War 2.

**1945** - Parks & Playgrounds Commission was organized on July 16<sup>th</sup>.

**1951** - Hillsdale voted to form the Pascack Valley Regional High School District with Montvale, River Vale and Woodcliff Lake. Municipal garbage collection began.

**1954** - The Hillsdale Ambulance Corps became operational on February 1<sup>st</sup>.

**1955** - Pascack Valley Regional High School opened in September, with Ann Blanche Smith School opening that same year.

**1964** - Meadowbrook School opened.

**1968** - Sewer system hookups began.

**1972** - Work began on a new Borough Hall.

**J.1. Historic Sites, Districts, Areas** - The New Jersey Register of Historic Places<sup>13</sup> lists the following formally-recognized historic sites in Hillsdale:

**Table J.1 - Formally Listed Historic Sites in Hillsdale (as of 5/3/2011)**

#	Name	Address	Block/ Lot	National Register	State Register	Source
0227-005	Blauvelt-Demarest House	230 Broadway	1525/8	1/9/1983 #83001472	10/3/1980 # 535	BC Stone House Survey: #71
0227-006	Samuel G. Demarest House	141 Demarest Ave.	1805/1			BCDCHA Recommendation
0227-007	Garret Durie House	156 Ell Road	708/19	1/9/1983 #83001501	10/3/1980 # 536	BCDCHA Recommendation; BC Stone House Survey: #69
0227-008	John Banta House	2 Wierimus Lane	605/13	1/9/1983 #83001462		BCDCHA Recommendation; SR 10/3/1980 # 534; BC Stone House Survey: #70
0227-010	Henry Storms House	233 Wierimus Lane	401/1			BCDCHA Recommendation
0227-011	Vanderbeck House	126 Wierimus Road	101/5	7/24/1984 #84002589	10/3/1980	BCDCHA Recommendation
0227-012	Vanderbeck-Van Riper-Demarest Farm	215 Wierimus Road	202/1			BCDCHA Recommendation
0227-013	Bogert House	231 Wierimus Road	202/2			BCDCHA Recommendation
0227-039	Hillsdale Railroad Station	Broadway/Hillsdale Ave.	1105/5	6/22/1984 #84002566	3/17/1984 # 537	BCDCHA Recommendation
0227-040	John H. Riley Building	102-114 Broadway	1409/7			BCDCHA Recommendation

In addition, the following locations were recommended to be added as historic sites in 2011:

0211-D01; Garden State Parkway Historic District; Entire Garden State Parkway Right-of-Way; (BCDCHA Recommendation); SHPO 10/12/2001 # 3874.

0227-D03; Hillsdale Avenue Streetscape; 355, 357, 375 Hillsdale Avenue; Block (BCDCHA Recommendation).

With respect to remnants of the American Revolutionary War in Hillsdale, several homes survive to this day in Hillsdale from this historic period. The following information is from a web site maintained by Mr. Al Frazza, with photos provided

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to the Hillsdale Environmental Commission as a courtesy by Al Frazza, who reserves all rights relating to his photos of historic Hillsdale homes, below:<sup>14</sup>

**Special Note:** Although historic, this house is private property, which must be respected, and is not to be trespassed upon.

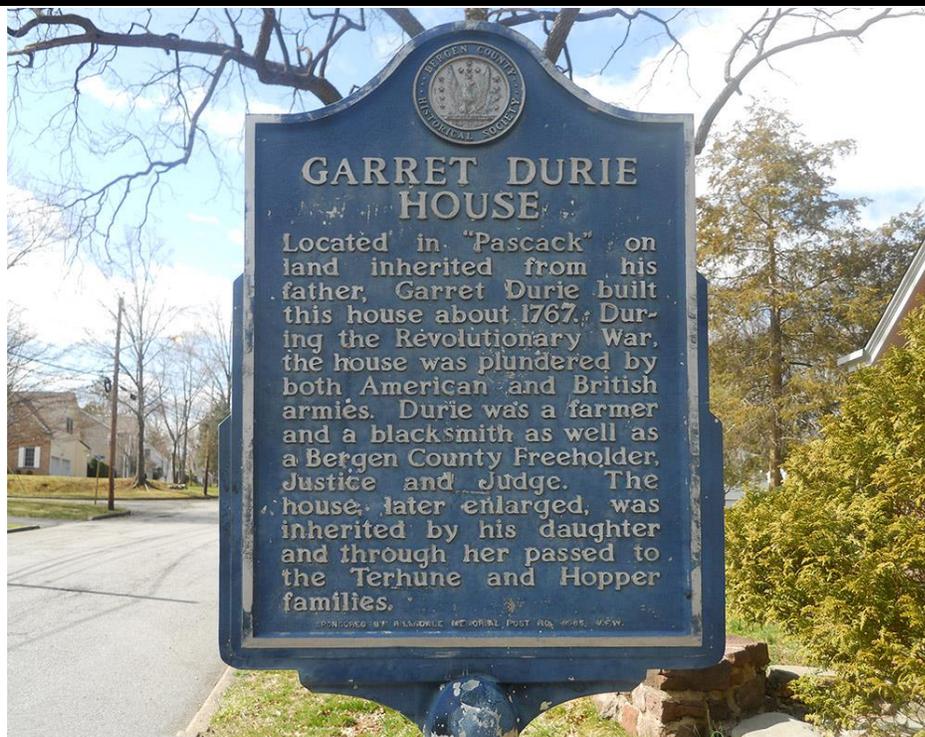
- 1. The Garret Durie House (0227-007)** - Located at 156 Ell Road, this house was built in 1767 by blacksmith and farmer Garret Durie, who also served as a Bergen County Freeholder, Justice and Judge. The house was later enlarged. American, British, Hessian, and French soldiers marched, encamped and fought in New Jersey throughout the Revolutionary War. Because of these armies' need for food and supplies, many citizens of the state had their properties raided. The Durie house, farm and blacksmith shop were plundered by both American and British troops at various times during the Revolutionary War. Durie reported his losses as:
  - Taken by Continental (American) soldiers in November 1776: *A horse, four beehives, nine sheep, two calves, a bull and a "great coat"*
  - Taken by Major Lee, an American officer, in 1778: *A woolen coverlet and a lamb*
  - Taken by Continental soldiers in 1780: *A side of sole leather, tanned skins, a hand vise and five shillings in silver*
  - Taken by British soldiers in October 1778: *A horse, four sheep, a large 'knot' bowl and a scythe. And from his blacksmith shop: a large vise, a pick iron, a large sledge, three hand hammers, four tongs, five middle-size files, two nail molds and a pair of large pincers.*



Garret Durie House: Photo<sup>©</sup> by Al Frazza, [Revolutionary War New Jersey.com](http://RevolutionaryWarNewJersey.com)



Garret Durie House: Photo<sup>©</sup> by Al Frazza, [Revolutionary War New Jersey.com](http://RevolutionaryWarNewJersey.com)



Garret Durie House: Photo<sup>®</sup> by Al Frazza, [Revolutionary War New Jersey.com](http://RevolutionaryWarNewJersey.com)

**Special Note:** Although historic, this house is private property, which must be respected, and is not to be trespassed upon.

**2. The Westervelt-Demarest House** - This house, located on Hillsdale Avenue, near Saddle Ranch Lane, was originally built in 1756 and later enlarged. It stood on the farm of Peter Westervelt and his wife Catlyntje Haring. Like the Durie Farm, the Westervelt Farm suffered from plunder by soldiers of both sides during the Revolutionary War. Peter A. Westervelt reported his losses as:

Taken by Continental (American) soldiers in 1776:

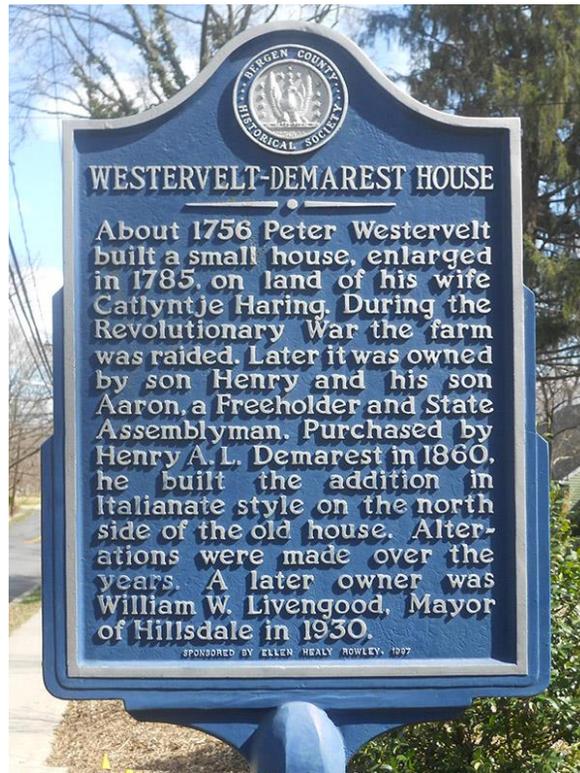
- *A new Indian blanket, a beehive and bees, 100 pounds of rye flour, a side of sole leather, a dressed calf skin, two pigs, and a sheep*

