Appendix III/IV.E
Biological Resources

III/IV.E-1: Biological Resources Tables

A. FJORD TRAIL NORTH CORRIDOR

Table III.E-1
Plant Species Identified within the Fjord Trail North Corridor

Common Name	Scientific Name
White baneberry	*Acataea pachypoda*
Box elder	*Acer negundo*
Japanese maple	*Acer palmatum*
Norway maple	*Acer platanoides*
Red maple	*Acer rubrum*
Silver maple	*Acer saccharinum*
Sugar maple	*Acer saccharum*
Common yarrow	*Achillea millefolium*
Harvestlice	*Agrimonia parviflora*
Tree of heaven	*Ailanthus altissima*
Garlic mustard	*Alliaria petiolata*
Onion	*Allium* sp.
Pigweed	*Amaranthus* sp.
Ragweed	*Ambrosia* sp.
Common serviceberry	*Amelanchier arborea*
American hog-peanut	*Amphicarpea bracteata*
Big bluestem	*Andropogon gerardii*
Sweet vernal grass	*Anthoxanthum ordoratum*
Dogbane	*Apocynum* sp.
Columbine	*Aquilegia* sp.
Common burdock	*Arctium minus*
Jack-in-the-pulpit	*Arisaema triphyllum*
Common mugwort	*Artemesia vulgaris*
Swamp milkweed	*Asclepias incarnata*
Milkweed	*Asclepias* sp.
Common milkweed	*Asclepias syriaca*
Spleenwort	*Asplenium* sp.
Common wintercress	*Barbarea vulgaris*
Japanese barberry	*Berberis thunbergii*
Black birch	*Betula lenta*
River birch	*Betula nigra*
Gray birch	*Betula populifolia*
Brome	*Bromus* sp.
Hedge bindweed	*Calystegia sepium*
Bittercress	*Cardamine* sp.
Fringed sedge	*Carex crinita*
Davis's sedge	*Carex davisii*
Bladder sedge	*Carex intumescens*
Sedge	*Carex* sp.
Fox sedge	*Carex vulpinoidea*

Table III.E-1
Plant Species Identified within the Fjord Trail North Corridor

Common Name	Scientific Name
American hornbeam	*Carpinus caroliniana*
Pignut hickory	*Carya glabra*
Shagbark hickory	*Carya ovata*
Hickory	*Carya* sp.
Northern catalpa	*Catalpa speciosa*
Asiatic bittersweet	*Celastrus orbiculatus*
Hackberry	*Celtis occidentalis*
Spotted knapweed	*Centaurea stoebe*
Field mouse-ear chickweed	*Cerastium arvense*
Greater celandine	*Chelidonium majus*
Chicory	*Cichorium intybus*
Canada thistle	*Cirsium arvense*
Thistle	*Cirsium* sp.
Bull thistle	*Cirsium vulgare*
Asiatic dayflower	*Commelina communis*
Field bindweed	*Convolvulus arvensis*
Silky dogwood	*Cornus amomum*
Flowering dogwood	*Cornus florida*
Red osier dogwood	*Cornus sericea*
Hawthorn	*Crataegus* sp.
Orchard grass	*Dactylis glomerata*
Poverty grass	*Danthonia spicata*
Queen Anne's lace	*Daucus carota*
Deertongue	*Dichanthelium clandestinum*
Crabgrass	*Digitaria sanguinalis*
Common teasel	*Dipsacus fullonum*
Marginal wood fern	*Dryopteris marginalis*
Wood fern	*Dryopteris* sp.
Autumn olive	*Elaeagnus umbellata*
Horsetail	*Equisetum* sp.
Yellow trout-lily	*Erythronium rostratum*
Winged Euonymus	*Euonymus alatus*
Boneset	*Eupatorium perfoliatum*
Late flowering thoroughwort	*Eupatorium serotinum*
Leafy spurge	*Euphorbia esula*
Joe pye weed	*Eutrochium* sp.
American beech	*Fagus grandifolia*
Japanese knotweed	*Fallopia japonica*
Annual rye	*Festuca perennis*
Virginia strawberry	*Fragaria virginiana*
White ash	*Fraxinus americana*
Green ash	*Fraxinus pennsylvanica*
Ash	*Fraxinus* sp.
Stickywilly	*Galium aparine*
White bedstraw	*Galium mollugo*
Herb robert	*Geranium robertianum*
Geranium	*Geranium* sp.
Honey locust	*Gleditsia triacanthos*
American witchhazel	*Hamamelis virginiana*
Dame's rocket	*Hesperis matronalis*
Hawkweed	*Hieracium* sp.

