

LIST OF VASCULAR PLANT SPECIES FOUND WITHIN THE DOE PORTS STUDY AREA DURING THE 2011 AND 2012 GROWING SEASONS

									Importance Value by Vegetated Habitat Type												
Field Code	Taxon	Common Name	Family	NATIVITY	WETLAND INDEX	C of C	FORM	Special Status	BLHF	Mature Oak-Hickory Forest	Mixed Mesic Forest	Mowed Maintained	Native Pine	Oldfield - Successional	Palustrine Emergent Wetland	Palustrine Forested Wetland	Palustrine Shrub-Scrub Wetland	Planted Pine	Ruderal Successional	Successional Forest	Successional Scrub
BOCY	<i>Boehmeria cylindrica</i>	False Nettle	Urticaceae	5	2	4	forb														
BOBI	<i>Botrychium biternatum</i>	Sparselobe grapefern	Ophioglossaceae	5	3	4	fern	E													
BODI2	<i>Botrychium dissectum</i>	Cutleaf Grapefern	Ophioglossaceae	5	3	3	fern														
BOVI	<i>Botrychium virginianum</i>	Rattlesnake Fern	Ophioglossaceae	5	4	4	fern														
BOCU	<i>Bouteloua curtipendula</i>	Sideoats Grama	Poaceae	5	5	8	grass														
BRER2	<i>Brachyelytrum erectum</i>	Bearded Shorthusk	Poaceae	5	5	5	grass														
BRIN2	<i>Bromus inermis</i>	Smooth Brome	Poaceae	1	5	0	grass	I													
CAPOI	<i>Calamagrostis porteri</i>	Porter's Reedgrass	Poaceae	5	5	8	grass	T													
CASC5	<i>Camassia scilloides</i>	Wild Hyacinth	Liliaceae	5	3	6	forb														
CARA2	<i>Campsis radicans</i>	Trumpet Creeper	Bignoniaceae	4	3	1	vine		1.23	0.28	1.34			2.22		1.81	3.31				
CAAN1	<i>Cardamine angustata</i>	Slender Toothwort	Brassicaceae	5	4	7	forb														
CACO26	<i>Cardamine concatenata</i>	Cutleaf Toothwort	Brassicaceae	5	4	3	forb														
CAHI3	<i>Cardamine hirsuta</i>	Hairy Bittercress	Brassicaceae	1	4	0	forb														
CARO3	<i>Cardamine rotundifolia</i>	American Bittercress	Brassicaceae	5	1	9	forb														
CAAL11	<i>Carex albursina</i>	White Bear Sedge	Cyperaceae	5	5	6	sedg				0.29										
CAAM8	<i>Carex amphibola</i>	Eastern Narrowleaf Sedge	Cyperaceae	5	3	5	sedg														
CAAN6	<i>Carex annectens</i>	Yellowfruit Sedge	Cyperaceae	5	2	3	sedg														
CABE2	<i>Carex bebbii</i>	Bebb's Sedge	Cyperaceae	5	1	7	sedg														
CABL	<i>Carex blanda</i>	Eastern Woodland Sedge	Cyperaceae	5	3	1	sedg														
CABU6	<i>Carex buxbaumii</i>	Buxbaum's Sedge	Cyperaceae	5	1	8	sedg														

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CACA15	<i>Carex caroliniana</i>	Carolina Sedge	Cyperaceae	5	4	4	sedg														
CACO22	<i>Carex corrugata</i>	Prune-fruit Sedge	Cyperaceae	NA	3	NA	sedg														
CACR7	<i>Carex cristatella</i>	Crested Sedge	Cyperaceae	5	2	3	sedg														
CAFR3	<i>Carex frankii</i>	Frank's Sedge	Cyperaceae	5	1	2	sedg														
CAGL6	<i>Carex glaucoidea</i>	Blue Sedge	Cyperaceae	5	3	5	sedg														
CAGR8	<i>Carex gracilescens</i>	Slender Wood Sedge	Cyperaceae	5	5	3	sedg														
CAGR3	<i>Carex granularis</i>	Limestone Meadow Sedge	Cyperaceae	5	2	3	sedg														
CAGR24	<i>Carex grisea</i>	Inflated Narrow-leaf Sedge	Cyperaceae	5	3	4	sedg														
CAHI6	<i>Carex hirsutella</i>	Fuzzy wuzzy Sedge	Cyperaceae	5	4	2	sedg														
CAHY4	<i>Carex hystricina</i>	Bottlebrush Sedge	Cyperaceae	5	1	5	sedg														
CAIN12	<i>Carex intumescens</i>	Greater Bladder Sedge	Cyperaceae	5	2	5	sedg														
CAJA2	<i>Carex jamesii</i>	James' Sedge	Cyperaceae	5	5	6	sedg														
CALA16	<i>Carex lacustris</i>	Lake Sedge	Cyperaceae	5	1	5	sedg														
CALA14	<i>Carex laevivaginata</i>	Smoothsheath Sedge	Cyperaceae	5	1	6	sedg														
CALA18	<i>Carex laxiculmis</i>	Spreading Sedge	Cyperaceae	5	5	3	sedg														
CALA19	<i>Carex laxiflora</i>	Two-edged Wood Sedge	Cyperaceae	5	4	3	sedg														
CALU5	<i>Carex lurida</i>	Shallow Sedge	Cyperaceae	5	1	3	sedg														
CANO	<i>Carex normalis</i>	Greater Straw Sedge	Cyperaceae	5	4	4	sedg														
CAOL2	<i>Carex oligocarpa</i>	Few-fruited Sedge	Cyperaceae	5	5	6	sedg														
CAPE6	<i>Carex pensylvanica</i>	Pennsylvania Sedge	Cyperaceae	5	5	3	sedg														

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CARO22	<i>Carex rosea</i>	Roseate Sedge	Cyperaceae	5	5	3	sedg														
CASC11	<i>Carex scoparia</i>	Broom Sedge	Cyperaceae	5	2	3	sedg														
CASW	<i>Carex swanii</i>	Swan's Sedge	Cyperaceae	5	4	4	sedg														
CATO4	<i>Carex torta</i>	Twisted Sedge	Cyperaceae	5	2	8	sedg														
CATR7	<i>Carex tribuloides</i>	blunt broom sedge	Cyperaceae	5	2	4	sedg														
CATY	<i>Carex typhina</i>	Cattail Sedge	Cyperaceae	5	2	5	sedg														
CAVU2	<i>Carex vulpinoidea</i>	Fox Sedge	Cyperaceae	5	1	1	sedg														
CAWI2	<i>Carex willdenowii</i>	Willdenow's Sedge	Cyperaceae	5	5	6	sedg														
CACA18	<i>Carpinus caroliniana</i>	American Hornbeam	Betulaceae	5	3	5	tree		1.63	0.84	0.79					2.17	2.01			1.41	
CAAL27	<i>Carya alba</i>	Mockernut Hickory	Juglandaceae	5	5	6	tree		0.49	8.76	1.12		8.87	3.01							5.3
CACO15	<i>Carya cordiformis</i>	Bitternut Hickory	Juglandaceae	5	4	5	tree			1.69	5.93										
CAGL8	<i>Carya glabra</i>	Pignut Hickory	Juglandaceae	5	5	5	tree		1.71	12.0	5.04		10.5	4.74						3.4	5.49
CAOV3	<i>Carya ovalis</i>	Red Hickory	Juglandaceae	5	5	5	tree				1.25		2.15								
CAOV2	<i>Carya ovata</i>	Shagbark Hickory	Juglandaceae	5	5	6	tree		5.69	14.9	9.49		2.27	4.17		2.58				2.26	
CASP8	<i>Catalpa speciosa</i>	Northern Catalpa	Bignoniaceae	4	3	0	tree												7.87		
CEOR7	<i>Celastrus orbiculatus</i>	Oriental bittersweet	Celastraceae	1	4	0	vine	I												0.87	
CESC	<i>Celastrus scandens</i>	American Bittersweet	Celastraceae	5	5	2	vine										1.76				
CEOC	<i>Celtis occidentalis</i>	Common Hackberry	Ulmaceae	5	4	4	tree		1.9		1.77					1.16					
CECA4	<i>Cercis canadensis</i>	Eastern Redbud	Fabaceae	5	5	3	tree		1.55		1.45					0.81				1.09	
CHFA2	<i>Chamaecrista fasciculata</i>	Partridge Pea	Fabaceae	5	4	3	forb														