Taken by British soldiers in 1782:

- *Two horses, a pair of new shoes, and a middle-size iron pot*



Westervelt-Demarest House: Photo<sup>®</sup> by Al Frazza, [Revolutionary War New Jersey.com](http://www.RevolutionaryWarNewJersey.com)



Garret Durie House: Photo<sup>®</sup> by Al Frazza, [Revolutionary War New Jersey.com](http://www.RevolutionaryWarNewJersey.com)

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**J. 2. Historic Roads, Bridges and Trusses** - Roads in existence in Hillsdale before 1840, as seen on the U. S. Coast Survey map: Demarest Avenue; Ruckman Avenue; Piermont Avenue; Cedar Lane; Broadway north of Piermont Avenue; Hillsdale Avenue between Broadway and Pascack Road, Yesler Layne; Ell Road; Pascack Road with the section between Ell Road and Hillsdale Ave. omitted; Wiermus Lane; and Wiermus Road.<sup>15</sup> There are no bridges or trusses that span very wide waterways in Hillsdale. The main bridge of note in Hillsdale is the Patterson Bridge, which is a small bridge that was replaced in the fall of 2014 to better accommodate the passage of waters beneath it, so as to alleviate chronic flooding of the Pascack Brook in this area.

**J. 3. Existing or Possible Archeological Sites** - Archeologic reviews of the area have been conducted in the past,<sup>16</sup> including in connection with the replacement of the Paterson Street Bridge. Beyond the presence of historic homes, some of which were identified earlier, subject to further investigation at this time there are no known unique archeological sites in Hillsdale.

**J. 4. Scenic Qualities, Viewsheds** - Hillsdale has no sites formally designated for viewing unique vistas. Section E.3 of this Environmental Resource Inventory provide photos, and points in the northwest portion of the Borough, however, that offer impressive vistas that can be seen from various residences and roadways. This includes unique vistas can be seen at dead-end streets abutting Demarest Farms. One can view high lands beyond the east side of the Pascack Valley to New York to the east. A view of the New York City skyline can be glimpsed to the southeast. With adequate attention to traffic and road conditions, one can also see the New York City skyline while driving/walking along Wierimus Road, by Demarest Farms.

**[END OF NARRATIVE PORTION OF THIS SECTION]**

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<sup>1</sup> [https://www.hillsdalenj.org/index.asp?Type=B\\_BASIC&SEC={0B6300EE-1C85-41A8-A52A-53390A304CFF}](https://www.hillsdalenj.org/index.asp?Type=B_BASIC&SEC={0B6300EE-1C85-41A8-A52A-53390A304CFF}) accessed 9/29/21; "Hillsdale Centennial Journal 1898 - 1998"; "The Story of New Jersey's Civil Boundaries, 1606-1968" by John P. Snyder, New Jersey Geological Survey, reprinted 2004; "Bergen County Historic Sites Survey, Borough of Hillsdale, 1982 - 1983," by Bergen County Board of Chosen Freeholders; "Hillsdale Scrapbook," A Selection of Newspaper Articles About Hillsdale History Published during the 50<sup>th</sup> and 75<sup>th</sup> Anniversary Years," Compiled by the Hillsdale Public Library Reference Department, 1985.

<sup>2</sup> No further reference regarding this book was identified.

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- <sup>3</sup> NJ.gov, [https://www.nj.gov/nj/about/history/short\\_history.html#:~:text=The%20first%20people%20to%20live.when%20the%20first%20Europeans%20arrived.&text=Europeans%20called%20them%20the%20Delaware%20Indians](https://www.nj.gov/nj/about/history/short_history.html#:~:text=The%20first%20people%20to%20live.when%20the%20first%20Europeans%20arrived.&text=Europeans%20called%20them%20the%20Delaware%20Indians) accessed 11/15/2021.
- <sup>4</sup> Gregory Evans Dowd in the book "The Indians of New Jersey."
- <sup>5</sup> "The Indians of New Jersey," [https://www.google.com/search?q=native+americans+hillsdale%2C+nj&sxsrf=AOaemvll31UncW0SIVypekEBHU9JzYGkyg%3A1634597461158&source=hp&ei=VfptYaOQB8SC9u8P8vqawA8&iflsig=ALs-wAMAAAAAYW4IZUNfaOln\\_b1FfXt-g-Z0uvA\\_CSwp&ved=0ahUKEwjjpWlhtXzAhVEgf0HHXK9BvgQ4dUDCAk&uact=5&og=native+americans+hillsdale%2C+nj&gs\\_lcp=Cgdnd3Mtd2l6EAM6BAgjECc6CwguEIAEELEDEIMBOgsIABCABBCxAxCDAToOCC4QgAQQsQMqQxwEQ0QM6BQgAEIAEOg4lLhCABBCxAxDHARCjAjoICC4QsQMqQwE6CAquEIAEELEDOgUilHcABDOLCAAQgAQQsQMqQyQM6BQgAEJIDOGgIABCABBCxAzOLCC4QgAQQxwEQrWE6CwguELEDEMcbEKMCOgUIABCGAZoGCAAQFhAeUNQJWKs7YNg-aABwAHgAgAGeAYgBsReSAQUxNS4xNZqBAKABAQ&scient=gws-wiz](https://www.google.com/search?q=native+americans+hillsdale%2C+nj&sxsrf=AOaemvll31UncW0SIVypekEBHU9JzYGkyg%3A1634597461158&source=hp&ei=VfptYaOQB8SC9u8P8vqawA8&iflsig=ALs-wAMAAAAAYW4IZUNfaOln_b1FfXt-g-Z0uvA_CSwp&ved=0ahUKEwjjpWlhtXzAhVEgf0HHXK9BvgQ4dUDCAk&uact=5&og=native+americans+hillsdale%2C+nj&gs_lcp=Cgdnd3Mtd2l6EAM6BAgjECc6CwguEIAEELEDEIMBOgsIABCABBCxAxCDAToOCC4QgAQQsQMqQxwEQ0QM6BQgAEIAEOg4lLhCABBCxAxDHARCjAjoICC4QsQMqQwE6CAquEIAEELEDOgUilHcABDOLCAAQgAQQsQMqQyQM6BQgAEJIDOGgIABCABBCxAzOLCC4QgAQQxwEQrWE6CwguELEDEMcbEKMCOgUIABCGAZoGCAAQFhAeUNQJWKs7YNg-aABwAHgAgAGeAYgBsReSAQUxNS4xNZqBAKABAQ&scient=gws-wiz) accessed 10/18/2021.
- <sup>6</sup> <http://www.usgennet.org/usa/nj/state/Lenape.htm> accessed 11/15/ 2021.
- <sup>7</sup> History of Hillsdale Part I - <https://www.hillsdalenj.org/index.asp?SEC=9299EBFA-C9E3-46C5-B1CD-7967BA809D4A> accessed 10/18/2021.
- <sup>8</sup> Bergen County Historic Sites Survey, Borough of Hillsdale, Bergen County Board of Chosen Freeholders, Bergen County Office of Cultural and Historic Affairs, Bergen County Historic Sites Advisory Board, 1982 – 1983, page 9.
- <sup>9</sup> "History of Hillsdale, Part I," <https://www.hillsdalenj.org/index.asp?SEC=9299EBFA-C9E3-46C5-B1CD-7967BA809D4A> accessed 9/29/2021.
- <sup>10</sup> <https://www.co.bergen.nj.us/discovering-history/cultural-historic-sites> accessed, 12/14/2021.
- <sup>11</sup> Borough of Hillsdale Website, [https://www.hillsdalenj.org/index.asp?Type=B\\_BASIC&SEC={7C9BB92A-DAEA-4D62-84F4-CE62C8E8E4F1](https://www.hillsdalenj.org/index.asp?Type=B_BASIC&SEC={7C9BB92A-DAEA-4D62-84F4-CE62C8E8E4F1) accessed 9/29/2021.
- <sup>12</sup> Borough of Hillsdale Website, [https://www.hillsdalenj.org/index.asp?Type=B\\_BASIC&SEC={7C9BB92A-DAEA-4D62-84F4-CE62C8E8E4F1](https://www.hillsdalenj.org/index.asp?Type=B_BASIC&SEC={7C9BB92A-DAEA-4D62-84F4-CE62C8E8E4F1) accessed 9/29/2021.
- <sup>13</sup> New Jersey Register of Historic Places Listings and Other Determinations as of 5/3/2011.
- <sup>14</sup> "Revolutionary War New Jersey – The Ultimate Field Guide to New Jersey's Revolutionary War Historic Sites," by Al Frazza, [https://www.revolutionarywarnewjersey.com/new\\_jersey\\_revolutionary\\_war\\_sites/towns/hillsdale\\_nj\\_revolutionary\\_war\\_sites.htm](https://www.revolutionarywarnewjersey.com/new_jersey_revolutionary_war_sites/towns/hillsdale_nj_revolutionary_war_sites.htm) accessed 12/14/2021.
- <sup>15</sup> Bergen County Historic Sites Survey, Borough of Hillsdale, Bergen County Board of Chosen Freeholders, Bergen County Office of Cultural and Historic Affairs, Bergen County Historic Sites Advisory Board, 1982 – 1983, page 9.
- <sup>16</sup> HPO Cultural Resource Reports, sorted by County/Municipality/Shelf Code, for Bergen county, 73 pages, by the NJ Historic Preservation Office, accessed June 23, 2021.