Table III.E-1
Plant Species Identified within the Fjord Trail North Corridor

Common Name	Scientific Name
Common velvet grass	*Holcus lanatus*
Hosta	*Hosta* sp.
Wild hydrangea	*Hydrangea arborescens*
Hydrangea	*Hydrangea* sp.
Holly	*Ilex* sp.
Spotted jewelweed	*Impatiens capensis*
Impatiens	*Impatiens* sp.
Blue flag	*Iris versicolor*
Black walnut	*Juglans nigra*
Soft rush	*Juncus effusus*
Path rush	*Juncus tenuis*
Eastern red cedar	*Juniperus virginiana*
Common henbit	*Lamium amplexicaule*
Purple deadnettle	*Lamium purpereum*
American larch	*Larix laricina*
Privet	*Ligustrum* sp.
Lily	*Lilium* sp.
Spice bush	*Lindera benzoin*
Tulip tree	*Liriodendron tulipifera*
Japanese honeysuckle	*Lonicera japonica*
Morrow's honeysuckle	*Lonicera morrowii*
Tartarian honeysuckle	*Lonicera tatarica*
Garden bird's-foot-trefoil	*Lotus corniculatus*
Clubmoss	*Lycopodium* sp.
Creeping Jenny	*Lysimacchia nummularia*
Purple loosestrife	*Lythrum salicaria*
Canada mayflower	*Maianthemum canadense*
Feathery false Solomon's seal	*Maianthemum racemosum*
Apple	*Malus* sp.
Yellow sweet-clover	*Melilotus officinalis*
Common moonseed	*Menispermum canadense*
Mint	*Mentha* sp.
Japanese stiltgrass	*Microstegium vimineum*
Mulberry	*Morus* sp.
Daffodil	*Narcissus* sp.
Sensitive fern	*Onoclea sensibilis*
Cinnamon fern	*Osmunda cinnamomea*
Interrupted fern	*Osmunda claytoniana*
Eastern hop-hornbeam	*Ostrya virginiana*
Upright yellow wood-sorrel	*Oxalis stricta*
Switchgrass	*Panicum virgatum*
New York fern	*Parathelypteris noveboracensis*
Virginia creeper	*Parthenocissus quinquefolia*
Princess tree	*Paulownia tomentosa*
Spotted lady's thumb	*Persicaria maculosa*
Smartweed	*Persicaria* sp.
Jumpseed	*Persicaria virginiana*
Reed canary grass	*Phalaris arundinacea*
Timothy	*Phleum pratense*
Common reed	*Phragmites australis*
Norway spruce	*Picea abies*

Table III.E-1
Plant Species Identified within the Fjord Trail North Corridor

Common Name	Scientific Name
Blue spruce	*Picea pungens*
Canadian clearweed	*Pilea pumila*
Eastern white pine	*Pinus strobus*
English plantain	*Plantago lanceolata*
Common plantain	*Plantago major*
Blackseed plantain	*Plantago rugelii*
American sycamore	*Platanus occidentalis*
Kentucky bluegrass	*Poa pratensis*
Bluegrass	*Poa* sp.
Christmas fern	*Polystichum acrostichoides*
Pickerelweed	*Pontederia cordata*
Eastern cottonwood	*Populus deltoides*
Common cinquefoil	*Potentilla simplex*
Common selfheal	*Prunella vulgaris*
Sweet cherry	*Prunus avium*
Fire cherry	*Prunus pensylvanica*
Black cherry	*Prunus serotina*
Cherry	*Prunus* sp.
White oak	*Quercus alba*
Scarlet oak	*Quercus coccinea*
Chestnut oak	*Quercus montana*
Pin oak	*Quercus palustris*
Red oak	*Quercus rubra*
Black oak	*Quercus velutina*
Littleleaf buttercup	*Ranunculus abortivus*
Tall buttercup	*Ranunculus acris*
Buttercup	*Ranunculus* sp.
Common buckthorn	*Rhamnus cathartica*
Rhododendron	*Rhododendron* sp.
Staghorn sumac	*Rhus typhina*
Black locust	*Robinia pseudoacacia*
Multiflora rose	*Rosa multiflora*
Allegheny blackberry	*Rubus allegheniensis*
Pennsylvania blackberry	*Rubus pensilvanicus*
Wineberry	*Rubus phoenicolasius*
Curly dock	*Rumex crispus*
Common arrowhead	*Sagittaria latifolia*
Pussy willow	*Salix discolor*
Black willow	*Salix nigra*
Willow	*Salix* sp.
Bloodroot	*Sanguinaria canadensis*
Sassafras	*Sassafras albidum*
Saxifrage	*Saxifraga* sp.
Little bluestem	*Schizachyrium scoparium*
Wool grass	*Scirpus cyperinus*
Bulrush	*Scirpus* sp.
Giant foxtail	*Setaria faberi*
Yellow foxtail	*Setaria pumila*
Green bristlegrass	*Setaria viridis*
Bladder campion	*Silene vulgaris*
Common greenbrier	*Smilax rotundifolia*

Table III.E-1
Plant Species Identified within the Fjord Trail North Corridor

Common Name	Scientific Name
Tall goldenrod	*Solidago altissima*
Canada goldenrod	*Solidago canadensis*
Late goldenrod	*Solidago gigantea*
Wrinkle-leaf goldenrod	*Solidago rugosa*
Seaside goldenrod	*Solidago sempervirens*
Goldenrod	*Solidago* sp.
Indian grass	*Sorghastrum nutans*
Bushy aster	*Symphyotrichum dumosum*
New England aster	*Symphyotrichum novae-angliae*
Aster	*Symphyotrichum* sp.
Skunk cabbage	*Symplocarpus foetidus*
Common lilac	*Syringa vulgaris*
Common dandelion	*Taraxacum officinale*
Roadside pennycress	*Thlaspi alliaceum*
American basswood	*Tilia americana*
Poison ivy	*Toxicodendron*
Red clover	*Trifolium pratense*
White clover	*Trifolium repens*
Colt's foot	*Tussilago farfara*
Broadleaf cattail	*Typha latifolia*
American elm	*Ulmus americana*
Slippery elm	*Ulmus rubra*
Elm	*Ulmus* sp.
Lowbush blueberry	*Vaccinium angustifolium*
Common mullein	*Verbascum thapsus*
Southern arrowwood	*Viburnum dentatum*
Blackhaw viburnum	*Viburnum prunifolium*
Viburnum	*Viburnum* sp.
Vetch	*Vicia* sp.
Periwinkle	*Vinca* minor
Violet	*Viola* sp.
Riverbank grape	*Vitis riparia*
Grape	*Vitis* sp.
Cliff fern	*Woodsia* sp.
Golden Alexanders	*Zizia aurea*

Sources: Site visits by Shumaker in May 2017 and between October and November 2019, by AKRF in October 2016 and November 2021, by Jesse Jaycox (OPRHP) in June 2017, and by Hudsonia between August and September 2021.