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CHMA1	<i>Chamaesyce maculata</i>	Prostrate Spurge	Euphorbiaceae	4	5	0	forb														
CHNU9	<i>Chamaesyce nutans</i>	Spotted Spurge	Euphorbiaceae	4	5	0	forb														
CHSI2	<i>Chenopodium simplex</i>	Mapleleaf Goosefoot	Chenopodiaceae	4	5	1	forb														
CIMA2	<i>Cicuta maculata</i>	Spotted Water Hemlock	Apiaceae	5	1	3	forb														
CIAR2	<i>Cinna arundinacea</i>	Sweet Woodreed	Poaceae	5	2	4	grass														
CILU	<i>Circaea lutetiana</i>	Enchanter's Nightshade	Onagraceae	5	4	3	forb														
CIAL2	<i>Cirsium altissimum</i>	Tall Thistle	Asteraceae	5	5	4	forb														
CIDI	<i>Cirsium discolor</i>	Field Thistle	Asteraceae	5	5	4	forb														
CLVI3	<i>Claytonia virginica</i>	Virginia Springbeauty	Portulacaceae	5	4	2	forb														
CLVI5	<i>Clematis virginiana</i>	Devil's Darning Needles	Ranunculaceae	5	3	3	forb										3.22				
COCA4	<i>Collinsonia canadensis</i>	Richweed	Lamiaceae	5	3	5	forb														
COCO3	<i>Commelina communis</i>	Asiatic Dayflower	Commelinaceae	1	3	0	forb														
COMA2	<i>Conium maculatum</i>	Poison Hemlock	Apiaceae	1	2	0	forb	I													
COCO1	<i>Conoclinium coelestinum</i>	Blue Mist-flower	Asteraceae	5	3	3	forb														
COAM	<i>Conopholis americana</i>	American Cancer-root	Orobanchaceae	5	5	7	forb														
COCA5	<i>Conyza canadensis</i>	Canadian Horseweed	Asteraceae	4	5	0	forb	AI													
COLA5	<i>Coreopsis lanceolata</i>	Lanceleaf Tickseed	Asteraceae	5	4	0	forb														
COAM2	<i>Cornus amomum</i>	Silky Dogwood	Cornaceae	5	2	2	shru				0.91					0.74					
CODR	<i>Cornus drummondii</i>	Roughleaf Dogwood	Cornaceae	5	3	3	shru									0.68	3.12				
COFL2	<i>Cornus florida</i>	Flowering Dogwood	Cornaceae	5	5	5	tree		5.26	5.43	5.45	21.09	6.13	6.73	4.79	3.15	6.31	8.11	10.9	3.3	8.35

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CORA6	<i>Cornus racemosa</i>	Gray Dogwood	Cornaceae	5	3	1	shru														
COSE16	<i>Cornus sericea</i>	Redosier Dogwood	Cornaceae	5	2	3	shru				0.22				3.87						
COFL3	<i>Corydalis flavula</i>	Yellow Fumewort	Fumariaceae	5	4	4	forb														
COAM3	<i>Corylus americana</i>	American Hazelnut	Betulaceae	5	5	4	shru														
CRCR2	<i>Crataegus crus-galli</i>	Cockspur Hawthorn	Rosaceae	5	4	3	tree										2.89			0.78	
CRMO3	<i>Crataegus monogyna</i>	Oneseed Hawthorn	Rosaceae	1	5	0	tree														
CRPR2	<i>Crataegus pruinosa</i>	Waxyfruit Hawthorn	Rosaceae	5	5	2	tree										1.78				
CRATA	<i>Crataegus sp.</i>	Hawthorn	Rosaceae	5	3	1	tree		0.5	0.86			1.7								
CRSU5	<i>Crataegus succulenta</i>	Fleshy Hawthorn	Rosaceae	5	5	4	tree										1.77				
CRPE10	<i>Cruciata pedemontana</i>	Piedmont Begstraw	Rubiaceae	1	5	0	forb														
CUOR	<i>Cunilla origanoides</i>	Common Dittany	Lamiaceae	5	5	6	forb														
CYVI	<i>Cynoglossum virginianum</i>	Wild Comfrey	Boraginaceae	5	5	5	forb														
CYST	<i>Cyperus strigosus</i>	Strawcolored Flatsedge	Cyperaceae	4	2	1	sedg														
CYPR4	<i>Cystopteris protrusa</i>	Lowland Bladderfern	Dryopteridaceae	5	5	5	fern														
CYTE7	<i>Cystopteris tenuis</i>	Upland Brittle Bladderfern	Dryopteridaceae	5	5	5	fern														
DAGL	<i>Dactylis glomerata</i>	Orchardgrass	Poaceae	3	4	0	grass														
DACO	<i>Danthonia compressa</i>	Flattened Oatgrass	Poaceae	5	5	4	grass														
DASP2	<i>Danthonia spicata</i>	Poverty Oargrass	Poaceae	5	5	4	grass														
DACA6	<i>Daucus carota</i>	Quenn Anne's Lace	Apiaceae	1	5	0	forb	I													
DETR	<i>Delphinium tricornes</i>	Spring Larkspur	Ranunculaceae	5	5	4	forb														

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DEPU2	<i>Dennstaedtia punctilobula</i>	Eastern Hayscented Fern	Dennstaedtiaceae	5	5	6	fern														
DEAC4	<i>Deparia acrostichoides</i>	Silver False Spleenwort	Dryopteridaceae	5	3	6	fern														
DECA7	<i>Desmodium canadense</i>	Showy Ticktrefoil	Fabaceae	5	3	4	forb														
DEPA6	<i>Desmodium paniculatum</i>	Panicledleaf Ticktrefoil	Fabaceae	5	5	3	forb														
DEST2	<i>Desmodium strictum</i>	Pine Barren Ticktrefoil	Fabaceae	NA	4	NA	forb														
DIAR	<i>Dianthus armeria</i>	Deptford Pink	Caryophyllaceae	3	5	0	forb														
DICA	<i>Dicentra canadensis</i>	Squirrel Corn	Fumariaceae	5	5	6	forb														
DICU	<i>Dicentra cucullaria</i>	Dutchman's Breeches	Fumariaceae	5	5	6	forb														
DIAC2	<i>Dichanthelium acuminatum</i>	tapered rosette grass	Poaceae	5	3	2	grass														
DICL	<i>Dichanthelium clandestinum</i>	Deertongue	Poaceae	5	3	2	grass														
DIDI6	<i>Dichanthelium dichotomum</i>	Small-seeded Panic-grass	Poaceae	5	3	4	grass														
DILA8	<i>Dichanthelium latifolium</i>	Broadleaf Rosette Grass	Poaceae	5	5	4	grass														
DISC2	<i>Dichanthelium scabriusculum</i>	Wolly Rosette Grass	Poaceae	5	1	3	grass														
DILO	<i>Diervilla lonicera</i>	Northern Bush Honeysuckle	Caprifoliaceae	5	5	7	shru														
DIIS	<i>Digitaria ischaemum</i>	Smooth Crabgrass	Poaceae	1	5	0	grass	AI													
DITE2	<i>Diodia teres</i>	Rough Buttonweed	Rubiaceae	5	5	3	forb														
DIVI4	<i>Dioscorea villosa</i>	Wild Yam	Dioscoreaceae	5	3	4	vine		0.49												
DIVI5	<i>Diospyros virginiana</i>	Common Persimmon	Ebenaceae	5	3	4	tree			1.07	1.88	127.3	1.06	8.23	16.4			7.42	6.47	2.09	14.7
DIFU2	<i>Dipsacus fullonum</i>	Teasel	Dipsacaeae	1	5	0	forb	I													
DOIN2	<i>Doellingeria infirma</i>	Cornel-leaf Whitetop	Asteraceae	5	5	8	forb														

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ECCR	<i>Echinochloa crus-galli</i>	Barnyard-grass	Poaceae	1	4	0	grass	AI													
ELAN	<i>Elaeagnus angustifolia</i>	Russian Olive	Eleaegnaceae	1	4	0	tree	I	2.34		1.24					5.19	4.06	12.3			
ELAC	<i>Eleocharis acicularis</i>	Least Spikerush	Cyperaceae	5	1	5	sedg														
ELOB2	<i>Eleocharis obtusa</i>	Blunt Spikerush	Cyperaceae	5	1	1	sedg														
ELQU	<i>Eleocharis quadrangulata</i>	Four-angled Spikerush	Cyperaceae	5	1	4	sedg														
ELCA3	<i>Elephantopus carolinianus</i>	Carolina Elenphants Foot	Asteraceae	5	4	4	forb														
ELCA4	<i>Elymus canadensis</i>	Canada Wildrye	Poaceae	5	4	6	grass														
ELHY	<i>Elymus hystrix</i>	Eastern Bottlebrush Grass	Poaceae	5	5	4	grass														
ELVI	<i>Elymus villosus</i>	Hairy Wildrye	Poaceae	5	5	4	grass														
ENBI	<i>Enemion biternatum</i>	Eastern False Rue Anemone	Ranunuculaceae	5	5	7	forb														
EPVI2	<i>Epifagus virginiana</i>	Beechdrops	Orobanchaceae	5	5	10	forb														
EPCO	<i>Epilobium coloratum</i>	Purpleleaf Willowherb	Onagraceae	5	1	1	forb														
EQAR	<i>Equisetum arvense</i>	Field Horsetail	Equisetaceae	4	3	0	fern														
EQHY	<i>Equisetum hyemale</i>	Scouring Rush	Equisetaceae	5	2	2	fern														
ERFR	<i>Eragrostis frankii</i>	Sandbar Lovegrass	Poaceae	5	2	3	grass														
ERHI2	<i>Erichtites hieraciifolia</i>	American burnweed	Asteraceae	5	4	2	forb														
ERAN	<i>Erigeron annuus</i>	Eastern Daisy Fleabane	Asteraceae	4	4	0	forb														
ERST3	<i>Erigeron strigosus</i>	Praiarie Fleabane	Asteraceae	5	4	1	forb														
ERAL9	<i>Erythronium albidum</i>	White Troutlily	Liliaceae	5	4	5	forb														
ERAM5	<i>Erythronium americanum</i>	Yellow Troutlily	Liliaceae	5	5	4	forb														