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## K. Existing and Planned Infrastructure

Version 1: Prepared by Fred N. Rubel, M.S., QEP, Member, Hillsdale Environmental Commission. Last revised, March 18, 2022. Please contact the Hillsdale Environmental Commission to offer any suggested corrections/changes.

**Overview** - The following is an overview of infrastructure in the Borough of Hillsdale. Beyond this overview, a more complete description of the borough's infrastructure is contained in the borough's published Master Plan.

**K.1. Transportation** - The growth and historic development of Hillsdale is largely tied to developments in transportation that connected Hillsdale to other important locations - - initially to the industrial center of Patterson, and then more generally, to the City of New York.

**Train Station & Commuter Parking Lot** - New Jersey Transit Pascack Valley Line commuter trains transit through Hillsdale, with a commuter train station in the borough's downtown, at the junction of Hillsdale Avenue and Broadway. Four (4) single "one-day-only" commuter-paid parking spots are located adjacent to/just west of the train tracks for Hillsdale residents. Payment for parking can be made in a yellow box on the train platform with a corresponding parking space number. The borough's main commuter parking lot is Lot #1 (the "West Lot") with 170 spaces. It is located west of the train station, between Hillsdale Avenue and Washington Avenue. Lot #2, with 15 parking spaces, is located off Hillsdale Avenue, on Winkler Way. Lot #3, with 13 parking spaces is located on Broadway, between Hillsdale Avenue and Washington Avenue. Lot #4 with 69 spaces is located adjacent to and west of the rail tracks, at Higinson Crossing and Washington Avenue.

**Other Transportation** - A well-developed network of paved roads is present throughout the borough which connects Hillsdale to neighboring communities. In addition to a New Jersey Transit rail station, bus stops that accommodate travel to and from Hillsdale and surrounding communities, and New York City, are present.

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**K.2. Drinking Water** - Most of Hillsdale is serviced by a private water supply utility - - Suez, North America. A limited number of residences near the western edge of Hillsdale, and the downtown area of the borough rely on groundwater as the source of drinking water, which they access via private wells on their properties. Suez, as do other water utilities in New Jersey, has a program underway to assist in identifying water lines with lead piping - - a source of potentially unhealthful concentrations of lead in drinking water. Residents can check the following website for information about lead in drinking water supply lines: <https://www.mysuezwater.com/customer-survey> .

**Reservoirs** - Hillsdale's northwest corner, includes a portion of the Woodcliff Lake Reservoir. The reservoir was created around 1903 by the damming of the Pascack Brook and is also fed by the Bear Brook which joins the Pascack Brook at the reservoir.<sup>1</sup> The reservoir is owned by Suez North America, a private utility. The reservoir has a capacity of about 871 million U.S. gallons of water. Water released into the Pascack Brook flows downstream into the Oradell Reservoir. When water levels are low, an old stone bridge over the Pascack Brook becomes visible just south of the causeway. Several species of fish inhabit the reservoir including largemouth bass, smallmouth bass, carp, pumpkinseed, bluegill, brown and yellow bullheads, as well as large schools of both yellow and white perch. Fishing is restricted to those with a valid New Jersey Fishing License and a Watershed Permit obtained by completing an application and paying a fee to Suez. A permit for access to the reservoir for fishing and hiking may be obtained by completing an application at: [www.SUEZWatershed.com](http://www.SUEZWatershed.com)

Numerous waterfowl including species of ducks and heron, also live on and around the reservoir, with reports even of bald eagles being spotted in the area.

**K.3. Stormwater** - Hillsdale's current ordinance, codified at §310-107, addressing stormwater management was adopted on February 2, 2021. It addresses stormwater management requirements that apply to new and existing properties in town. Standard street-side stormwater drains convey stormwater underground to local streams. The borough has a municipal stormwater discharge permit (PI ID # 50577) from the New Jersey Department of Environmental Protection that is

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renewed every five years, as well as a Stormwater Pollution Prevention Plan that includes periodic sampling of outfalls, both of which must be complied with. Stormwater collection/discharge system outfalls are shown in Figure K.3, below.

**K.4. Sewage** - Although all of Hillsdale is served by a sewage collection system, there is no sewage treatment plant in Hillsdale. Underground sewer pipes convey wastewater to the Bergen County Utilities Authority, which is located in Little Ferry, New Jersey. There, a wastewater treatment plant treats the sewerage to reduce pollutants, especially to remove solids and oxygen-demanding organics. The treated wastewater is then chlorinated to reduce harmful pathogens, before it is discharged to the Hackensack River.

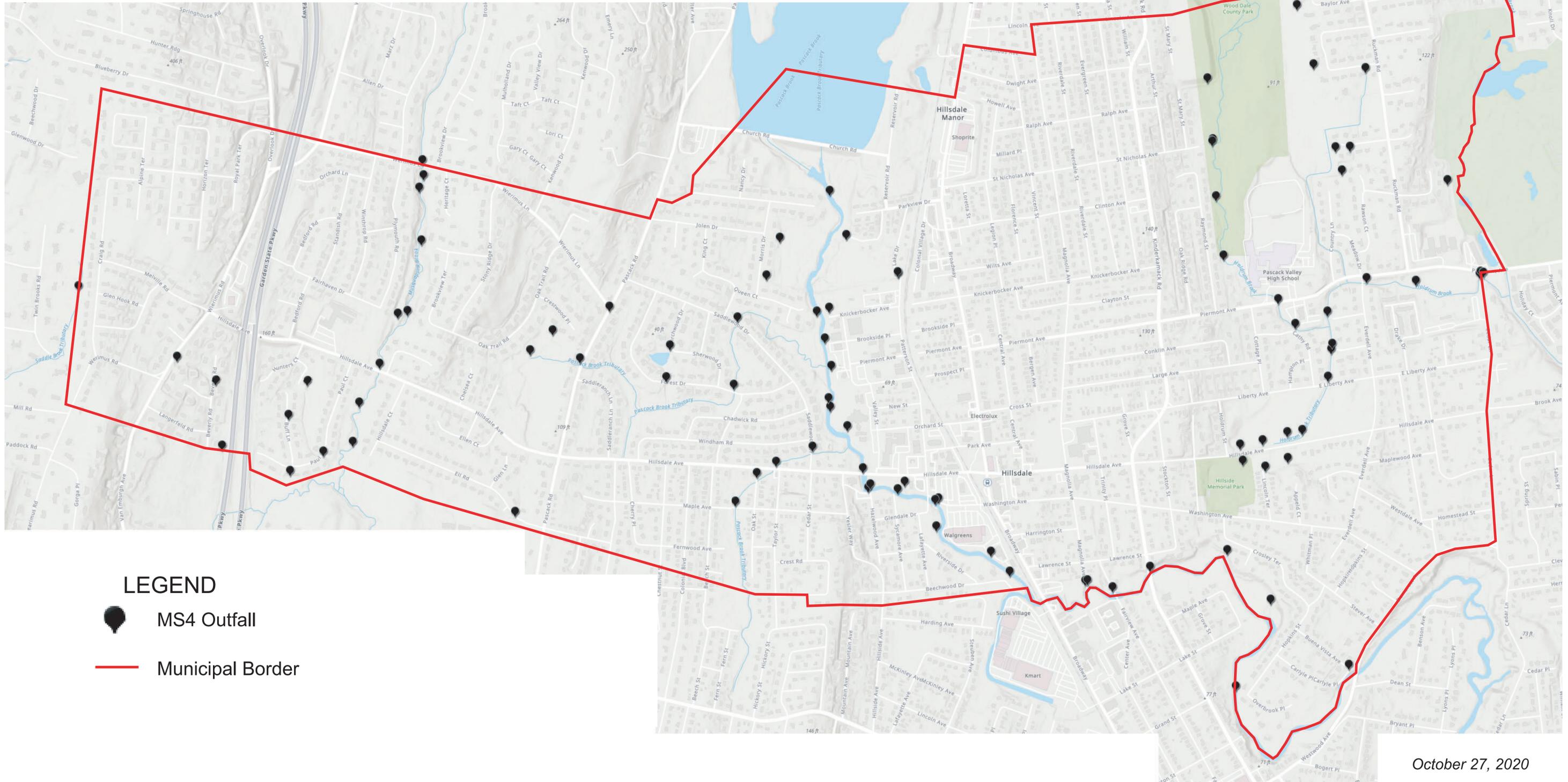
**K.5. Water Treatment, Disposal, Recycling Facilities** - Beyond the sewage conveyance system described above, there are no water or wastewater treatment, disposal, or recycling facilities in Hillsdale.