Table III.E-2
Birds Documented during the NYS 2000-2005 Second Breeding Bird Atlas (Blocks 5858A, 5859C, and 5759D) and NYS Third Breeding Bird Atlas (Wappinger Falls SW, West Point NW, and West Point CW Blocks)

Common Name	Scientific Name	2000-2005	2020-2024
Cooper's Hawk	*Accipiter cooperii*		X
Sharp-shinned Hawk	*Accipiter striatus*	X	
Spotted Sandpiper	*Actitis macularius*	X	X
Red-winged Blackbird	*Agelaius phoeniceus*	X	X
Wood Duck	*Aix sponsa*	X	X
Mallard	*Anas platyrhynchos*	X	X
American Pipit	*Anthus rubescens*		X
Ruby-throated Hummingbird	*Archilochus colubris*	X	X
Great Blue Heron	*Ardea herodias*	X	X
Tufted Titmouse	*Baeolophus bicolor*	X	X
Cedar Waxwing	*Bombycilla cedrorum*	X	X
American Bittern	*Botaurus lentiginosus*		X
Canada Goose	*Branta canadensis*	X	X
Great Horned Owl	*Bubo virginianus*	X	X
Red-tailed Hawk	*Buteo jamaicensis*	X	X
Red-shouldered Hawk	*Buteo lineatus*		X
Broad-winged Hawk	*Buteo platypterus*	X	X
Green Heron	*Butorides virescens*	X	X
Whip-poor-will	*Caprimulgus vociferus*	X	
Northern Cardinal	*Cardinalis cardinalis*	X	X
House Finch	*Carpodacus mexicanus*	X	X
Turkey Vulture	*Cathartes aura*	X	X
Veery	*Catharus fuscescens*	X	
Hermit Thrush	*Catharus guttatus*	X	X
Chimney Swift	*Chaetura pelagica*		X
Killdeer	*Charadrius vociferus*		X
Marsh Wren	*Cistothorus palustris*		X
Yellow-billed Cuckoo	*Coccyzus americanus*		X
Black-billed Cuckoo	*Coccyzus erythropthalmus*	X	X
Northern Flicker	*Colaptes auratus*	X	X
Rock Pigeon	*Columba livia*	X	X
Eastern Wood-Pewee	*Contopus virens*	X	X
Black Vulture	*Coragyps atratus*	X	X
American Crow	*Corvus brachyrhynchos*	X	X

Table III.E-3
Reptiles and Amphibians Documented in Hudson Highlands State Park Preserve and by the NYSDEC Herp Atlas Project in the West Point Census Block

Common Name	Scientific Name
Marbled Salamander	*Ambystoma opacum*
Jefferson Salamander	*Ambystoma jeffersonianum*
Blue-spotted Salamander	*Ambystoma laterale*
Spotted Salamander	*Ambystoma maculatum*
Red-spotted Newt	*Notophthalmus v. viridescens*
Northern Redback Salamander	*Plethodon c. cinereus*
Northern Slimy Salamander	*Plethodon glutinosus*
Four-toed Salamander	*Hemidactylium scutatum*
Northern Two-lined Salamander	*Eurycea bislineata*
Eastern American Toad	*Bufo a. americanus*
Fowler's Toad*	*Bufo fowleri*
Gray Treefrog	*Hyla versicolor*
Northern Spring Peeper	*Pseudacris c. crucifer*
Bullfrog	*Lithobates catesbeiana*
Green Frog	*Lithobates clamitans melanota*
Wood Frog	*Lithobates sylvatica*
Northern Leopard Frog*	*Lithobates pipiens*
Pickerel Frog	*Lithobates palustris*
Common Snapping Turtle	*Chelydra s. serpentina*
Common Musk Turtle	*Sternotherus odoratus*
Spotted Turtle	*Clemmys guttata*
Wood Turtle	*Clemmys insculpta*
Eastern Box Turtle	*Terrapene c. carolina*
Northern Diamondback Terrapin*	*Malaclemys t. terrapin*
Common Map Turtle*	*Graptemys geographica*
Red-eared Slider	*Trachemys scripta elegans*
Painted Turtle	*Chrysemys picta*
Eastern Fence Lizard	*Sceloporus undulatus hyacinthinus*
Five-lined Skink	*Eumeces fasciatus*
Northern Water Snake	*Nerodia s. sipedon*
Northern Brown Snake*	*Storeria d. dekayi*
Northern Redbelly Snake*	*Storeria o. occipitomaculata*
Common Garter Snake	*Thamnophis sirtalis*
Eastern Hognose Snake	*Heterodon platirhinos*
Northern Ringneck Snake	*Diadophis punctatus edwardsii*
Eastern Worm Snake	*Carphophis a. amoenus*
Northern Black Racer	*Coluber c. constrictor*
Black Rat Snake	*Elaphe o. obsoleta*
Eastern Milk Snake	*Lampropeltis t. triangulum*
Northern Copperhead	*Agkistrodon contortrix mokasen*
Timber Rattlesnake	*Crotalus horridus*

Notes: Asterisk indicates species documented by the Herp Atlas in the West Point census block that have not been documented in HHSPP (OPRHP 2010). Boldface indicates the subset of species that are unlikely to occur in the vicinity of the Forest Trail North corridor on the basis of their habitat associations, area requirements, and sensitivity to human disturbance.