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EUAL13	<i>Euonymus alatus</i>	Burningbush	Celastraceae	1	5	0	shru	I			0.22										
EUAM9	<i>Euonymus americanus</i>	Bursting-heart	Celastraceae	5	3	6	shru														
EUAT5	<i>Euonymus atropurpureus</i>	Eastern Wahoo	Celastraceae	5	4	3	shru									0.68	1.93				
EUMA1	<i>Eupatoriadelphus maculatus</i>	Spotted Trumpetweed	Asteraceae	5	2	6	forb														
EUAL2	<i>Eupatorium album</i>	White Thoroughwort	Asteraceae	5	5	8	forb	T													
EUPE3	<i>Eupatorium perfoliatum</i>	Common Boneset	Asteraceae	5	2	3	forb														
EUPU10	<i>Eupatorium purpureum</i>	Purple Joepywe-weed	Asteraceae	5	3	5	forb														
EURO4	<i>Eupatorium rotundifolium</i>	Roundleaf Thoroughwort	Asteraceae	5	3	6	forb														
EUSE2	<i>Eupatorium serotinum</i>	Late-flowering Thoroughwort	Asteraceae	5	3	2	forb														
EUCO1	<i>Euphorbia corollata</i>	Flowering Spurge	Euphorbiaceae	5	5	4	forb														
EUSP	<i>Euphorbia spathulata</i>	Blunt-leaved Spurge	Euphorbiaceae	5	5	4	forb														
EUDI16	<i>Eurybia divaricata</i>	White Wood Aster	Asteraceae	5	5	5	forb														
EUGR5	<i>Euthamia graminifolia</i>	Flat-top Goldenrod	Asteraceae	5	3	2	forb														
FAGR	<i>Fagus grandifolia</i>	American Beech	Fagaceae	5	4	7	tree		15.9	7.59	5.31									6.08	
FERU2	<i>Festuca rubra</i>	Red Fescue	Poaceae	1	4	0	grass	AI													
FESU3	<i>Festuca subverticillata</i>	Nodding Fescue	Poaceae	5	4	5	grass														
FRVE	<i>Fragaria vesca</i>	Woodland Strawberry	Rosaceae	5	5	3	forb														
FRVI	<i>Fragaria virginiana</i>	Virginia Strawberry	Rosaceae	5	4	1	forb														
FRCA2	<i>Frasera caroliniensis</i>	Amercian Columbo	Gentianaceae	5	5	7	forb														
FRAM2	<i>Fraxinus americana</i>	White Ash	Oleaceae	5	4	6	tree			2.2			1.18			0.72					

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FRNI	<i>Fraxinus nigra</i>	Black Ash	Oleaceae	5	2	7	tree			0.82	1.23				4.16		1.62				
FRPE	<i>Fraxinus pennsylvanica</i>	Green Ash	Oleaceae	5	2	3	tree		11.3	5.44	8.56		13.9	5.66	31.0	13.1	2.16	12.1	5.55	9.84	8.91
GASP5	<i>Galearis spectabilis</i>	Showy Orchis	Orchidaceae	5	5	7	forb														
GAAP2	<i>Galium aparine</i>	Stickywilly	Rubiaceae	4	4	0	forb														
GAAS2	<i>Galium asprellum</i>	Rough Bedstraw	Rubiaceae	5	1	4	forb														
GABO2	<i>Galium boreale</i>	Northern Bedstraw	Rubiaceae	5	4	8	forb														
GACI2	<i>Galium circaezans</i>	Licorice Bedstraw	Rubiaceae	5	5	4	forb														
GACO3	<i>Galium concinnum</i>	Shining Bedstraw	Rubiaceae	5	5	5	forb														
GAPA3	<i>Galium palustre</i>	Common Marsh Bedstraw	Rubiaceae	5	1	9	forb	E													
GATI	<i>Galium tinctorium</i>	Marsh Bedstraw	Rubiaceae	5	1	4	forb														
GATR3	<i>Galium triflorum</i>	Fragrant Bedstraw	Rubiaceae	5	4	4	forb														
GAFR2	<i>Gaylussacia frondosa</i>	Blue Huckleberry	Ericaceae	NA	3	NA	shru														
GECA5	<i>Geranium carolinianum</i>	Carolina Geranium	Geraniaceae	5	5	3	forb														
GECA7	<i>Geum canadense</i>	White Avens	Rosaceae	5	4	2	forb														
GELA	<i>Geum laciniatum</i>	Rough Avens	Rosaceae	5	3	2	forb														
GIST5	<i>Gillenia stipulata</i>	American Ipecac	Rosaceae	5	5	6	forb														
GLHE2	<i>Glechoma hederacea</i>	Ground Ivy	Lamiaceae	1	4	0	forb														
GLTR	<i>Gleditsia triacanthos</i>	Honeylocust	Fabaceae	5	3	4	tree				2.15			8.82		1.35	5.92	7.17	50.3	4.64	
GLME2	<i>Glyceria melicaria</i>	Melic Mannagrass	Poaceae	5	1	7	grass		0.55												
GLST	<i>Glyceria striata</i>	Fowl Mannagrass	Poaceae	5	1	2	grass														

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GOPU	<i>Goodyear pubescens</i>	Downy Rattlesnake Plantain	Orchidaceae	5	5	6	forb														
HAVI2	<i>Hackelia virginiana</i>	Beggarsice	Boraginaceae	5	4	2	forb														
HEAU	<i>Helenium autumnale</i>	Common Sneezeweed	Asteraceae	5	2	4	forb														
HEDI2	<i>Helianthus divarcatus</i>	Woodland Sunflower	Asteraceae	5	5	4	forb														
HEGI	<i>Helianthus giganteus</i>	Swamp Sunflower	Asteraceae	5	2	6	forb														
HEMA3	<i>Hesperis matronalis</i>	Dames Rocket	Brassicaceae	1	5	0	forb	I													
HEAM6	<i>Heurhera americana</i>	American Alumroot	Saxifragaceae	5	5	4	forb														
HIGR3	<i>Hieracium gronovii</i>	Queendevil	Asteraceae	5	5	5	forb														
HIVE	<i>Hieracium venosum</i>	Rattlesnakeweed	Asteraceae	5	5	6	forb														
HOLA	<i>Holcus lanatus</i>	Common Velvetgrass	Poaceae	2	4	0	grass														
HOCA4	<i>Houstonia caerulea</i>	Bluets, Quaker Ladies	Rubiaceae	5	4	3	forb														
HOCA5	<i>Houstonia canadensis</i>	Canadian Summer Bluet	Rubiaceae	5	5	6	forb														
HULU	<i>Humulus lupulus</i>	Common Hop	Cannabaceae	4	4	2	vine				0.3						1.48				
HYAR	<i>Hydrangea arborescens</i>	Wild Hydrangea	Hydrangeaceae	5	4	7	shru														
HYCA	<i>Hydrastis canadensis</i>	Goldenseal	Ranunculaceae	5	5	7	forb														
HYVI	<i>Hydrophyllum virginianum</i>	Eastern Waterleaf	Hydrophylleaceae	5	3	4	forb														
HYHY	<i>Hypericum hypericoides</i>	St. Andrews Cross	Clusiaceae	5	5	6	shru														
HYMA2	<i>Hypericum majus</i>	Large St. Johnswort	Clusiaceae	5	2	6	forb														
HYMU	<i>Hypericum muticum</i>	Dwarf St. Johnswort	Clusiaceae	5	2	3	forb														
HYPR	<i>Hypericum prolificum</i>	Shrubby St. Johnswort	Clusiaceae	5	4	3	shru		3.93	2.47	4.86		3.29	61.9	5.47	0.67	22.1	5.58	18.1	10.7	38.5

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HYPU	<i>Hypericum punctatum</i>	Spotted St. Johnswort	Clusiaceae	5	3	2	forb														
HYSP2	<i>Hypericum sphaerocarpum</i>	Roundseed St. JohnsWort	Clusiaceae	5	4	6	forb														
HYHI2	<i>Hypoxis hirsuta</i>	Yellow Stargrass	Liliaceae	5	3	6	forb														
IMCA	<i>Impatiens capensis</i>	Jewelweed	Balsaminaceae	5	2	2	forb														
IMPA	<i>Impatiens pallida</i>	Pale Touch-me-not	Balsaminaceae	5	2	3	forb														
IPLA	<i>Ipomoea lacunosa</i>	Whitestar	Convolvulaceae	5	2	4	forb														
IPPA	<i>Ipomoea pandurata</i>	Wild Potato Vine	Convolvulaceae	5	4	2	forb														
JUNI	<i>Juglans nigra</i>	Black Walnut	Juglandaceae	5	4	5	tree		11.7	0.46	5.97			6.34		17.5	12.9			3.02	
JUAC	<i>Juncus acuminatus</i>	Sharpruited Rush	Juncaceae	5	1	4	forb														
JUBU	<i>Juncus bufonius</i>	Toad Rush	Juncaceae	5	2	2	forb														
JUDU2	<i>Juncus dudleyi</i>	Dudley's Rush	Juncaceae	5	2	3	forb														
JUEF	<i>Juncus effusus</i>	Common Rush	Juncaceae	5	2	1	forb														
JUSE	<i>Juncus secundus</i>	Lopsided Rush	Juncaceae	5	4	5	forb	PT													
JUTE	<i>Juncus tenuis</i>	Poverty Rush	Juncaceae	5	3	1	forb														
JUVI	<i>Juniperus virginiana</i>	Eastern Redcedar	Cupressaceae	5	4	3	tree		1.02	0.86	1.05		4.17	2.59	4.52	1.14			5.92	1.53	28.1
KRBI	<i>Krigia biflora</i>	TwoFlower DwarfDandelion	Asteraceae	5	4	5	forb														
KRDA	<i>Krigia dandelion</i>	Potato DwarfDandelion	Asteraceae	5	3	8	forb	T													
LAPU2	<i>Lamium purpureum</i>	Purple Deadnettle	Lamiaceae	1	5	0	forb														
LACA3	<i>Laportea canadensis</i>	Canadian Woodnettle	Urticaceae	5	2	5	forb														
LEOR	<i>Leersia oryzoides</i>	Rice-cutgrass	Poaceae	5	1	1	grass														