**K.6. Energy Utilities** - A Public Service Electric & Gas ("PSE&G") electrical substation is present at the end of Patterson Street in the industrial section near the downtown section of the borough. The substation is the major source of electricity supplied to Hillsdale, although some electrical line feeds come from other communities, such as a line feed from Saddle River at Hillsdale's northwest border. At the time of this writing, municipal facilities relying entirely on utility-provided energy, which is derived mostly from traditional fossil-based fuels (e.g., natural gas, gasoline/diesel), rather than renewable sources of energy, such as solar, or geothermal, etc.

**K.7. Communications Towers** - A communications tower is present and is part of Hillsdale's downtown municipal complex. At the juncture of Hillsdale Avenue and the Garden State Parkway, another communications tower is present.

**K.8. Education Facilities** - Hillsdale has two elementary schools, the Ann Blanche Smith School, and the Meadowbrook School. There is a single middle school (George G. White School), and Hillsdale shares a regional high school (Pascack Valley High School) with surrounding towns.

# MS4 Outfall Map Borough of Hillsdale, Bergen County, NJ



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## K.9. Other Infrastructure

**Electric Vehicle Charge Stations** - There are no publicly accessible electric vehicle charge stations in Hillsdale at this time.<sup>2</sup>

**Fire Station & First Aid Squad** - Hillsdale has a volunteer fire department and volunteer emergency medical services squad, with equipment housed in a station located off Hillsdale Avenue, opposite Hillsdale's Municipal Building.

**Library** - A public library is located off Yessler Way and Hillside Avenue.

**Municipal Building** - Hillsdale's municipal building is located off Hillsdale Avenue, by Central Ave., and includes the borough's court and police station.

**Pipelines** - No major oil or gas pipelines traverse Hillsdale. Standard water and natural gas supply pipeline mains are present in the streets of Hillsdale, that service local residences, businesses, and other entities in the Borough.

**Post Office** - Hillsdale has a small U.S. Postal Service building located at the corner of Hillsdale Avenue and Patterson Street.

**Recreational Facilities** - In addition to a pool complex (see below), Hillsdale has a number of sports and other recreational facilities that are open to the public, although in some cases with restrictions. The "Land Use" section (Section "I") of this document contains information concerning recreational infrastructure in Hillsdale.

**Swimming Pools** - Hillsdale boasts an outdoor swimming pool complex. Stonybrook Swim Club, located on Cedar Lane includes an Olympic size pool, a diving pool, an intermediate pool, and a toddler pool. Locker rooms, a concession-run kitchen, and a first aid station are also present. The pools are accessible to residents and non-residents upon payment of membership dues. Other recreational features at this location are described in the "Land Use" section (Section "I") of this document.

**[END OF NARRATIVE PORTION OF THIS SECTION]**

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<sup>1</sup> Wikipedia, [https://en.wikipedia.org/wiki/Woodcliff\\_Lake\\_Reservoir](https://en.wikipedia.org/wiki/Woodcliff_Lake_Reservoir), accessed 8/13/2021.

<sup>2</sup> <https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=e41aa50dd8cd45faba8641b6be6097b1>

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## L. Noise

Version 1: Prepared by Fred N. Rubel, M.S., QEP, Member, Hillsdale Environmental Commission. Last revised, December 27, 2021. Please contact the Hillsdale Environmental Commission to offer any suggested corrections/changes.

**Overview** - We consider excessive and otherwise unwanted sound - - "noise." Noise is a common feature at various times in most communities. Noise can be measured by a sound meter that electronically displays the intensity of sound in a standard unit of measure known as the decibel ("dB"). Decibels are measured on a logarithmic scale that corresponds to the way our ears interpret sound pressure. Noise is generally measured in one of three frequency weighting scales: "dB(A)," "dB(B)," or "dB(C)," coinciding with the filter/scale selected in the sound meter used. Decibel scale readings can correlate with the sensitivity of the human ear to different frequencies of sound.<sup>1</sup>

- dB(A): The "A-weighted" scale ["dB(A)"] is used to evaluate the effect of noise exposure on humans by focusing on those parts of the frequency spectrum where we hear most. The dB(A) scale provides substantial low frequency attenuation (-50 dB at 20 Hz and almost -20 dB at 100 Hz) and some high frequency attenuation (about -10 dB at 20 kHz). The A weighting is adequate for the measurement of background noise, which is low level by nature. It is the most commonly used scale, and covers the full frequency range of 20 Hertz ("Hz") all the way up to 20 kilo Hertz ("kHz"). The human ear is most sensitive to sound frequencies between 500 Hz and 6 kHz while at lower and higher frequencies the human ear is not very sensitive. Because the 'A' weighting adjusts the sound pressure readings to reflect the sensitivity of the human ear, it is most often used for hearing damage risk measurements.
- dB(B): The "B weighting" is used for intermediate levels of sound and is similar to A, except that low frequency attenuation is a lot less extreme, though still significant (-10 dB at 60 Hz). Recent studies show this is the best weighting to use for musical listening purposes. In recent years the B-weighting has been phased out from sound pressure meters (and from the 2003 edition of IEC 61672) and the 'linear' ('unweighted') position has been replaced by the "Z-weighting," which is the same except that the minimum

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frequency band in which the response must be flat (10Hz to 20kHz,  $\pm 1.5$  dB) is specified.<sup>2</sup>

- dB(C): The "C weighting" is similar to B and A as far as the high frequencies are concerned. In the low frequency range it hardly provides attenuation. This weighting is used for high level noise. The C weighting focuses more on the effect of low-frequency sounds on the human ear compared with the A-weighting and is essentially flat or linear between 31.5Hz and 8kHz, the two - 3dB or 'half power' points. The term "Peak Sound Pressure Measurement" is made using the C- frequency weighting.

The following discusses noise as an aspect of environmental quality in Hillsdale.

**L.1. Noise-Sensitive Areas in Community** - As a mostly residential community, nearly all of Hillsdale is sensitive to noise that disrupts a normally tranquil environment.

**L.2. Significant Sources of Noise** - A generic listing of potentially significant sources of noise in Hilldale includes:

**Aircraft** - Although unlikely to exceed locally allowable noise limits (in decibels), the sound of aircraft flights over Hillsdale still can disrupt the community's normally quiet ambiance. In particular, planes making their landing approach to Teterboro Airport can cause unwelcome noise.

**Trains** - Commuter trains operate on rail tracks that run through downtown Hillsdale. Limited freight train runs also takes place on rails in the area. The sound of the train's steel wheels on steel tracks, along with warning whistles from trains can be heard for miles, especially late at night. This does not take place particularly frequently, and is not particularly loud or so frequent as to be found disturbing by many individuals.

**Motor Vehicles** - Some areas of Hillsdale are close to busy traffic, such as the Garden State Parkway, where cars travel at speeds of 65 miles per hour and faster. Depending on proximity, the din of cars traveling over the roadway can be heard, especially during times of otherwise general quiet.

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Also, while potentially very loud, noise made by certain types of motorcycles can be particularly disturbing. This usually is quite transitory and most likely will be heard at a substantial distance from the motorcycle.

**Other Common Sources of Noise Complaints** - Group gatherings (parties), the operation of certain construction equipment, and leaf blowers used by landscapers and residents, particularly at times of expected quiet, are a common source of disturbing noise.

**L.3. Day/Night Permitted Sound Levels** - Subchapter 208 of Hillsdale's code of regulations addresses matters addresses noise. The New Jersey Department of Environmental Protection ("NJDEP") approved Hillsdale's noise ordinance on February 6, 2019.<sup>3</sup> As a result, a Hillsdale employee may act as a Noise Control Officer for purposes of enforcing Hillsdale's noise ordinance, so long as:

- 1) They have received noise enforcement training as specified by the NJDEP at N.J.A.C. 7:29;
- 2) They are currently certified in noise enforcement;
- 3) They are acting within Hillsdale;
- 4) They are authorized to issue a summons.