Table III.E-4
Mammals documented in Hudson Highlands State Park Preserve

Common Name	Scientific Name
Virginia Opossum	*Didelphis virginiana*
Little Brown Bat	*Myotis lucifugus*
Eastern Small-footed Bat	*Myotis leibii*
Northern Long-eared bat	*Myotis septentrionalis*
Tri-colored Bat	*Perimyotis subflavus*
Big Brown Bat	*Eptesicus fuscus*
Eastern Cottontail	*Sylvilagus floridanus*
New England Cottontail	*Sylvilagus transitionalis*
Eastern Chipmunk	*Tamias striatus*
Woodchuck	*Marmota monax*
Gray Squirrel	*Sciurus carolinensis*
Red Squirrel	*Tamiasciurus hudsonicus*
Southern Flying Squirrel	*Glaucomys volans*
American Beaver	*Castor canadensis*
Common Muskrat	*Ondatra zibethicus*
Eastern Coyote	*Canis latrans*
Red Fox	*Vulpes vulpes*
Gray Fox	*Urocyon cinereoargenteus*
American Black Bear	*Ursus americanus*
Raccoon	*Procyon lotor*
Fisher	*Martes pennanti*
American Mink	*Neovison vison*
Striped Skunk	*Mephitis mephitis*
North American River Otter	*Lontra canadensis*
Bobcat	*Lynx rufus*
White-tailed Deer	*Odocoileus virginianus*

Note: Boldface indicates the subset of species that are not expected to occur in the vicinity of the Fjord Trail North corridor on the basis of their habitat associations, area requirements, and sensitivity to human disturbance.
Source: OPRHP (2010)

B. FJORD TRAIL SOUTH CORRIDOR

Table IV.E-1
Flora Identified within the Project Site

Common Name	Scientific Name
Box elder	*Acer negundo*
Japanese maple	*Acer palmatum*
Norway maple	*Acer platanoides*
Red maple	*Acer rubrum*
Silver maple	*Acer saccharinum*
Sugar maple	*Acer saccharum*
Common yarrow	*Achillea millefolium*
Tree of heaven	*Ailanthus altissima*
Garlic mustard	*Alliaria petiolata*
Onion	*Allium* spp.
Pigweed	*Amaranthus* spp.
Serviceberry	*Amelanchier* spp.
Porcelainberry	*Ampelopsis brevipedunculata*
Columbine	*Aquilegia* spp.
Common burdock	*Arctium minus*
Common mugwort	*Artemisia vulgaris*
Common milkweed	*Asclepias syriaca*
Japanese barberry	*Berberis thunbergii*
Black birch	*Betula lenta*
Paper birch	*Betula papyrifera*
Gray birch	*Betula populifolia*
Butterfly bush	*Buddleja davidii*
Boxwood	*Buxus* spp.
Shepherd's purse	*Capsella bursa-pastoris*
Pennsylvania sedge	*Carex pensylvanica*
Sedge	*Carex* spp.
Pignut hickory	*Carya glabra*
Shagbark hickory	*Carya ovata*
Southern catalpa	*Catalpa bignoniodies*
Asiatic bittersweet	*Celastrus orbiculatus*
Hackberry	*Celtis occidentalis*
Greater celandine	*Chelidonium majus*
Canada thistle	*Cirsium arvense*
Flowering dogwood	*Cornus florida*
Gray dogwood	*Cornus racemosa*
Hawthorn	*Crataegus* spp.
Orchard grass	*Dactylis glomerata*
Queen Anne's lace	*Daucus carota*
Russian olive	*Elaeagnus angustifolia*
autumn olive	*Elaeagnus umbellata*
Water horsetail	*Equisetum fluviatile*
Winged euonymus	*Euonymus alatus*
White wood aster	*Eurybia divaricata*
Japanese knotweed	*Fallopia japonica*
Virginia strawberry	*Fragaria virginiana*
White ash	*Fraxinus americana*
Ash	*Fraxinus* spp.
White bedstraw	*Galium album*
Geranium	*Geranium* spp.