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LEVI2	<i>Leersia virginica</i>	Whitegrass	Poaceae	5	2	4	grass														
LECA5	<i>Lepidium campestre</i>	Field Pepperweed	Brassicaceae	1	5	0	forb	AI													
LECA8	<i>Lespedeza capitata</i>	Roundhead Lespedeza	Fabaceae	5	5	5	forb														
LECU	<i>Lespedeza cuneata</i>	Sericea Lespedeza	Fabaceae	1	5	0	forb														
LEHI2	<i>Lespedeza hirta</i>	Hairy Lespedeza	Fabaceae	5	5	5	forb														
LEPR	<i>Lespedeza procumbens</i>	Trailing Lespedeza	Fabaceae	5	5	5	forb														
LERE2	<i>Lespedeza repens</i>	Creeping Lespedeza	Fabaceae	5	5	6	forb														
LEVI6	<i>Lespedeza violacea</i>	Violet Lespedeza	Fabaceae	5	5	4	forb														
LEVI7	<i>Lespedeza virginica</i>	Slender Lespedeza	Fabaceae	5	5	3	forb														
LEVU	<i>Leucanthemum vulgare</i>	Oxeye Daisy	Asteraceae	1	5	0	forb	AI													
LIAS	<i>Liatris aspera</i>	Tall Blazing Star	Asteraceae	5	5	6	forb														
LIVU	<i>Ligustrum vulgare</i>	European privet	Oleaceae	1	4	0	shru	I	1.97	0.26	0.27					0.67				4.3	
LIBE3	<i>Lindera benzoin</i>	Northern Spicebush	Lauraceae	5	2	5	shru		17.5		5.27		3.41			6.91	2.73	5.58		5.46	
LIVI	<i>Linum virginianum</i>	Woodland Flax	Linaceae	5	4	4	forb														
LILI3	<i>Liparis liliifolia</i>	Brown Widelpip Twayblade	Orchidaceae	5	5	5	forb														
LITU	<i>Liriodendron tulipifera</i>	Tuliptree	Magnoliaceae	5	4	6	tree		7.24		18.6		8.15			3.29	6.17			4.66	
LOCA2	<i>Lobelia cardinalis</i>	Cardinal Flower	Campanulaceae	5	2	5	forb														
LOIN	<i>Lobelia inflata</i>	Indian Tobacco	Campanulaceae	5	4	1	forb														
LOSI	<i>Lobelia siphilitica</i>	Great Blue Lobelia	Campanulaceae	5	2	3	forb														
LOSP	<i>Lobelia spicata</i>	Palespike Lobelia	Campanulaceae	5	3	5	forb														

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LOJA	<i>Lonicera japonica</i>	Japenese Honeysuckle	Caprifoliaceae	1	3	0	vine	I	5.2	2.08	4.97	52.1	1.47	4.25	5.98	15.7	14.8	16.1	5.28	12.3	11.9
LOMA6	<i>Lonicera maackii</i>	Bush/Amur Honeysuckle	Caprifoliaceae	1	5	0	shru	I	2.23	0.78	5.72		1.25			9.22		13.0		3.45	
LOCO6	<i>Lotus corniculatus</i>	Bird's-foot Trefoil	Fabaceae	1	5	0	forb														
LUAL2	<i>Ludwigia alternafolia</i>	Seedbox	Onagraceae	5	2	3	forb														
LUPA	<i>Ludwigia palustris</i>	Marsh Seedbox	Onagraceae	5	1	3	forb														
LUAC	<i>Luzula acuminata</i>	Hairy Woodrush	Juncaceae	5	3	6	forb														
LUBU	<i>Luzula bulbosa</i>	Bulbous Woodrush	Juncaceae	5	4	5	forb	T													
LYDE	<i>Lycopodium dendroideum</i>	Tree Groundpine	Lycopodiaceae	5	4	5	fern														
LYDI3	<i>Lycopodium digitatum</i>	Groundcedar	Lycopodiaceae	5	5	1	fern														
LYAM	<i>Lycopus americanus</i>	American Water Horehound	Lamiaceae	5	1	3	forb														
LYUN	<i>Lycopus uniflorus</i>	Northern Bugleweed	Lamiaceae	5	1	3	forb														
LYVI4	<i>Lycopus virginicus</i>	Virginia Water Horehound	Lamiaceae	5	1	3	forb														
LYCI	<i>Lysimachia ciliata</i>	Fringed Loosestrife	Primulaceae	5	2	4	forb														
LYLA	<i>Lysimachia lanceolata</i>	Lanceleaf Loosestrife	Primulaceae	5	3	6	forb														
LYNU	<i>Lysimachia nummularia</i>	Moneywort	Primulaceae	1	5	0	forb	I													
LYQU	<i>Lysimachia quadriflora</i>	Fourflower Yellow	Primulaceae	5	2	7	forb														
LYQU2	<i>Lysimachia quadrifolia</i>	Whorled Yellow Loosestrife	Primulaceae	5	5	5	forb														
MAPO	<i>Maclura pomifera</i>	Osage Orange	Moraceae	2	5	0	tree														
MARA7	<i>Maianthemum racemosum</i>	False Soloman's Seal	Liliaceae	5	5	4	forb														
MACO5	<i>Malus coronaria</i>	Sweet Crabapple	Rosaceae	5	5	3	tree				0.28							5.31			

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MEVI	<i>Medeola virginiana</i>	Indian Cucumber	Liliaceae	5	5	6	forb														
MELU	<i>Medicago lupulina</i>	Black Medic	Fabaceae	1	5	0	forb														
MENI	<i>Melica nitens</i>	Threeflower Melicgrass	Poaceae	5	5	8	grass														
MEOF	<i>Melilotus officinalis</i>	Yellow Sweetclover	Fabaceae	1	5	0	forb	I													
MECA3	<i>Menispermum canadense</i>	Canada Moonseed	Menispermaceae	5	4	5	vine		1.18		0.25					0.85					
MEPI	<i>Mentha piperita</i>	Peppermint	Lamiaceae	2	2	0	forb														
MIVI	<i>Microstegium vimineum</i>	Asian Microstegium	Poaceae	1	3	0	grass	I													
MIRI	<i>Mimulus ringens</i>	Allegheny Monkeyflower	Scrophulariaceae	5	1	4	forb														
MIRE	<i>Mitchella repens</i>	Partridgeberry	Rubiaceae	5	4	5	forb														
MIDI3	<i>Mitella diphylla</i>	Twin-leaf Mitrewort	Saxifragaceae	5	4	6	forb														
MOCL	<i>Monarda clinopodia</i>	Basil Bee-Balm	Lamiaceae	5	3	4	forb														
MOFI	<i>Monarda fistulosa</i>	Wild Bergamot	Lamiaceae	5	5	3	forb														
MORU2	<i>Morus rubra</i>	Red Mulberry	Moraceae	5	4	7	tree			0.26	0.22									0.86	
MUSO	<i>Muhlenbergia sobolifera</i>	Rock Muhly	Poaceae	5	5	8	grass														
NAPS	<i>Narcissus pseudonarcissus</i>	Daffodil	Liliaceae	3	2	0	forb														
NYSY	<i>Nyssa sylvatica</i>	Blackgum	Cornaceae	5	3	7	tree				1.99						2.06			2.37	
OEFR	<i>Oenothera fruticosa</i>	Narrowleaf Evening Primrose	Onagraceae	5	3	4	forb														
OEPI2	<i>Oenothera pilosella</i>	Meadow Evening Primrose	Onagraceae	5	3	3	forb														
ONSE	<i>Onoclea sensibilis</i>	Sensitive Fern	Dryopteridaceae	5	2	2	fern														
OPVU	<i>Ophioglossum vulgatum</i>	Southern Adderstongue	Ophioglossaceae	5	2	6	fern														