Complaints concerning apparent violations of Hillsdale's noise ordinance can may be made by contacting the Hillsdale Police Department at:

201-664-4200

Hillsdale's noise ordinance specifies that all construction and demolition activity excluding emergency work, shall not be performed between the hours of 6:00 PM and 7:00 AM on weekdays, or between the hours of 6:00 PM and 9:00 AM on weekends and federal holidays, unless the resulting sound is less than the limits set the tables provided below. At all other times these limits do not apply to construction and demolition activity. Hillsdale's actual noise ordinance should be consulted to determine all requirements.

The following tables are from Subchapter 208 of Hillsdale's code of regulations.

Table L.3.1 - Maximum Permissible Sound Levels When Measured Outdoors at Receiving Property

	Residential Property, or Residential Portion of a Multi-Use Property		Commercial Facility, Public Service Facility, Non-Residential Portion of a Multi-Use Property, or Community Service Facility
<b>Time →</b>	7 AM - 10 PM	10 PM - 7 AM	24 hours
<b>Sound Level* →</b>	65	50	65

\* A-weighted sound level (decibels)

Table L.3.2 - Maximum Permissible Sound Levels When Measured Indoors

	Residential Property, or Residential Portion of a Multi-Use Property		Commercial Facility, or Non-Residential Portion of a Multi-Use Property
<b>Time →</b>	7 AM - 10 PM	10 PM - 7 AM	24 hours
<b>Sound Level* →</b>	55	40	55

\* A-weighted sound level (decibels)

Table L.3.3 - Maximum Permissible Octave Band Sound Pressure

Octave Band (Hz.)*	Residential Property, or Residential Portion of a Multi-Use Property [Outdoors - 7 AM - 10 PM]	Residential Property, or Residential Portion of a Multi-Use Property [Outdoors - 10 PM - 7 AM]	Residential Property, or Residential Portion of a Multi-Use Property [Indoors - 7 AM - 10 PM]	Residential Property, or Residential Portion of a Multi-Use Property [Indoors - 10 PM - 7 AM]	Commercial Facility, or Non-Residential Portion of a Multi-Use Property [Outdoors - 24 hours]	Commercial Facility, or Non-Residential Portion of a Multi-Use Property [Indoors - 24 hours]
31.5	96	86	86	76	96	86
63	82	71	72	61	82	72
125	74	61	64	51	74	64
250	67	53	57	43	67	57
500	63	48	53	38	63	53
1,000	60	45	50	35	60	50
2,000	57	42	47	32	57	47
4,000	55	40	45	30	55	45
8,000	53	38	43	28	53	43

\* Center Frequency

Table L.3.4 - Total Sound Levels Within a Residential Property

		Maximum Permissible Increase
Week Nights →	10 PM - 7 AM	3 dB(C)
Weekend Nights →	11 PM - 7 AM	3 dB(C)
All Other Times →		6 dB(C)

\* dB(C) = C weighted sound level scale (decibels)

**Aircraft Noise** - Teterboro Airport and the Federal Aviation Administration have established maximum noise levels for air traffic at Teterboro Airport. Runway 1/19 is allotted the highest maximum noise level - - 95 dB (A), at all times. The maximum noise levels for Runway 6/24 is 80 dB (A) between 10 PM and 7 AM, and 90 dB (A) between 7 AM and 10 PM. Where notice is made, Teterboro highly recommends use of Runway 19 to reduce the risk of exceeding the 80 dB(A) limit and to avoid noise sensitive communities.<sup>4</sup> Six (6) Remote Monitoring Sites (RMS) measuring noise associated with Teterboro Airport aircraft (see Table L.3.5, below). Noise complaints can be filed online at:

<https://www.planenoise.com/panynj/daPRAbr9/qs114wbt.php>

All aircraft noise complaints are compiled in a database, verified for accuracy, analyzed, and mapped for reporting. Noise complaint reports are provided to the FAA on a recurring basis to notify them of areas of noise concern. Exceeding Teterboro's mandatory noise limits by 1 dB (A) earns an aircraft a violation; three violations in two years bans the offender from the airport.

Table L.3.5 - Locations of Teterboro Airport Noise Monitors

Designation	Municipality	Location
RMS 1	Carlstadt	1.9 nautical miles ("NM") from the normal brake release point at Runway 24 threshold.
RMS 2	Hasbrouck Heights	0.7 NM west of the western boundary of the airport.
RMS 3	Hackensack	2.5 NM from the normal brake release point at Runway 01 threshold.
RMS 4	Hackensack	1.8 NM north of the northern boundary of the airport.
RMS 5	Bogota	2.8 NM from normal brake release point at the Runway 06 threshold.
RMS 6	Moonachie	0.4 NM east of Runway 01/19.

**L.4. Decibel Equivalents of Typical Sounds** - Table L.4 illustrates the decibel equivalent of various sounds.

Table L.4. - Decibel Equivalent of Various Sounds<sup>5</sup>

Sound	Average decibels (dB)
Leaves rustling, soft music, whisper	30
Average home noise	40
Normal conversation, background music	60
Office noise, inside car at 60 mph	70
Vacuum cleaner, average radio	75
Heavy traffic, window air conditioner, noisy restaurant, power lawn mower	80-89*
Subway, shouted conversation	90-95
Boom box, ATV, motorcycle	96-100
School dance	101-105
Chainsaw, leaf blower, snowmobile	106-115
Sports crowd, rock concert, loud symphony	120-129
Stock car races	130
Gun shot, siren at 100 feet	140

\* Sounds above 85 dB can be harmful.

**[END OF NARRATIVE PORTION OF THIS SECTION]**

<sup>1</sup> <https://pulsarinstruments.com/en/post/understanding-decibels-decibel-scale-and-noise-measurement-units> accessed 12/17/2021.

<sup>2</sup> <https://www.doctorproaudio.com/content.php?2279-frequency-weightings-abc> , accessed 12/17/2021.

<sup>3</sup> "NJDEP Master List of Submitted Local Municipal Noise Ordinances," September 7, 2021.

<sup>4</sup> <https://nbaa.org/aircraft-operations/airports/teb/noise-abatement-at-teterboro-critical-during-pandemic/> , accessed 12/16/2021.

<sup>5</sup> [Harmful Noise Levels | Michigan Medicine](#), accessed 12/18/2021.

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## M. Contaminated Sites and Sources of Pollution

Version 1: Prepared by Fred N. Rubel, M.S., QEP, Member, Hillsdale Environmental Commission. Last revised, January 28, 2022. Please contact the Hillsdale Environmental Commission to offer any suggested corrections/changes.

**Overview** - Many communities have locations that have contaminated soil and/or groundwater requiring cleanup ("remediation") to reduce or eliminate the human health or environmental hazards that the contamination poses. This section of this document presents information concerning contaminated and potentially contaminated sites, and possible sources of pollution in Hillsdale.

**M.1. Superfund or Other Contaminated Sites** - There are no Federally-designated Superfund sites present within or adjoining Hillsdale's borders.

Four (4) locations in Hillsdale are listed by the NJDEP Site Remediation Program as "Active Sites with Confirmed Contamination."<sup>1</sup> These are listed in Table M.1, and further described below.

Table M.1 - Active Contaminated Sites in Hillsdale (As of January 2022)

Site ID	PI No.	PI Name	Address	Home Owner
529049	664213	216 Saddlewood Drive	216 Saddlewood Drive	Yes
51001	015123	Alexander Cleaners, Inc.	137 Broadway	No
687694	963870	Hillsdale Ave. & Winkler Way	Hillsdale Ave. & Winkler Way	No
11865	003236	Shell Service Station	60 Broadway	No

PI = Program Interest

**Site ID 529049: 216 Saddlewood Drive** - This site is likely a residence at which an underground heating oil storage tank leaked at some time in the past, causing contamination of soil and perhaps groundwater.

**Site ID 51001: Alexander Cleaners** - A dry-cleaning establishment existed at 137 Broadway, at the corner of Broadway and Orchard Street from roughly the late 1960's until 1996.<sup>2</sup> The property at this site is approximately 60' x 140' (0.2 acre) in size, and is surrounded by paved parking on three sides, and has been determined to be contaminated.



Former Building at Alexander Cleaners Site (Photo: Fred Rubel, 2018)

The primary contaminant associated with this site is tetrachloroethylene, also known as perchloroethylene ("PCE"). The PCE at this site is attributed to the dry-cleaning operations that formerly operated on this property. This chlorinated 'dry-cleaning' solvent has been detected in both soil and groundwater at and near the site. At less than 0.2 acres, the former Alexander Cleaners site is quite small, with an even smaller, discrete (although deep) area of heavily PCE contaminated soil within the footprint of the former building.