Table IV.E-1
Flora Identified within the Project Site

Common Name	Scientific Name
Honey locust	*Gleditsia triacanthos*
English ivy	*Hedera helix*
Hosta	*Hosta* spp.
Hydrangea	*Hydrangea* spp.
Holly	*Ilex* spp.
Spotted jewelweed	*Impatiens capensis*
Blue flag	*Iris versicolor*
Black walnut	*Juglans nigra*
Path rush	*Juncus tenuis*
Eastern red cedar	*Juniperus virginiana*
Common henbit	*Lamium amplexicaule*
Purple deadnettle	*Lamium purpureum*
Privet	*Ligustrum* spp.
Lily	*Lilium* spp.
Spice bush	*Lindera benzoin*
Tulip tree	*Liriodendron tulipifera*
Japanese honeysuckle	*Lonicera japonica*
Creeping Jenny	*Lysimachia nummularia*
Purple loosestrife	*Lythrum salicaria*
Ostrich fern	*Matteuccia struthiopteris*
Yellow sweet-clover	*Melilotus officinalis*
Japanese stiltgrass	*Microstegium vimineum*
White mulberry	*Morus alba*
Prickly pear	*Opuntia humifusa*
Star-of-Bethlehem	*Ornithogalum umbellatum*
Eastern hop-hornbeam	*Ostrya virginiana*
Peony	*Paeonia* spp.
Switchgrass	*Panicum* spp.
Virginia creeper	*Parthenocissus quinquefolia*
Spotted lady's thumb	*Persicaria maculosa*
Pokeweed	*Phytolacca americana*
Poa	*Poa* spp.
Jumpseed	*Polygonum virginiana*
Christmas fern	*Polystichum acrostichoides*
Wild plum	*Prunus americana*
Black cherry	*Prunus serotina*
Chokecherry	*Prunus virginiana*
White oak	*Quercus alba*
Pin oak	*Quercus palustris*
Red oak	*Quercus rubra*
Common buckthorn	*Rhamnus cathartica*
Sumac	*Rhus* spp.
Staghorn sumac	*Rhus typhina*
Black locust	*Robinia pseudoacacia*
Multiflora rose	*Rosa multiflora*
Wineberry	*Rubus phoenicolasius*
Raspberry	*Rubus* spp.
Curly dock	*Rumex crispus*
Black willow	*Salix nigra*
Sassafras	*Sassafras albidum*
Saxifrage	*Saxifraga* spp.

Table IV.E-1
Flora Identified within the Project Site

Common Name	Scientific Name
Common greenbrier	*Smilax rotundifolia*
Late goldenrod	*Solidago altissima*
Wrinkle-leaf goldenrod	*Solidago rugosa*
Goldenrod	*Solidago* spp.
Common lilac	*Syringa vulgaris*
Common dandelion	*Taraxacum officinale*
Yew	*Taxus* spp.
Northern white cedar	*Thuja occidentalis*
American basswood	*Tilia americana*
Poison ivy	*Toxicodendron radicans*
White clover	*Trifolium repens*
Tulips	*Tulipa* spp.
Broad-leaved cattail	*Typha latifolia*
Lowbush blueberry	*Vaccinium angustifolium*
Common mullein	*Verbascum thapsus*
Mapleleaf viburnum	*Viburnum acerifolium*
Arrowwood	*Viburnum dentatum*
Nannyberry	*Viburnum lentago*
Vetch	*Vicia sativa*
Periwinkle	*Vinca minor*
Violet	*Viola* spp.
Grape	*Vitis* spp.

Sources: Site visits by Shumaker in May 2017 and between October and November 2019, by AKRF in October 2016 and November 2021, by Jesse Jaycox (OPRHP) in June 2017, and by Hudsonia between August and September 2021.

Table IV.E-2
Birds Documented during the NYS 2000-2005 Second Breeding Bird Atlas (Block 5858A) and NYS Third Breeding Bird Atlas (West Point CW and West Point SW Blocks)

Common Name	Scientific Name	2000-2005	2020-2024
Cooper's Hawk	*Accipiter cooperii*	X	X
Red-winged Blackbird	*Agelaius phoeniceus*		X
Wood Duck	*Aix sponsa*		X
Mallard	*Anas platyrhynchos*	X	X
American Black Duck	*Anas rubripes*		X
Ruby-throated Hummingbird	*Archilochus colubris*	X	X
Great Blue Heron	*Ardea herodias*	X	X
Tufted Titmouse	*Baeolophus bicolor*		X
Cedar Waxwing	*Bombycilla cedrorum*	X	X
Canada Goose	*Branta canadensis*	X	X
Great Horned Owl	*Bubo virginianus*	X	
Red-tailed Hawk	*Buteo jamaicensis*	X	X
Red-shouldered Hawk	*Buteo lineatus*		X
Broad-winged Hawk	*Buteo platypterus*	X	
Green Heron	*Butorides virescens*	X	X
Whip-poor-will	*Caprimulgus vociferus*	X	
Northern Cardinal	*Cardinalis cardinalis*	X	X
House Finch	*Carpodacus mexicanus*	X	X
Turkey Vulture	*Cathartes aura*	X	X
Veery	*Catharus fuscescens*	X	X
Chimney Swift	*Chaetura pelagica*	X	X
Marsh Wren	*Cistothorus palustris*		X
Yellow-billed Cuckoo	*Coccyzus americanus*		X
Northern Flicker	*Colaptes auratus*	X	X
Rock Pigeon	*Columba livia*	X	X
Eastern Wood-Pewee	*Contopus virens*	X	X
Black Vulture	*Coragyps atratus*	X	X
American Crow	*Corvus brachyrhynchos*	X	X
Common Raven	*Corvus corax*	X	X
Fish Crow	*Corvus ossifragus*		X
Blue Jay	*Cyanocitta cristata*	X	X
Mute Swan	*Cygnus olor*	X	X
Cerulean Warbler	*Dendroica cerulea*	X	
Prairie Warbler	*Dendroica discolor*	X	X
Chestnut-sided Warbler	*Dendroica pensylvanica*	X	
Yellow Warbler	*Dendroica petechia*	X	X
Pileated Woodpecker	*Dryocopus pileatus*	X	X
Gray Catbird	*Dumetella carolinensis*	X	X
Willow Flycatcher	*Empidonax traillii*	X	X
Acadian Flycatcher	*Empidonax virescens*		X

Table IV.E-2
Birds Documented during the NYS 2000-2005 Second Breeding Bird Atlas (Block 5858A) and NYS Third Breeding Bird Atlas (West Point CW and West Point SW Blocks)