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ORVU	<i>Origanum vulgare</i>	Wild Marjorum	Lamiaceae	2	5	0	forb														
ORUM	<i>Ornithogalum umbellatum</i>	Star of Bethlehem	Liliaceae	1	4	0	forb	I													
OSLO	<i>Osmorhiza longistylis</i>	Longstyle Aniseroot	Apiaceae	5	4	4	forb														
OSCI	<i>Osmunda cinnamomea</i>	Cinnamon Fern	Osmundaceae	5	2	6	fern														
OXGR	<i>Oxalis grandis</i>	Great Yellow Woodsorrel	Oxalidaceae	5	5	7	forb														
OXST	<i>Oxalis stricta</i>	Common Yellow Oxalis	Oxalidaceae	4	5	0	forb														
OXVI	<i>Oxalis violacea</i>	Violet Woodsorrel	Oxalidaceae	5	5	6	forb														
OXAR	<i>Oxydendrum arboreum</i>	Sourwood	Ericaceae	5	5	7	tree			0.96	0.45									0.79	
PAAN6	<i>Packera anonyma</i>	Small's Ragwort	Asteraceae	5	5	2	forb														
PAAU3	<i>Packera aurea</i>	Golden Ragwort	Asteraceae	5	2	4	forb														
PAGL17	<i>Packera glabella</i>	Butterweed	Asteraceae	1	1	0	forb	AI													
PAPA20	<i>Packera paupercula</i>	Balsam Groudsel	Asteraceae	5	3	9	forb	T													
PAQU	<i>Panax quinquefolius</i>	American Ginseng	Araliaceae	5	5	6	forb														
PAAN	<i>Panicum anceps</i>	Beaked Panicgrass	Poaceae	5	3	3	grass														
PAVI2	<i>Panicum virgatum</i>	Switchgrass	Poaceae	5	3	4	grass														
PACA11	<i>Paronychia canadensis</i>	Smooth Forked Nailwort	Caryophyllaceae	5	5	5	forb														
PAQU2	<i>Parthenocissus quinquefolia</i>	Virgina Creeper	Vitaceae	5	4	2	vine		5.35	0.77	4.52		1.02		4.55	7.31	3.15	12.4		6.25	
PAPU5	<i>Paspalum pubiflorum</i>	Hairyseed Paspalum	Poaceae	5	3	3	grass														
PATO2	<i>Paulownia tomentosa</i>	Princesstree	Scrophulariaceae	1	5	0	tree														
PEDI	<i>Penstemon digitalis</i>	Foxglove Beardtongue	Scrophulariaceae	5	2	3	forb														

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PESE6	<i>Penthorum sedoides</i>	Dtich Stonecrop	Crassulaceae	5	2	2	forb														
PHPU3	<i>Phacelia purshii</i>	Miami Mist	Hydrophyllaceae	5	5	4	forb														
PHHE11	<i>Phegopteris hexagonoptera</i>	Broad Beechfern	Thelypteridaceae	5	3	7	fern														
PHPR3	<i>Phleum pratense</i>	Timothy	Poaceae	1	4	0	grass														
PHDI5	<i>Phlox divaricata</i>	Wild Blue Phlox	Polemoniaceae	5	4	4	forb														
PHLE5	<i>Phryma leptostachya</i>	American Lopseed	Verbenaceae	5	5	5	forb														
PHHE5	<i>Physalis heterophylla</i>	Clammy Groundcherry	Solanaceae	5	5	1	forb														
PHOP	<i>Physocarpus opulifolius</i>	Common Ninebark	Rosaceae	5	2	4	shru													0.86	
PHAM4	<i>Phytolacca americana</i>	American Pokeweed	Phytolaccaceae	5	4	1	forb														
PIPU2	<i>Pilea pumila</i>	Canadian Clearweed	Urticaceae	5	2	2	forb														
PIRE	<i>Pinus resinosa</i>	Red Pine	Pinaceae	3	4	0	tree											83.9			
PIRI	<i>Pinus rigida</i>	Pitch Pine	Pinaceae	5	4	7	tree													4.71	
PIST	<i>Pinus strobus</i>	Eastern White Pine	Pinaceae	5	4	6	tree						12.1					60.0			
PIVI2	<i>Pinus virginiana</i>	Virginia Pine	Pinaceae	5	5	3	tree			2.07	1.9		58.1	37.0			3.71		24.7	14.1	63.9
PIAV	<i>Piptochaetium avenaceum</i>	Blackseed Speargrass	Poaceae	5	5	8	grass	E													
PLLA	<i>Plantago lanceolata</i>	Narrowleaf Plantain	Plantaginaceae	1	5	0	forb														
PLRU	<i>Plantago rugelii</i>	Rugel's Plantain	Plantaginaceae	2	4	0	forb														
PLVI	<i>Plantago virginica</i>	Virginia Plantain	Plantaginaceae	5	5	1	forb														
PLLA2	<i>Platanthera lacera</i>	Green Fringed Orchid	Orchidaceae	5	2	3	forb														
PLOC	<i>Platanus occidentalis</i>	American Sycamore	Platanaceae	5	2	7	tree		18.6	0.3	4.95				9.63	32.8	19.2		36.4	5.56	

LIST OF VASCULAR PLANT SPECIES FOUND WITHIN THE DOE PORTS STUDY AREA DURING THE 2011 AND 2012 GROWING SEASONS

									Importance Value by Vegetated Habitat Type												
Field Code	Taxon	Common Name	Family	NATIVITY	WETLAND INDEX	C of C	FORM	Special Status	BLHF	Mature Oak-Hickory Forest	Mixed Mesic Forest	Mowed Maintained	Native Pine	Oldfield - Successional	Palustrine Emergent Wetland	Palustrine Forested Wetland	Palustrine Shrub-Scrub Wetland	Planted Pine	Ruderal Successional	Successional Forest	Successional Scrub
POPA2	<i>Poa palustris</i>	Fowl Bluegrass	Poaceae	5	2	5	grass														
POPR	<i>Poa pratensis</i>	Kentucky Bluegrass	Poaceae	3	4	0	grass														
POTR2	<i>Poa trivialis</i>	Rough Bluegrass	Poaceae	1	2	0	grass														
POPE	<i>Podophyllum peltatum</i>	Mayapple	Berberidaceae	5	4	4	forb														
PORE2	<i>Polemonium reptans</i>	Greek Valerian	Polemoniaceae	5	4	5	forb														
POIN4	<i>Polygala incarnata</i>	Procession Flower	Polygalaceae	5	5	6	forb	E													
POSA3	<i>Polygala sanguinea</i>	Purple Milkwort	Polygalaceae	5	4	2	forb														
POBI2	<i>Polygonatum biflorum</i>	Smooth Solomon's Seal	Liliaceae	5	4	4	forb														
POPU4	<i>Polygonatum pubescens</i>	Hairy Solomon's Seal	Liliaceae	5	5	5	forb														
POAM8	<i>Polygonum amphibium</i>	Water Knotweed	Polygonaceae	5	1	4	forb														
POAR6	<i>Polygonum arifolium</i>	Halberdleaf Tearthumb	Polygonaceae	5	1	4	forb														
POCO1	<i>Polygonum convolvulus</i>	Black Bindweed	Polygonaceae	1	4	0	vine														
POHY	<i>Polygonum hydropiper</i>	Water-pepper	Polygonaceae	5	1	1	forb														
POHY2	<i>Polygonum hydropiperoides</i>	Swamp Smartweed	Polygonaceae	5	1	6	forb														
POLA4	<i>Polygonum lapathifolium</i>	Curlytop Knotweed	Polygonaceae	5	2	1	forb														
POPE2	<i>Polygonum pensylvanicum</i>	Pennsylvania Smartweed	Polygonaceae	4	2	0	forb														
POPE3	<i>Polygonum persicaria</i>	Spotted ladysthumb	Polygonaceae	1	2	0	forb														
POPU5	<i>Polygonum punctatum</i>	Dotted Water-pepper	Polygonaceae	5	1	6	forb														
POSA5	<i>Polygonum sagittatum</i>	Arrowleaf Tearthumb	Polygonaceae	5	1	2	forb														
POSC3	<i>Polygonum scandens</i>	Climbing False Buckwheat	Polygonaceae	5	3	2	vine		0.49												

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POVI2	<i>Polygonum virginianum</i>	Virginia Jumpseed	Polygonaceae	5	3	3	forb														
POCA11	<i>Polymnia canadensis</i>	Whiteflower Leafcup	Asteraceae	5	5	5	forb														
POAC4	<i>Polystichum acrostichoides</i>	Christmas Fern	Dryopteraceae	5	5	3	fern														
PODE3	<i>Populus deltoides</i>	Eastern Cottonwood	Salicaceae	5	3	3	tree		1.93						21.9	10.9	1.6				
POTR5	<i>Populus tremuloides</i>	Quaking Aspen	Salicaceae	5	4	2	tree				0.29										
PONA4	<i>Potamogeton natans</i>	Common Pondweed	Potomogetonace	5	1	8	forb	PT													
POAR8	<i>Potentilla argentea</i>	Silver Cinquefoil	Asteraceae	1	5	0	forb														
POSI2	<i>Potentilla simplex</i>	Common Cinquefoil	Rosaceae	5	5	1	forb														
PRAL2	<i>Prenanthes alba</i>	White Lettuce	Asteraceae	5	4	5	forb														
PRAL3	<i>Prenanthes altissima</i>	Tall Rattlesnakeroot	Asteraceae	5	5	4	forb														
PRSE	<i>Prenanthes serpentaria</i>	Cankerweed	Asteraceae	5	5	5	forb								3.87						
PRVU	<i>Prunella vulgaris</i>	Common Selfheal	Lamiaceae	4	4	0	forb									0.78					
PRSE2	<i>Prunus serotina</i>	Wild Black Cherry	Rosaceae	5	4	3	tree		8.82	3.12	11.9		1.02		4.52	1.93	11.8	5.58	6.57	11.6	7.41
PYTE	<i>Pycnanthemum tenuifolium</i>	Narrowleaf Mountainmint	Lamiaceae	5	2	4	forb														
PYVI	<i>Pycnanthemum virginianum</i>	Virginia Mountainmint	Lamiaceae	5	3	4	forb														
PYAM	<i>Pyrola americana</i>	American Wintergreen	Pyrolaceae	5	3	7	forb														
PYEL	<i>Pyrola elliptica</i>	Waxflower shinleaf	Pyrolaceae	5	5	7	forb														
QUAL	<i>Quercus alba</i>	White Oak	Fagaceae	5	5	6	tree		1.88	48.2	7.55		10.8	3.42						2.17	4.69
QUCO2	<i>Quercus coccinea</i>	Scarlet Oak	Fagaceae	5	5	6	tree			6.03	1.38		5.25								
QUIM	<i>Quercus imbricaria</i>	Shingle Oak	Fagaceae	5	3	5	tree		1.91	0.86	3.66		3.27	6.06		1.89	19.3		14.3	2.95	4.69