In the absence of adequate remedial action by a responsible party, the NJDEP initiated measures through state of New Jersey "Spill Act" funding. This began with environmental testing, and installation of a subsurface depressurization system/soil vapor extraction system in the basement of the building in 2002, which was augmented more than nineteen (19) years ago in 2003. For many years the

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subsurface depressurization system/soil vapor extraction system was maintained by NJDEP to mitigate indoor air quality concerns when the building was still occupied and being used, although for other-than dry cleaning business purposes. Basement walls were sealed in 2004 to reduce vapor intrusion into the building.

Based on the Remedial Investigation findings, and results from prior investigations, free phase PCE contamination is believed present beneath the western part of the building. Significantly elevated concentrations of PCE were confirmed to be present in soil at a concentration as high as 510,000 milligrams per kilogram (mg/kg), at a depth of 8-8.5 feet beneath the basement slab. A Remedial Action Plan was put forth in 2017 to address the rather well-defined location of highly contaminated source material (PCE contaminated soil) within the former basement at the site. In 2019, the building was demolished as a further step in the state's (NJDEP) funded remediation of the contamination of the site (see photo, below). At the urging of the Environmental Commission and the Borough, pending actual remediation, a temporary geomembrane cover was placed over the footprint of the building to reduce water infiltration into the ground due to precipitation that had the potential to increase the spread of PCE beyond the site.

The contaminated soils below the former building are believed to be a continuing source of contamination impacting groundwater and causing vapor intrusion within the building that formerly existed, as well as one and possibly more nearby buildings. Delineation of soil contamination to the south remained incomplete, and was due to be completed during 2021. A soil gas investigation in the right-of-way along Broadway to the East/Southeast of the site, installation and sampling of additional deep and shallow monitoring wells (well pairs) [south of the bank building + northwestern area of Veterans Park + installation of a sentinel well on north bank of Pascack Brook + semi-annual groundwater monitoring on and off-site remain to be completed. A September 2020 (draft) report prepared for the NJDEP by its consultant, H2M, reported the results of sampling conducted in April of 2020, which indicated that the concentration of PCE in deep well 7 (MW-7D) was the same as that in shallow well 7 (MW-7). The inference was that PCE contamination may be entering the deeper aquifer.



*Geomembrane Covering Former Alexander Cleaners Site (Photo: Fred Rubel, 2020)*

A Bank of America building is located immediately south and west of the Alexander Cleaners site. It was reported that PCE was detected in near surface soils there during shallow utility excavations that took place in 2020 (see photo, below).

A past search by NJDEP's consultant indicates that there are twelve (12) private wells potentially within a "1,000-foot downgradient and 250 feet upgradient" of the "potentially impacted focus area."

In 1994, PCE was detected in groundwater at a Shell gas station located at 145 Broadway (by Orchard Street). This site is across the street and north of the Alexander Cleaners site.



Excavation at Adjoining Bank of America Property (Photo: Fred Rubel, Oct. 2020)

Documents relating to the contamination at the Alexander Cleaners site are available for review at the office of the Borough Administrator, at 380 Hillsdale Avenue, Hillsdale, NJ 07642; 201-666-4800 x 1504. Information can also be obtained, and comments can be made regarding this site by contacting: Mark Herzberg, NJDEP Office of Community Relations, 401 East State Street, PO Box 420, Trenton, NJ 08625-0420; [mark.herzberg@dep.nj.gov](mailto:mark.herzberg@dep.nj.gov) (609) 633-1369.

**Site ID 687694: Hillsdale Ave. & Winkler Way** - - During removal of an underground storage tank at Bergen County Garden Center (1 Winkler Way), across the tracks, to the west of the Alexander Cleaners site, PCE contamination was identified during environmental sampling. It was reported by the NJDEP during a briefing of the Borough Council regarding the Alexander Cleaners site that the source of PCE contamination at this location had not yet been determined, and that 'the site

remediation managers for the Bergen County Garden Center and the Alexander Cleaners site, were trying to decide between them the source of that PCE contamination.'

**Site ID 11865: Shell Service Station** - - Located at 60 Broadway (by Harrington Street), this site is indicated to have three 10,000 gallon fuel storage tanks.<sup>3</sup> Information regarding contamination at this site was not readily available.

**Radon (Naturally Occurring)** - Radon is a naturally occurring radioactive gas that is commonly released from geological formations underground due to the natural decay of small amounts of uranium, thorium, or radium in rocks, soil, and groundwater.<sup>4</sup> Based on a national residential radon survey completed in 1991, the average indoor radon level is about 1.3 picocuries per liter of air (pCi/L) in the United States. The average outdoor level is about 0.4 pCi/L.<sup>5</sup> People can be exposed to excessive radon primarily by breathing radon in air that comes through cracks and gaps in buildings and homes. Exposure to excessive concentrations of radon is a significant cause of lung cancer. The risk of cancer due to radon for smokers is much greater than for nonsmokers. For a nonsmoker who has an average radon exposure of 4.0 pCi/L over their entire lifetime, the risk is 1 in 500 of developing lung cancer due to radon. The risk for a smoker in the same situation is 1 in 35 (in addition to the lung cancer risk from smoking - - see Table M.2, below).

Table M.2 - Radon Risk Comparison for Smokers and Nonsmokers<sup>6</sup>

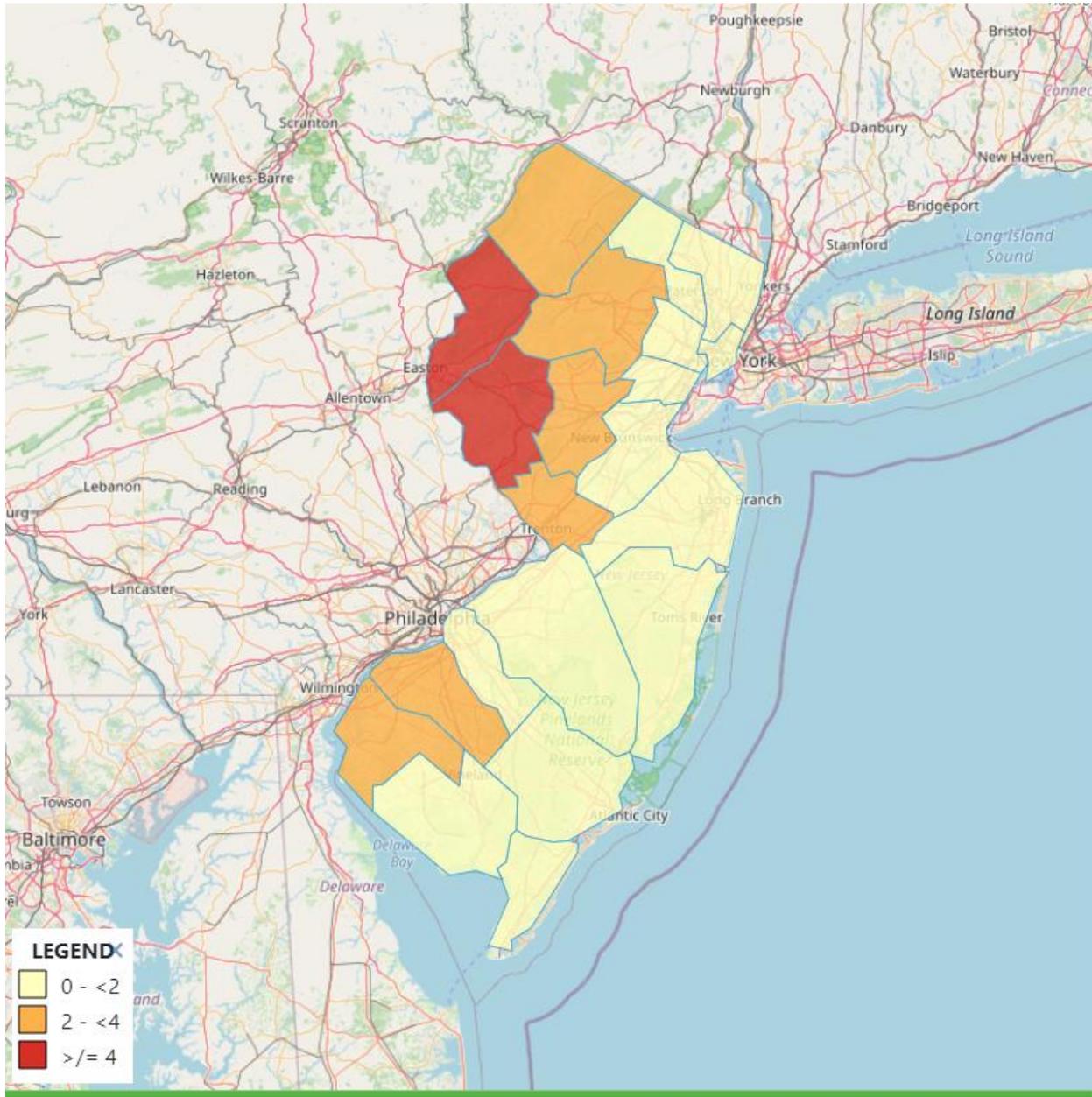
Radon Level (in pCi/L)	Odds for smokers of developing lung cancer if exposed to this level over a lifetime.*	Odds for nonsmokers of developing lung cancer if exposed to this level over a lifetime.
20	1 in 7	1 in 125
8	1 in 18	1 in 333
4	1 in 35	1 in 500
2	1 in 67	1 in 1000
0.04**	1 in 333	1 in several thousand

\*This is in addition to the risk of lung cancer from smoking itself.