Common Name	Scientific Name	2000-2005	2020-2024
Peregrine Falcon	*Falco peregrinus*	X	X
Common Yellowthroat	*Geothlypis trichas*	X	X
Purple Finch	*Haemorhous purpureus*		X
Bald Eagle	*Haliaeetus leucocephalus*		X
Worm-eating Warbler	*Helmitheros vermivorum*	X	X
Barn Swallow	*Hirundo rustica*	X	X
Wood Thrush	*Hylocichla mustelina*	X	X
Baltimore Oriole	*Icterus galbula*	X	X
Orchard Oriole	*Icterus spurius*	X	
Least Bittern	*Ixobrychus exilis*		X
Dark-eyed Junco	*Junco hyemalis*		X
Ring-billed Gull	*Larus delawarensis*		X
Eastern Screech-Owl	*Megascops asio*	X	X
Red-bellied Woodpecker	*Melanerpes carolinus*	X	X
Wild Turkey	*Meleagris gallopavo*	X	X
Swamp Sparrow	*Melospiza georgiana*		X
Song Sparrow	*Melospiza melodia*	X	X
Common Merganser	*Mergus merganser*		X
Northern Mockingbird	*Mimus polyglottos*	X	X
Black-and-white Warbler	*Mniotilta varia*	X	X
Brown-headed Cowbird	*Molothrus ater*	X	X
Great Crested Flycatcher	*Myiarchus crinitus*		X
Osprey	*Pandion haliaetus*		X
House Sparrow	*Passer domesticus*	X	X
Indigo Bunting	*Passerina cyanea*	X	X
Cliff Swallow	*Petrochelidon pyrrhonota*		X
Double-crested Cormorant	*Phalacrocorax auritus*	X	X
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	X	X
Downy Woodpecker	*Picoides pubescens*	X	X
Hairy Woodpecker	*Picoides villosus*	X	X
Eastern Towhee	*Pipilo erythrophthalmus*		X
Scarlet Tanager	*Piranga olivacea*	X	X
Black-capped Chickadee	*Poecile atricapillus*		X
Blue-gray Gnatcatcher	*Polioptila caerulea*	X	X
Purple Martin	*Progne subis*	X	
Common Grackle	*Quiscalus quiscula*	X	X
Virginia Rail	*Rallus limicola*		X
Ruby-crowned Kinglet	*Regulus calendula*		X

Table IV.E-2
Birds Documented during the NYS 2000-2005 Second Breeding Bird Atlas (Block 5858A) and NYS Third Breeding Bird Atlas (West Point CW and West Point SW Blocks)

Common Name	Scientific Name	2000-2005	2020-2024
Golden-crowned Kinglet	*Regulus satrapa*		X
Bank Swallow	*Riparia riparia*	X	
Eastern Phoebe	*Sayornis phoebe*	X	X
Ovenbird	*Seiurus aurocapilla*	X	X
Louisiana Waterthrush	*Seiurus motacilla*	X	X
Yellow-rumped Warbler	*Setophaga coronata*		X
Palm Warbler	*Setophaga palmarum*		X
Pine Warbler	*Setophaga pinus*		X
American Redstart	*Setophaga ruticilla*	X	X
Eastern Bluebird	*Sialia sialis*	X	X
White-breasted Nuthatch	*Sitta carolinensis*	X	X
Yellow-bellied Sapsucker	*Sphyrapicus varius*		X
American Goldfinch	*Spinus tristis*	X	X
Chipping Sparrow	*Spizella passerina*	X	X
Field Sparrow	*Spizella pusilla*	X	X
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	X	X
Barred Owl	*Strix varia*		X
European Starling	*Sturnus vulgaris*	X	X
Tree Swallow	*Tachycineta bicolor*	X	X
Carolina Wren	*Thryothorus ludovicianus*	X	X
House Wren	*Troglodytes aedon*	X	X
Winter Wren	*Troglodytes hiemalis*		X
American Robin	*Turdus migratorius*	X	X
Eastern Kingbird	*Tyrannus tyrannus*	X	X
Blue-winged Warbler	*Vermivora pinus*	X	X
Yellow-throated Vireo	*Vireo flavifrons*	X	X
Warbling Vireo	*Vireo gilvus*	X	X
White-eyed Vireo	*Vireo griseus*	X	X
Red-eyed Vireo	*Vireo olivaceus*	X	X
Blue-headed Vireo	*Vireo solitarius*		X
Hooded Warbler	*Wilsonia citrina*	X	
Mourning Dove	*Zenaida macroura*	X	X
White-throated Sparrow	*Zonotrichia albicollis*		X

Table IV.E-2
Birds Documented during the NYS 2000-2005 Second Breeding Bird Atlas (Block 5858A) and NYS Third Breeding Bird Atlas (West Point CW and West Point SW Blocks)

Common Name	Scientific Name	2000-2005	2020-2024

Notes: Boldface indicates the subset of species that are not considered to have the potential to nest in the vicinity of the Shoreline Trail, on the basis of their habitat associations, area requirements, and sensitivity to human disturbance (Billerman et al. 2020).

The NYS 2020-2024 BBA is ongoing. Available data are uploaded by volunteer citizen scientists and occasionally reviewed by eBird regional reviewers. Survey blocks are roughly 9 square miles and are a subset of the 7.5' United States Geological Survey (USGS) Topo Quad in which the survey block is located (the USGS Topo Quads are broken up into six smaller blocks). The survey blocks from the Third BBA do not correlate directly with the Second BBA survey blocks. As of April 4, 2024, the West Point CW Block and West Point SW Block and for the 2020-2024 BBA are considered "incomplete." Additional species may be included in the species log for all survey blocks as the 2020-2024 survey progresses. Only birds identified to species and with "confirmed", "probable", or "possible" breeding evidence are included in the table.