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QUMA3	<i>Quercus marilandica</i>	Blackjack Oak	Fagaceae	5	5	8	tree	PT		15.0	2.84		11.6	4.73						4.95	6.89
QUMI	<i>Quercus michauxii</i>	Swamp Chestnut Oak	Fagaceae	NA	2	NA	tree														
QUMU	<i>Quercus muehlenbergii</i>	Chinkapin Oak	Fagaceae	5	5	7	tree		0.65	0.26	0.37					0.76				5.54	
QUPA2	<i>Quercus palustris</i>	Pin Oak	Fagaceae	5	2	5	tree		0.92												
QUPR2	<i>Quercus prinus</i>	Chestnut Oak	Fagaceae	5	5	7	tree			13.2			6.28								
QURU	<i>Quercus rubra</i>	Northern Red Oak	Fagaceae	5	5	6	tree		3.25	13.3	2.94		4.11							2.67	5.79
QUST	<i>Quercus stellata</i>	Post Oak	Fagaceae	5	5	7	tree			5.94	1.74		5.32	2.55			1.76		7.77		7.52
QUTR	<i>Quercus tridentata</i>	<i>Proposed Species</i>	Fagaceae	5	4	NA	tree		0.79		0.22										
QUVE	<i>Quercus velutina</i>	Black Oak	Fagaceae	5	5	7	tree		5.19	18.4	3.8		7.15							1.56	
RHCO	<i>Rhus copallinum</i>	Winged Sumac	Anacardiaceae	5	5	4	shru							10.5					5.85		27.2
RHGL	<i>Rhus glabra</i>	Smooth Sumac	Anacardiaceae	5	5	2	shru										2.99				
RICY	<i>Ribes cynosbati</i>	Eastern Prickly Gooseberry	Grossulariaceae	5	5	3	shru														
ROPS	<i>Robinia psuedoacacia</i>	Black Locust	Fabaceae	4	5	0	tree			0.34	1.35			4.53		0.88	7.09			7.59	6.13
ROBL	<i>Rosa blanda</i>	Smooth Rose	Rosaceae	5	4	4	shru	PT	0.49	0.35		15.04									
ROCA4	<i>Rosa carolina</i>	Carolina Rose	Rosaceae	5	5	4	shru														
ROMU	<i>Rosa multiflora</i>	Multifloral Rose	Rosaceae	1	4	0	shru	I	36.3	3.43	25.0	15.8	3.52	17.7	28.1	42.9	10.9	5.58	9.79	21.8	5.73
ROPA	<i>Rosa palustris</i>	Swamp Rose	Rosaceae	5	1	5	shru							2.1	5.4				15.2		
ROSE2	<i>Rosa setigera</i>	Climbing Rose	Rosaceae	5	4	4	shru										4.46				
RUAL	<i>Rubus allegheniensis</i>	Allegheny Blackberry	Rosaceae	4	5	1	shru		3.81	11.5	6.72	52.1	7.82	11.2	7.44	2.3	14.7	6.81		9.82	23.4
RUFL	<i>Rubus flagellaris</i>	Northern Dewberry	Rosaceae	5	5	1	shru			1.08	1.06									1.5	

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RUHI	<i>Rubus hispidus</i>	Bristly Dewberry	Rosaceae	5	2	5	forb														
RUOC	<i>Rubus occidentalis</i>	Black Raspberry	Rosaceae	5	5	1	shru		1.54	0.38	1.55			2.29	3.87	1.88				3.48	
RUPE3	<i>Rubus pensilvanicus</i>	Pennsylvania Blackberry	Rosaceae	5	4	1	shru				0.55									1.51	
RUHI2	<i>Rudbeckia hirta</i>	Black-eyed Susan	Asteraceae	5	5	1	forb														
RULA3	<i>Rudbeckia lacinata</i>	Cutleaf Coneflower	Asteraceae	5	2	6	forb														
RUCA4	<i>Ruellia caroliniensis</i>	Carolina Wild Petunia	Acanthaceae	5	5	4	forb														
RUST2	<i>Ruellia strepens</i>	Limestone Wild Petunia	Acanthaceae	5	3	5	forb														
RUAC3	<i>Rumex acetosella</i>	Common Sheep Sorrel	Polygonaceae	1	5	0	forb														
SACA5	<i>Salix caroliniana</i>	Coastal Plain Willow	Salicaceae	5	1	10	shru	PT								0.89					
SADI	<i>Salix discolor</i>	Pussy Willow	Salicaceae	5	2	3	shru														
SAIN3	<i>Salix interior</i>	Sandbar Willow	Salicaceae	5	1	1	shru							2.24	86.8	0.71	9.34		24.9		
SANI	<i>Salix nigra</i>	Black Willow	Salicaceae	5	2	2	tree														
SASE	<i>Salix sericea</i>	Silky Willow	Salicaceae	5	1	4	shru										16.9		17.0		
SALY2	<i>Salvia lyrata</i>	Lyreleaf Sage	Labiaceae	5	5	3	forb														
SANI4	<i>Sambucus nigra</i>	Common Elderberry	Caprifoliaceae	5	2	3	shru		2.33					2.38		0.71		6.19		0.86	
SACA13	<i>Sanguinaria canadensis</i>	Bloodroot	Papaveraceae	5	5	5	forb														
SACA15	<i>Sanicula canadensis</i>	Canadian Blacksnakeroot	Apiaceae	5	5	3	forb														
SAMA2	<i>Sanicula marilandica</i>	Maryland Sanicle	Apiaceae	5	5	3	forb														
SATR4	<i>Sanicula trifoliata</i>	Largefruit Blacksnakeroot	Apiaceae	5	5	3	forb														
SAAL5	<i>Sassafras albidum</i>	Sassafras	Lauraceae	5	5	3	tree		1.44	9.21	12.0		15.2		14.8	0.76	4.43			7.9	

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SACE	<i>Saururus cernuus</i>	Lizard's Tail	Saururaceae	5	1	8	forb														
SCPU13	<i>Schoenoplectus purshianus</i>	Weakstalk bulrush	Cyperaceae	5	1	6	sedg														
SCTA2	<i>Schoenoplectus</i>	Softstem Bulrush	Cyperaceae	5	1	2	sedg														
SCAT2	<i>Scirpus atrovirens</i>	Green Bulrush	Cyperaceae	5	1	1	sedg														
SCCY	<i>Scirpus cyperinus</i>	Woolgrass	Cyperaceae	5	2	1	sedg														
SCMA2	<i>Scrophularia marilandica</i>	Carpenter's Square	Scrophulariaceae	5	5	4	forb														
SCEL	<i>Scutellaria elliptica</i>	Hairy Skullcap	Lamiaceae	5	5	5	forb														
SCGA	<i>Scutellaria galericulata</i>	Marsh Skullcap	Lamiaceae	5	1	6	forb														
SCIN	<i>Scutellaria incana</i>	Hoary Skullcap	Lamiaceae	5	5	4	forb														
SCIN2	<i>Scutellaria integrifolia</i>	Hyssop Skullcap	Lamiaceae	5	2	6	forb														
SCNE2	<i>Scutellaria nervosa</i>	Veiny Skullcap	Lamiaceae	5	3	6	forb														
SCPA7	<i>Scutellaria parvula</i>	Small Skullcap	Lamiaceae	5	5	6	forb														
SEVA4	<i>Securigera varia</i>	Crown Vetch	Fabaceae	1	5	0	forb	I													
SETE3	<i>Sedum ternatum</i>	Woodland Stonecrop	Crassulaceae	5	5	5	forb														
SEAS3	<i>Sericocarpus asteroides</i>	Toothed Whitetop Aster	Asteraceae	5	5	4	forb														
SEVI4	<i>Setaria viridis</i>	Green Bristlegrass	Poaceae	3	5	0	grass														
SIVI4	<i>Silene virginica</i>	Fire Pink	Caryophyllaceae	5	5	5	forb														
SIOF	<i>Sisymbrium officinale</i>	Hedgemustard	Brassicaceae	1	5	0	forb														
SIAN3	<i>Sisyrinchium angustifolium</i>	Narrowleaf Blue-Eyed Grass	Iridaceae	5	2	2	forb														
SMGL	<i>Smilax glauca</i>	Cat Greebrier	Smilacaceae	5	4	5	vine		1.04	2.38	2.49		4.77							0.94	5.21