\*\*Average outdoor radon concentration.

Hillsdale is not within a geological region that typically experiences high indoor radon concentrations (see Figure M.1, below).

Figure M.1 - Classification of Counties in NJ by Typical Radon Concentration



RADON | RADON TESTS FROM STATES | MEAN PRE-MITIGATION RADON MEASUREMENT IN TESTED BUILDINGS | NEW JERSEY | 2019



Explore more data at [ephtracking.cdc.gov/DataExplorer](http://ephtracking.cdc.gov/DataExplorer)

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As in other geographic locations, individual buildings within Hillsdale may produce radon concentrations that exceed the U.S. EPA recommended limit of 4 pCi/L, and may need to have controls installed to reduce the concentration of radon within the built environment.

National Radon Program Services at Kansas State University offers discounted test kits for purchase online: <https://sosradon.org/test-kits>

Individuals may complete test kit request forms electronically, print them out, and mail or fax them in.<sup>7</sup> Radon test kits can also be found online, and in home improvement stores. It is important to follow the directions on the packaging for the proper placement and recovery of the device and where to send the device after the test exposure to obtain valid radon information. Radon testing has become a standard aspect of pre-home purchase due diligence. The NJDEP can be contacted to identify sources for valid radon testing kits and testing firms: <https://www.njradon.org/>

**M.2. Incinerators/Resource Recovery Facilities** - There are no waste incinerators or resource recovery facilities located in Hillsdale.

**M.3. Hazardous Substance Storage and Use** - It is not apparent that any facilities within Hillsdale are large users/have substantial storage of hazardous substances, such as might be the case for a chemical manufacturer. The Bergen County Health Department, which would receive annual "Community Right-to-Know" reports from any facilities in Hillsdale that store substantial quantities of hazardous substances, does not provide a community-wide list of reporting facilities. Facility-specific requests can be made to be determine if individual facilities submit such reports.

**M.4. Leaking Underground Storage Tanks** - As in most communities, at various times underground fuel storage tanks in Hillsdale have leaked product and contaminated soil and perhaps groundwater. Section M.1 lists any locations where

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contamination, including contamination due to a leaking underground storage tank has been identified and has not yet been adequately resolved.

**M.5. Groundwater Contamination Areas** - Alexander Cleaners, a former dry cleaning business at 137 Broadway, at the corner of Orchard Street, was discovered to have perchloroethylene contaminated soil and groundwater beneath and adjacent to its building, and is the subject of remediation being funded by the NJDEP. This site is described in detail above in Section M.1.

Remaining groundwater contamination that has not been remediated may result in the establishment of a groundwater quality Classification Exception Area ("CEA"). A CEA is a formally designated unresolved contamination of groundwater within a localized area due to contamination from a site. The area and depth of ground water pollution will be determined based on an investigation of groundwater contamination, and a 'fate and transport' modeling of the contaminants based on local conditions. The NJDEP will authorize and establish a ground water CEA as part of a remedial action where groundwater continues not to meet NJDEP groundwater quality standards. One (1) down gradient sentinel well is installed to monitor the downgradient direction of the CEA extent and ensure that the plume does not move past known areas. Obtaining a CEA involves first defining the extent of the groundwater contamination or plume. This is typically completed with a Geoprobe unit and the installation of temporary well points. The temporary wells points are followed up with permanent wells that are sampled quarterly. A minimum of eight (8) rounds of quarterly groundwater samples will usually need to be collected over two (2) years to show continuing degradation of the groundwater contaminants. Table M.5 below, lists CEA's that exist or have previously been established in Hillsdale.

Table M.5 - Locations with a Classification Exception Area (As of January 2022)

PI No.	PI Name	Address	Established	Closed/Lifted
003236	Shell Service Station	60 Broadway	4/23/02	
005220	SMS Oil, LLC	145 Broadway	3/17/97	3/1/40
G000042605	319 Knickerbocker Ave.*	(Same)	2/26/19	

PI = Program Interest \* M&M Automotive at (or previously at) this location.

**M.6. Deed Notice (Due to Hazardous Substance Contamination) Areas** - A deed notice is an administrative control of contamination, intended to warn of existed contamination of property that cannot reasonably be remediated for reasons of inaccessibility, or other reason, so that it is not inadvertently disturbed. Table M.6 below, lists deed notices that exist or have previously been established in Hillsdale.

Table M.6 - Locations with a Deed Notice (As of January 2022)

PI No.	PI Name	Address	Activity Number	Entire Site Restricted
G000042605	319 Knickerbocker Ave.*	(Same)	RAP180001	Yes

PI = Program Interest \* M&M Automotive at (or previously at) this location.

**M.7. Gas Stations, Auto Body Shops** - Gasoline stations store and transfer large quantities of gasoline and diesel fuel below ground, and due to past and ongoing leakage that may occur, are common sources of contamination of soil and groundwater. The following four (4) gasoline stations are located in Hillsdale:

1. Colonial, at 333 Kinderkamack Ave., by St. Nicholas Avenue;
2. Mobil at 318 Broadway, by Clinton Avenue;
3. Riggins at 60 Broadway, between Washington Avenue and Harrington Street (see site ID 11865, above);
4. Shell at 145 Broadway, by Orchard Street.

Autobody shops generate waste oil, and use paints and solvents, possibly including chlorinated solvents that are long-lived if released into the environment, in their operations. Consequently, as a result of past and ongoing activities, auto body shop operations may be a source of contamination of soil and groundwater. Some gasoline stations listed above provide car maintenance and may also engage in body shop repair. The following five (5) auto body/repair shops are located in Hillsdale:

1. Falasca's Friendly Service at 318 Broadway (Off Clinton Avenue);
2. F&S Friendly Service at 333 Kinderkamack Ave. (by St. Nicholas Avenue);
3. Hillsdale Shell Auto Service, at 145 Broadway (by Orchard Street);
4. Kal's Auto Service, at 30 Lake Street (Patterson Street continuation);
5. Pascack Autobody, Inc. at 36 Orchard Street (off Patterson Street).

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**M.8. Dry Cleaners** - Where dry cleaning of clothes takes place on site, substances, possibly including chlorinated solvents like perchloroethylene - - that are long-lived if released into the environment have commonly been used. Consequently, past and perhaps ongoing activities may result in dry cleaners being a source of contamination of soil and groundwater at their location. The following three (3) active drycleaners are located in Hillsdale:

1. Chinta Cleaners, at 132 Broadway (by Park Avenue);
2. Elite Cleaners, at 422 Hillsdale Avenue (by Winkler Way);
3. Hillsdale Cleaners and Shirt Laundry, at 160 Broadway (by Cross Street).

The former dry cleaning business at 137 Broadway, at the corner of Orchard Street, was discovered to have perchloroethylene contaminated soil and groundwater beneath and adjacent to its building, and is the subject of remediation being funded by the NJDEP ("Alexander Cleaners"). Information regarding this site is described in Section M.1., above.

**[END OF NARRATIVE PORTION OF THIS SECTION]**

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<sup>1</sup> NJDEP "Data Miner," accessed 1/10/2022.

<https://www13.state.nj.us/DataMiner/Search/SearchByCategory?isExternal=y&getCategory=y&catName=Site+Remediation>

<sup>2</sup> Proposed Plan to address contamination at the former Alexander Cleaners Site at 137 Broadway, Hillsdale Borough, Bergen County, "NJDEP Public Notice & Comment Period," undated.

<sup>3</sup> [UST Finder \(arcgis.com\)](https://www.arcgis.com), accessed 1/13/2022.

<sup>4</sup> <https://www.epa.gov/radon/what-radon> accessed 1/13/2022.

<sup>5</sup> <https://www.epa.gov/radon/what-average-level-radon-found-homes-us> accessed 1/13/2022.

<sup>6</sup> USEPA Physicians Guide, 1993.

<sup>7</sup> <https://www.epa.gov/radon/find-radon-test-kit-or-measurement-and-mitigation-professional> accessed 1/13/2022.