Sources: NYSDEC 2000-2005 Second BBA. Available from dec.ny.gov/cfmx/extapps/bba.

NYSDEC 2020-2024 Third BBA. Available from ebird.org/atlasny (Accessed April 4, 2024).

Table IV.E-3
Reptiles and Amphibians Documented in Hudson Highlands State Park Preserve and by the NYSDEC Herp Atlas Project in the West Point Census Block

Common Name	Scientific Name
Marbled Salamander	*Ambystoma opacum*
Jefferson Salamander	*Ambystoma jeffersonianum*
Blue-spotted Salamander	*Ambystoma laterale*
Spotted Salamander	*Ambystoma maculatum*
Red-spotted Newt	*Notophthalmus v. viridescens*
Northern Redback Salamander	*Plethodon c. cinereus*
Northern Slimy Salamander	*Plethodon glutinosus*
Four-toed Salamander	*Hemidactylium scutatum*
Northern Two-lined Salamander	*Eurycea bislineata*
Eastern American Toad	*Bufo a. americanus*
Fowler's Toad*	*Bufo fowleri*
Gray Treefrog	*Hyla versicolor*
Northern Spring Peeper	*Pseudacris c. crucifer*
Bullfrog	*Lithobates catesbeianus*
Green Frog	*Lithobates clamitans melanota*
Wood Frog	*Lithobates sylvaticus*
Northern Leopard Frog*	*Lithobates pipiens*
Pickerel Frog	*Lithobates palustris*
Common Snapping Turtle	*Chelydra s. serpentina*
Common Musk Turtle	*Sternotherus odoratus*
Spotted Turtle	*Clemmys guttata*
Wood Turtle	*Clemmys insculpta*
Eastern Box Turtle	*Terrapene c. carolina*
Northern Diamondback Terrapin*	*Malaclemys t. terrapin*
Common Map Turtle*	*Graptemys geographica*
Red-eared Slider	*Trachemys scripta elegans*
Painted Turtle	*Chrysemys picta*
Eastern Fence Lizard	*Sceloporus undulatus hyacinthinus*
Five-lined Skink	*Eumeces fasciatus*
Northern Water Snake	*Nerodia s. sipedon*
Northern Brown Snake*	*Storeria d. dekayi*
Northern Redbelly Snake*	*Storeria o. occipitomaculata*
Common Garter Snake	*Thamnophis sirtalis*
Eastern Hognose Snake	*Heterodon platirhinos*
Northern Ringneck Snake	*Diadophis punctatus edwardsii*
Eastern Worm Snake	*Carphophis a. amoenus*
Northern Black Racer	*Coluber c. constrictor*
Black Rat Snake	*Elaphe o. obsoleta*
Eastern Milk Snake	*Lampropeltis t. triangulum*
Northern Copperhead	*Agkistrodon contortrix mokasen*
Timber Rattlesnake	*Crotalus horridus*

Notes: Asterisk indicates species documented by the Herp Atlas in the West Point census block that have not been documented in Hudson Highlands State Park Preserve (OPRHP 2010a). Boldface indicates the subset of species that are not expected to occur in the vicinity of the Fjord Trail South corridor on the basis of their habitat associations, area requirements, and sensitivity to human disturbance.

Table IV.E-4
Mammals Documented in Hudson Highlands State Park Preserve

Common Name	Scientific Name
Virginia Opossum	*Didelphis virginiana*
Little Brown Bat	*Myotis lucifugus*
Eastern Small-footed Bat	*Myotis leibii*
Northern Long-eared Bat	*Myotis septentrionalis*
Tri-colored Bat	*Perimyotis subflavus*
Big Brown Bat	*Eptesicus fuscus*
Eastern Cottontail	*Sylvilagus floridanus*
New England Cottontail	*Sylvilagus transitionalis*
Eastern Chipmunk	*Tamias striatus*
Woodchuck	*Marmota monax*
Gray Squirrel	*Sciurus carolinensis*
Red Squirrel	*Tamiasciurus hudsonicus*
Southern Flying Squirrel	*Glaucomys volans*
American Beaver	*Castor canadensis*
Common Muskrat	*Ondatra zibethicus*
Eastern Coyote	*Canis latrans*
Red Fox	*Vulpes vulpes*
Gray Fox	*Urocyon cinereoargenteus*
American Black Bear	*Ursus americanus*
Raccoon	*Procyon lotor*
Fisher	*Martes pennanti*
American Mink	*Neovison vison*
Striped Skunk	*Mephitis mephitis*
North American River Otter	*Lontra canadensis*
Bobcat	*Lynx rufus*
White-tailed Deer	*Odocoileus virginianus*

Note: Boldface indicates the subset of species that are not expected to occur in the vicinity of the Fjord Trail South corridor on the basis of their habitat associations, area requirements, and sensitivity to human disturbance.
Source: OPRHP (2010).