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SMRO	<i>Smilax rotundifolia</i>	Round-leaf Greenbrier	Smilacaceae	5	3	4	vine		5.76	13.3	6.27		14.5		4.16		3.49	4.96		3.39	
SMTA2	<i>Smilax tamnoides</i>	Bristly Greenbrier	Smilacaceae	5	3	3	vine		0.52	0.63	1.15			2.18		1.49	4.54			1.81	
SOCA3	<i>Solanum carolinense</i>	Carolina Horsenettle	Solanaceae	1	5	0	forb														
SOAL6	<i>Solidago altissima</i>	Tall Goldenrod	Asteraceae	5	5	1	forb														
SOCA4	<i>Solidago caesia</i>	Wreath Goldenrod	Asteraceae	5	4	5	forb														
SOCA6	<i>Solidago canadensis</i>	Canada Goldenrod	Asteraceae	5	4	1	forb														
SOGI	<i>Solidago gigantea</i>	Giant Goldenrod	Asteraceae	5	2	3	forb														
SOHI	<i>Solidago hispida</i>	Hairy Goldenrod	Asteraceae	5	5	4	forb														
SOJU	<i>Solidago juncea</i>	Early Goldenrod	Asteraceae	5	5	2	forb														
SONE	<i>Solidago nemoralis</i>	Gray Goldenrod	Asteraceae	5	5	2	forb														
SOOD	<i>Solidago odora</i>	Aniscented Goldenrod	Asteraceae	5	5	8	forb	T													
SOUL	<i>Solidago uliginosa</i>	Bog Goldenrod	Asteraceae	5	1	9	forb														
SOAS	<i>Sonchus asper</i>	Spiny Sowthistle	Asteraceae	1	5	0	forb														
SONU2	<i>Sorghastrum nutans</i>	Indiangrass	Poaceae	5	5	5	grass														
SOHA	<i>Sorghum halepense</i>	Johnsongrass	Poaceae	1	4	0	grass	I													
SPAM	<i>Sparganium americanum</i>	American Bur-reed	Sparganiaceae	5	1	6	forb														
SPEU	<i>Sparganium eurycarpum</i>	Broadfruit Bur-reed	Sparganiaceae	5	1	4	forb														
SPTO2	<i>Spiraea tomentosa</i>	Steeplebush	Rosaceae	5	2	4	shru														
SPCE	<i>Spiranthes cernua</i>	Nodding Lady's Tresses	Orchidaceae	5	2	4	forb														
SPVE	<i>Spiranthes vernalis</i>	Spring's Lady's Tresses	Orchidaceae	5	3	7	forb														

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STGR	<i>Stellaria graminea</i>	Grass-like Starwort	Caryophyllaceae	1	5	0	forb														
STME2	<i>Stellaria media</i>	Common Chickweed	Caryophyllaceae	1	5	0	forb														
STPU	<i>Stellaria pubera</i>	Star Chickweed	Caryophyllaceae	5	5	5	forb														
STSE3	<i>Stipulicida setacea</i>	Pineland Scalypink	Caryophyllaceae	NA	3	NA	forb														
STPE15	<i>Stuckenia pectinata</i>	Fennel-leaved Pondweed	Potomogetonace	5	1	2	forb														
STBI2	<i>Stylosanthes biflora</i>	Sidebeak Pencilflower	Fabaceae	5	5	3	forb														
SYCO4	<i>Symphyotrichum cordifolium</i>	Common Blue Wood Aster	Asteraceae	5	5	4	forb														
SYER	<i>Symphyotrichum ericoides</i>	White Heath Aster	Asteraceae	5	4	2	forb														
SYLA4	<i>Symphyotrichum lateriflorum</i>	Calico Aster	Asteraceae	5	2	2	forb														
SYLO2	<i>Symphyotrichum lowrieanum</i>	Lowery's Blue Wood Aster	Asteraceae	5	5	6	forb														
SYNO2	<i>Symphyotrichum novae-</i>	New England Aster	Asteraceae	5	2	2	forb														
SYPI2	<i>Symphyotrichum pilosum</i>	Hairy White Oldfield Aster	Asteraceae	5	5	1	forb														
SYPR6	<i>Symphyotrichum</i>	Crookedstem Aster	Asteraceae	5	3	4	forb														
SYPU	<i>Symphyotrichum puniceum</i>	Purple-stem Aster	Asteraceae	5	1	7	forb														
TAOF	<i>Taraxacum officinale</i>	Common Dandelion	Asteraceae	5	5	0	forb														
TECA3	<i>Teucrium canadense</i>	American Germander	Lamiaceae	2	2	3	forb														
THPU2	<i>Thalictrum pubescens</i>	King of the Meadow	Ranunuculaceae	5	2	5	forb														
THTH2	<i>Thalictrum thalictroides</i>	Rue Anemone	Ranunuculaceae	5	5	6	forb														
THNO	<i>Thelypteris novaboracensis</i>	New York Fern	Thelypteridaceae	5	3	4	fern														
TIAM	<i>Tilia americana</i>	American Basswood	Tiliaceae	5	4	6	tree			0.26											

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TIAMH	<i>Tilia americana</i> var.	White Basswood	Tiliaceae	5	4	6	tree				0.26										
TORA2	<i>Toxicodendron radicans</i>	Poison Ivy	Anacardiaceae	5	3	1	vine		5.23	1.55	2.54		5.33	2.51	6.13	8.73	5.05			4.59	
TOVE	<i>Toxicodendron vernix</i>	Poison Sumac	Anacardiaceae	5	1	7	shru														
TRDU	<i>Tragopogon dubius</i>	Yellow Salisify	Asteraceae	1	5	0	forb														
TROH	<i>Transcantia ohiensis</i>	Ohio Spiderwort	Commelinaceae	5	3	5	forb														
TRFL2	<i>Tridens flavus</i>	Purpletop Tridens	Poaceae	5	4	1	grass														
TRCA5	<i>Trifolium campestre</i>	Field Clover	Fabaceae	1	5	0	forb														
TRDU2	<i>Trifolium dubium</i>	Least Hop Clover	Fabaceae	1	5	0	forb														
TRPR2	<i>Trifolium pratense</i>	Red Clover	Fabaceae	1	5	0	forb														
TRRE3	<i>Trifolium repens</i>	White clover	Fabaceae	1	5	0	forb														
TRGR4	<i>Trillium grandiflorum</i>	White Trillium	Liliaceae	5	5	5	forb														
TRPE4	<i>Triodanis perfoliata</i>	Clasping Venus' Looking-glass	Campanulaceae	5	3	2	forb														
TYAN	<i>Typha angustifolia</i>	Narrowleaf Cattail	Typhaceae	1	1	0	forb	I													
TYLA	<i>Typha latifolia</i>	Broadleaf Cattail	Typhaceae	5	1	1	forb														
ULAM	<i>Ulmus americana</i>	American Elm	Ulmaceae	5	2	2	tree		2.45	0.26	2.73				3.87	4.85	15.7			5.45	
ULRU	<i>Ulmus rubra</i>	Slippery Elm	Ulmaceae	5	3	3	tree		6.11	0.26	4.28					2.76				1.92	
URDID	<i>Urtica dioica</i> ssp. <i>dioica</i>	Stinging Nettle	Urticaceae	1	4	0	forb														
URDIG	<i>Urtica dioica</i> ssp. <i>gracilis</i>	Tall Nettle	Urticaceae	5	3	1	forb														
UVGR	<i>Uvularia grandiflora</i>	Largeflower Bellwort	Liliaceae	5	5	5	forb														
UVPE	<i>Uvularia perfoliata</i>	Perfoliate Bellwort	Liliaceae	5	4	5	forb														

LIST OF VASCULAR PLANT SPECIES FOUND WITHIN THE DOE PORTS STUDY AREA DURING THE 2011 AND 2012 GROWING SEASONS

									Importance Value by Vegetated Habitat Type												
Field Code	Taxon	Common Name	Family	NATIVITY	WETLAND INDEX	C of C	FORM	Special Status	BLHF	Mature Oak-Hickory Forest	Mixed Mesic Forest	Mowed Maintained	Native Pine	Oldfield - Successional	Palustrine Emergent Wetland	Palustrine Forested Wetland	Palustrine Shrub-Scrub Wetland	Planted Pine	Ruderal Successional	Successional Forest	Successional Scrub
UVSE	<i>Uvularia sessilifolia</i>	Sessileleaf Bellwort	Liliaceae	5	5	5	forb														
VACO	<i>Vaccinium corymbosum</i>	High-bush Blueberry	Ericaceae	5	2	6	shru		0.52	0.48											
VAPA4	<i>Vaccinium pallidum</i>	Blue Ridge Blueberry	Ericaceae	5	5	6	shru			8.2			16.0							1.6	
VAST	<i>Vaccinium stamineum</i>	Deerberry	Ericaceae	5	5	6	shru			6.17			6.04	2.29							
VARA	<i>Valerianella radiata</i>	Beaked Cornsalad	Valerianaceae	4	3	0	forb														
VETH	<i>Verbascum thapsus</i>	Common Mullein	Scrophulariaceae	1	5	0	forb														
VEHA2	<i>Verbena hastata</i>	Swamp Vervain	Verbenaceae	5	2	4	forb														
VEUR	<i>Verbena urticifolia</i>	White Vervain	Verbenaceae	5	4	3	forb														
VEAL	<i>Verbesina alternifolia</i>	Wingstem	Asteraceae	5	3	5	forb														
VEGI	<i>Vernonia gigantea</i>	Giant Ironweed	Asteraceae	5	3	2	forb														
VEOF2	<i>Veronica officinalis</i>	Common Speedwell	Scrophulariaceae	1	5	0	forb														
VIDE	<i>Viburnum dentatum</i>	Southern Arrowwood	Caprifoliaceae	5	3	2	shru			0.26	0.47								16.7	3.61	
VIPR	<i>Viburnum prunifolium</i>	Blackhaw	Caprifoliaceae	5	4	4	shru		2.19	0.3	1.99					4.03	4.75				
VIRE7	<i>Viburnum recognitum</i>	Southern Arrowwood	Caprifoliaceae	5	2	2	shru														
VISA	<i>Vicia sativa</i>	Garden Vetch	Fabaceae	1	5	0	forb														
VIAR	<i>Viola arvensis</i>	European Field Pansy	Violaceae	1	5	0	forb														
VIBI	<i>Viola bicolor</i>	Field Pansy	Viola	5	5	2	forb														
VICA4	<i>Viola canadensis</i>	Canada White Violet	Violaceae	5	5	5	forb														
VICU	<i>Viola cucullata</i>	Marsh Violet	Violaceae	5	2	6	forb														
VIPU3	<i>Viola pubescens</i>	Downy Yellow Violet	Violaceae	5	5	4	forb														