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## N. Critical Environmental Areas

Version 1: Prepared by Fred N. Rubel, M.S., QEP, Member, Hillsdale Environmental Commission. Last updated, March 18, 2022. Please contact the Hillsdale Environmental Commission to offer any suggested corrections/changes.

**Overview** - Though small in geographic area, a number of locations in Hillsdale may be considered critical environmental areas, and are highlighted in this Section of Hillsdale's Environmental Resource Inventory.

**N.1 Wetlands and Wetland Buffers** - Several small streams run through Hillsdale, resulting in about 101 acres<sup>1</sup> of freshwater wetland habitat being present. Of note with respect to wetlands is the nine (9) undeveloped acres<sup>2</sup> ("Tandy Woods") adjoining the Tandy-Allen residential development north of Hillsdale Avenue. It is hoped that in time, additional information on this will be developed and added to this Section of Hillsdale's Environmental Resource Inventory.

Ephemeral wetlands are unique and valuable habitats. They are characterized by temporary, but recurring ponding of water, which are termed "vernal pools." The NJDEP defines the vernal pool habitat as containing standing water for at least two continuous months between March and September in a year of normal rainfall.

Two (2) locations have been identified in Hillsdale as potentially containing vernal pools: the Tandy Woods near Pascack Road, off Hillsdale Avenue mentioned above, and a portion of Wood Dale Park, off Lincoln Ave., by Ruckman Road near Piermont Avenue. These locations are highlighted in Section H of this document ("Vegetation and Wildlife").

**N.2 Steep Slopes** - Where steep slopes are present concern exists for excessive erosion, rapid stormwater runoff, and possible physical instability. Hillsdale is a substantially built-out community, so that significant development in locations with steep slopes is not likely to arise very often. Hillsdale's Master Plan identifies

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areas in the Borough with slopes of 20 percent or more in a map entitled "Steep Slopes Map." Section E of this document ("Topography") contains this map as well as additional information regarding areas in Hillsdale that exhibit steep slopes.

**N.3 Floodplains, Floodways, Riparian Buffers** - The Federal Emergency Management Agency (FEMA), creates and periodically updates maps that identify properties within various flood zones. A generalized flood map for Hillsdale is included in Section G ("Hydrology") of this document, along with an August 2019 FEMA letter announcing the issue of new or revised Flood Insurance Rate Map panels for Hillsdale.

A number of formerly residential or undeveloped properties in Hillsdale, especially along the Pascack Brook, have been acquired by the Borough and set aside as especially flood prone properties, and have therefore become part of the natural floodway.

With respect to riparian buffers, these are lands and vegetation within and adjacent to regulated waters, not including man-made lagoons, stormwater management basins, oceanfront barrier islands, or spits or peninsulas along the Atlantic Ocean. Riparian buffers are undeveloped areas adjacent to streams that are either within the 100-year floodplain, contain hydric soils, contain streamside wetlands and associated transition areas, or are within a 150-foot or 300-foot wildlife passage corridor on both sides of a stream. Riparian buffers are important natural filters of stormwater runoff that protect aquatic environments from excessive sedimentation, pollutants, and erosion. They supply shelter and food for many aquatic animals and also provide shade which is an important part of stream temperature regulation.

The streams within the Musquapsink Brook Watershed are designated as "C1." New Jersey regulations therefore require a 300 foot buffer on either side of the waterway. Approximately 1,444 acres of land are designated as riparian area in the Musquapsink Brook Watershed using the 300 foot buffer rule. A decrease of riparian areas in the Musquapsink Brook Watershed due to urbanization has

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contributed to poor surface water quality conditions and increased streambank erosion.<sup>3</sup> Section G of this document ("Hydrology") may contain additional details about this.

**N.4 Aquifer Recharge Areas** - As is much of Bergen County, Hillsdale is situated above the Newark Basin Aquifer.<sup>4</sup> No public community water supply wells are present in Hillsdale, however. Section G of this document ("Hydrology") contains additional details concerning this topic.

**N.5 Prime Agricultural Soils** - Prime agricultural land is that portion of agricultural lands that consists of better soil quality, growing season, and soil moisture suitable for production of food, forage, and fiber with a sustainable yield.<sup>5</sup> Prime agricultural land generally has greater water permeability and, due to gentler slopes, is less prone to erosion. It provides economically viable options to farmers by producing higher yields with minimal management and proper farming methods. Prime Farmlands include all those soils in Land Capability Class I and selected soils from Land Capability Class II.<sup>6</sup> Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops and is also available for these uses. It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed according to acceptable farming methods. Prime Farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

Demarest Farms is an active farm in Hillsdale that primarily grows peaches and apples. Through a State of New Jersey farm-land preservation program, the farm is deed-restricted to prevent development of the property for use that is not agricultural in nature. Soils at the farm have not been specifically designated or recognized as being 'prime agricultural soils.'

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Beyond this, as a small, extensively built-out community, no areas of undeveloped lands are present that have been recognized as or otherwise distinguished as prime agricultural soils.

**N.6 Soil Limitation Areas** - Locations may be classified as presenting use limitations due to the physical characteristics of soil that are unsuitable for agriculture, building, drainage, recreational, or other purposes. Although locations in Hillsdale may contain soils with various limitations, at this time there are no specific areas in Hillsdale known to be designated as 'soil limitation areas.'

**N.7 Endangered/Threatened Species Habitat** - Although no prime habitat has been identified in Hillsdale for wildlife officially classified as endangered or threatened wildlife, this does not preclude such species from being present at times. A number of species that are afforded protective status have been identified in the area around Hillsdale (see Table H.6 in Section H of this document, entitled "Vegetation and Wildlife"), which means that a presence in Hillsdale may be possible. Section H of this document ("Vegetation and Wildlife") contains additional details about this.

**N.8 Trout Associated Waters** - Trout-associated waters are not present in Hillsdale, although Pascack Brook is seasonally stocked with trout by the NJDEP for local recreational fishing. Section G of this document ("Hydrology") contains additional details about this.

**N.9 Water Supply: Surface and Groundwater** - Suez Water in North America, is the water purveyor serving Hillsdale, via surface water. The Woodcliff Lake reservoir is primarily in Woodcliff Lake, but the southern end of the reservoir extends into Hillsdale near Hillsdale's northwest border. The Reservoir is owned and operated by Suez Water of North America. The Hillsdale portion of the reservoir is located north of Church Road and west of Reservoir Road. Section G of this document ("Hydrology") contains additional details about this.

Approximately 30 entities rely on individual wells for their water supply. This includes properties located by: Beechwood Drive, Brook Place, Buff Lane, Center

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Drive, Coles Crossing, Craig Road, Douglas Avenue, Glen Hook Road, Glendale Drive, Hazelwood Avenue, Homestead Avenue, Horizon Terrace, Maple Avenue, Melville Road, Park Avenue, Riverdale Avenue, Sierra Court, Steven Avenue, Sycamore Avenue, and Wierimus Road.<sup>7</sup> No public community water supply wells are present. A single, small Tier 1 Well Head Protection Area designated by the State, is located within the Borough. This area is limited to vacant, wooded lands immediately below the Woodcliff Lake Dam which are owned by Suez of North America, and does not have the potential for development.<sup>8</sup> Section G of this document (“Hydrology”) contains additional details about this.

**[END OF NARRATIVE PORTION OF THIS SECTION]**

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<sup>1</sup> <https://www.nifloodmapper.org/>, accessed 1/20/2022.

<sup>2</sup> Minutes of the October 7, 2014 meeting of the Hillsdale Borough Council, page 19.

<sup>3</sup> “Musquapsink Brook Watershed Restoration and Protection Plan,” December 11, 2012, Rutgers New Jersey Agricultural Experimentation Station, page 23.

<sup>4</sup> <https://www.state.nj.us/dep/njgs/pricelst/ofmap/ofm24.pdf>

<sup>5</sup> State of the Raritan Report, Sustainable Raritan River Initiative, Rutgers, The State University of New Jersey, Volume 1, December 2016, page 36.

<sup>6</sup> [https://www.nrcs.usda.gov/wps/portal/nrcs/detail/nj/soils/?cid=nrcs141p2\\_018875](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/nj/soils/?cid=nrcs141p2_018875) accessed 1/16/2022.

<sup>7</sup> “2003 Master Plan, Borough of Hillsdale,” by C.P. Statile, P.A., February 2003, Revised December 2003, page U4.

<sup>8</sup> “Master Plan Amendment, Borough of Hillsdale, Amendment to Utility Plan of Master Plan,” by C.R. Statile, P.A., June 2008, Adopted July 2, 2008, November 17, 2005 “Stormwater Management Plan, page 19.

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~ End of Part 2 of 2 ~

Environmental Resource Inventory

Hillsdale, New Jersey

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