Table IV.E-5
Finfish Species with the Potential to Occur near the Fjord Trail South Corridor

Common Name	Scientific Name
Alewife	*Alosa pseudoharengus*
American Eel	*Anguilla rostrata*
American Shad	*Alosa sapidissima*
Atlantic Bluefish	*Pomatomus saltatrix*
Atlantic Menhaden	*Brevoortia tyrannus*
Atlantic Needlefish	*Strongylura marina*
Atlantic Silverside	*Menidia menidia*
Atlantic Sturgeon	*Acipenser oxyrinchus*
Atlantic Tomcod	*Microgadus tomcod*
Banded Killifish	*Fundulus diaphanus*
Bay Anchovy	*Anchoa mitchelli*
Blacknose Dace	*Rhynichthys atratulus*
Blueback Herring	*Alosa aestivalis*
Bluegill	*Lepomis macrochirus*
Brown Bullhead	*Ictalurus nebulosus*
Central Mudminnow	*Umbra limi*
Chain Pickerel	*Esox niger*
Channel Catfish	*Ictalurus punctatus*
Common Carp	*Cyprinus carpio*
Creek Chub	*Semotilus atromaculatus*
Eastern Mudminnow	*Umbra pygmaea*
Fourespine Stickleback	*Apeltes quadricus*
Golden Shiner	*Notemigonus crysoleucas*
Goldfish	*Carassius auratus*
Hickory Shad	*Alosa mediocris*
Hogchoker	*Trinectes maculatus*
Largemouth Bass	*Micropterus salmoides*
Longnose Dace	*Rhynichthys cataractae*
Mummichog	*Fundulus heteroclitus*
Northern Pipefish	*Sygnathus fuscus*
Pumpkinseed	*Lepomis gibbosus*
Redbreast Sunfish	*Lepomis auritus*
Redfin Pickerel	*Esox americanus*
Rock Bass	*Ambloplites rupestris*
Sea Lamprey	*Petromyzon marinus*
Shortnose Sturgeon	*Acipenser brevirostrum*
Smallmouth Bass	*Micropterus dolomieui*
Spottail Shiner	*Notropis hudsonius*
Striped Bass	*Morone saxatilis*
Tessellated Darter	*Etheostoma olmstedi*
White Catfish	*Ameiurus catus*
White Perch	*Morone americana*
White Sucker	*Catostomus commersonii*
Yellow Perch	*Perca flavescens*
Notes: **Sources:** OPRHP 2010a	

Table IV.E-6
Essential Fish Habitat Designated Species within Fjord Trail South Vicinity

Species	Eggs	Larvae	Juvenile	Adult
Winter flounder	X	X	X	X
Little Skate			X	X
Atlantic Herring		X	X	X
Red Hake	X	X	X	X
Windowpane Flounder	X	X	X	X
Winter skate			X	X
Clearnose Skate			X	X
Longfin Inshore Squid	X			
Bluefish			X	X
Atlantic Butterfish		X		
Summer Flounder*		X	X	X

Source: https://www.habitat.noaa.gov/apps/efhmapper/efhreport
* The Fjord Trail South corridor is within a region-wide area designated as a Habitat Area of Particular Concern (HAPC) for Summer Flounder SAV. Site specific mapping of SAV will be conducted within the Fjord Trail South corridor as the project design develops

Table IV.E-7
Proxy Sound Level Information for Impact and Vibratory Hammering

Hammer Type	Pile Diameter and Type	Water Depth (meters)	Peak (dB)	SELss (dB)	RMS (dB)	Reference	Proxy Project Location
Impact	20-in Steel Pipe	3	204	151	161	Caltrans 2015 (Row 23)	Generic example
Impact	36-in Steel Pipe	< 5	208	180	190	Caltrans 2015 (Row 19)	Generic example
Impact	48-in Steel Pipe	2	205	185	195	Caltrans 2020 (Row 112)	Geyserville – Russian River, CA
Vibratory	18-in Steel Pipe	3	n/a	n/a	158	Caltrans 2020 (Row 23)	Prichard Lake Pumping Station / Sacramento, CA
Vibratory	36-in Steel Pipe	5	n/a	n/a	170	Caltrans 2015 (Row 15)	Generic example
Vibratory	48-in Steel Shell	NP	n/a	n/a	159	Illingworth & Rodkin 2017 (Row 49)	Navy east coast installations

Notes: NOAA Fisheries proxy data assumes that a cushion block would be used during impact hammering.
Sources: NOAA Fisheries Multi-Species Pile Driving Calculator, Version 2.1, September 2025

Table IV.E-8
Distance to Underwater Noise Effects on Fish During Vibratory Hammering

Pile Type	Pile Size (in)	Estimated Number of Piles per Day	Duration to Drive Single Pile (min)	Distance to 150 dB RMS Behavioral Threshold (ft)
Steel Pipe	18	2	60	112
Steel Pipe	36	2	60	706.8
Steel Shell	48	2	60	130.6

Notes: Vibratory hammering only results in behavioral effects to fish.
Sources: NOAA Fisheries Multi-Species Pile Driving Calculator, Version 2.1, September 2025

Table IV.E-9
Distance to Underwater Noise Effects on Fish During Impact Hammering

Pile Type	Pile Size (in)	Estimated Number of Piles per Day	Number of Strikes per Pile	Onset of Physical Injury (feet)			Behavioral Effects (feet)
				206 dB peak	187 dB SELcum, ≥ 2 grams	183 dB SELcum, < 2 grams	150 dB RMS
Steel Pipe	20	2	600	24.1	14.7	27.3	177.5
Steel Pipe	36	2	600	44.6	1,265	2,337.6	15,228.3
Steel Shell	48	2	600	28.1	2,725.5	5,036.2	32,808.4

Notes: A cushion block and soft start would be used for all impact hammering. The number of hammer strikes per pile is a conservative based on the results of the geotechnical investigation and the design team's understanding of subsurface conditions. The actual number of strikes per pile may be less than the estimated numbers.
Sources: NOAA Fisheries Multi-Species Pile Driving Calculator, Version 2.1, September 2025.