LIST OF VASCULAR PLANT SPECIES FOUND WITHIN THE DOE PORTS STUDY AREA DURING THE 2011 AND 2012 GROWING SEASONS

									Importance Value by Vegetated Habitat Type												
Field Code	Taxon	Common Name	Family	NATIVITY	WETLAND INDEX	C of C	FORM	Special Status	BLHF	Mature Oak-Hickory Forest	Mixed Mesic Forest	Mowed Maintained	Native Pine	Oldfield - Successional	Palustrine Emergent Wetland	Palustrine Forested Wetland	Palustrine Shrub-Scrub Wetland	Planted Pine	Ruderal Successional	Successional Forest	Successional Scrub
VISA2	<i>Viola sagittata</i>	Arrowleaf Violet	Violaceae	5	2	4	forb														
VISO	<i>Viola sororia</i>	Common Blue Violet	Violaceae	5	3	1	forb														
VIST3	<i>Viola striata</i>	Striped Cream Violet	Violaceae	5	2	5	forb														
VITR2	<i>Viola triloba</i>	Three-lobed violet	Violaceae	5	2	4	forb														
VIAE	<i>Vitis aestivalis</i>	Summer Grape	Vitaceae	5	4	4	vine		1.68	1.53	3.51		3.2	2.1						3.61	
VILA8	<i>Vitis labrusca</i>	Fox Grape	Vitaceae	5	4	3	vine				0.52						1.46			1.6	
VIRI	<i>Vitis riparia</i>	Riverbank Grape	Vitaceae	5	2	3	vine		3.73	0.26	0.38	16.55			4.29	7.11	3.59			0.79	
VIVU	<i>Vitis vulpina</i>	Frost Grape	Vitaceae	5	3	3	vine			0.26	1.31					3.05		16.1		2.23	
WOAR	<i>Woodwardia areolata</i>	Netted Chainfern	Blechnaceae	5	2	6	fern														
XAST	<i>Xanthium strumarium</i>	Cocklebur	Asteraceae	4	3	0	forb														
ZIAP	<i>Zizia aptera</i>	Meadow Zizia	Apiaceae	5	3	7	forb														

Appendix D Summary of Wildlife Signs

D.1 Field-Observed Habitat Features

Of the observable features noted during field operations, researchers recorded evidence of:

- The number of holes or cavities in standing woody vegetation
- The presence of loose attached bark on mature trees
- Rocky holes, cracks, overhangs and/or crevices
- Light soil with burrows present
- Raptors perches present
- As well as any other notable features

The number of open holes or cavities occurring in standing woody vegetation was recorded in the field as: none, few, some, or many. These features provide physical nesting habitat for many of the forest-dwelling animals that potentially exist in our Eastern Deciduous Hardwood Forests. While it is often difficult to determine whether a hole or cavity is presently being utilized by an animal, many were observed with animal residents in or near the site. Birds, specifically woodpeckers, were the most common occupant of woody holes. Small mammals also utilize these habitat features for a variety of purposes.

Most of the forested plots were composed of at least a few trees that offered woody cavities for animals to use as habitat. The successional forest samples offered some or many woody holes in half of all plots, while the other half offered at least a few. In descending order of availability of woody holes offered by habitat includes: successional forest, mixed mesophytic forest, bottomland hardwood forest, oak-hickory forest, native pine forest, and palustrine forested wetland offering no cavities for habitat in 31% of all plots.

The presence of loose woody bark, particularly on species such as shagbark hickory (*Carya ovate*), white oak (*Quercus alba*), and American sycamore (*Platanus occidentalis*), provide habitat for many bat species that inhabit our hardwood forests. Bats such as the big brown bat (*Eptesicus fuscus*) and the Federally-endangered Indiana Bat (*Myotis sodalis*), seek daytime roosts under the loose bark of mature trees. Considering that 26.2% of the study area was covered by the oak-hickory forest type, many mature loose-bark trees were available for animals to find shelter and daytime roosts. In fact, the oak-hickory forests offered mature loose-bark trees in 78% of the plots surveyed. Loose-bark trees were also noted in 77% of all palustrine forested wetland plots, 75% of all bottomland hardwood forest plots, but only 47% of all mixed mesic forest plots.

Predatory raptor bird species are frequent residents within the region. While various raptor species have differing habitat requirements, many of them utilize high open branches of mature trees to scout for potential prey. These features were observed during this survey and noted for each plot. Raptor perches were most frequent in palustrine emergent wetland plots occurring 75% of the time. While most emergent wetland habitats are characterized by sparse tree cover, PORTS wetlands typically host one or more mature trees. These trees are commonly fast-growing species, such as *Populus deltoides*, and achieve considerable height. Lone mature trees found within the transition zone between habitats can provide

ideal perches for raptors.

Oak-Hickory forest, bottomland hardwood forest, and palustrine forested wetland plots each hosted conspicuous raptor perches in 61-62% of those plots surveyed. Since, these forest habitats had to demonstrate considerable openness in the understory in order to be tallied for potential raptor perches, this measure also indicates that much of the forest habitat in the study area is characterized by more open understory structure. Mixed mesic forest habitats produced raptor perch tallies in only 49% of those plots surveyed and 29% in native pine habitat.

While rocky holes, openings, or overhangs provide habitat for animal species, soil burrows are an indication of subsurface habitation. Rocky features provided potential habitat in 62.5% of all bottomland hardwood forest plots, 46% of all palustrine forested wetland plots, 29% of all successional forest plots, and less than 20% in all other habitats. Considering that the bedrock geology consisting of shale and sandstone do not typically outcrop in this region, it is not typical to find an abundance of rocky niches. Soil burrows were also quite uncommon, being found in only 17 out of 150 plots surveyed. Burrows were most observed in the mixed mesic forest habitats, however occurring in only 17% of the plots surveyed.

D.2 Field-Observed Wildlife Signs

While the primary impetus of this survey was to evaluate the vegetation of the study area to characterize the physical habitats, observation of the inhabitants of those various covers were noted. Signs of animal life observed included:

- Actual sightings of animals
- Audible calls/sounds of animals
- Physical evidence of their presence like
 - Feathers or fur
 - Corpse or bone
 - Scat or pellet
- Evidence of animal activity like
 - Scratches or chew marks
 - Dens or burrows
 - Scrape or rub
 - Trail or run

Having noted these features only in vegetation plots or in transit to the next sample point when possible, these observations do not represent a comprehensive distribution of animal species within the study area. All of the species observations are provided in Table D.1 listed chronologically. These observations were categorized after-the-fact based on the assemblage of species observed during the study. Figure D.1 illustrates the distribution of animal feature observations noted on field forms, in field notebooks, or captured using GPS. To facilitate the presentation of these observations, species were grouped by principal characteristics including:

- Amphibians (5 species, 7 occurrences)
- Reptiles (10 species, 21 occurrences)

APPENDIX D SUMMARY OF WILDLIFE SIGNS

- Game birds (5 species, 18 occurrences)
- Song birds (12 species, 16 occurrences)
- Woodpeckers (5 species, 10 occurrences)
- Raptor/Predator/Scavenger Birds (6 species, 13 occurrences)
- Insects (16 species, 22 occurrences)
- Mammals (11 species , 59 occurrences)
- Deer ticks only (5 occurrences)
- White-tailed deer only (34 occurrences)

Table D.1 List of Faunal Species Observed at PORTS

Common Name	Species Name	Life Form
American Toad	<i>Anaxyrus americanus</i>	Amphibian
Fowlers Toad	<i>Anaxyrus fowleri</i>	Amphibian
Northern Green Frog	<i>Lithobates clamitans melanota</i>	Amphibian
Northern Spring Peeper	<i>Pseudacris crucifer crucifer</i>	Amphibian
Red-spotted Newt	<i>Notophthalmus viridescens</i>	Amphibian
Canada Goose	<i>Branta canadensis</i>	Game bird
Northern Bobwhite	<i>Colinus virginianus</i>	Game bird
Ruffed Grouse	<i>Bonasa umbellus</i>	Game bird
Wild Turkey	<i>Meleagris gallopavo</i>	Game bird
Wood Duck	<i>Aix sponsa</i>	Game bird
Bee-like Robber Fly	<i>Laphria thoracica</i>	Insect
Black-legged Tick	<i>Ixodes scapularis</i>	Insect
Common Buckeye	<i>Junonia coenia</i>	Insect
Copper Underwing	<i>Amphipyra pyramidoides</i>	Insect
Eastern Hercules Beetle	<i>Dynastes tityus</i>	Insect
Ebony Jewelwing	<i>Calopteryx maculata</i>	Insect
Giant Ichneumon	<i>Megarhyssa greenei</i>	Insect
Great Spangled Fritillary	<i>Speyeria cybele</i>	Insect
Honey Bees	<i>Apis sp.</i>	Insect
Larger Empty Oak Apple Gall Wasp	<i>Amphibolips quercusinanis</i>	Insect
Monarch	<i>Danaus plexippus</i>	Insect
Protean Shieldback Katydid Nymph	<i>Atlantius testaceus</i>	Insect
Red Admiral	<i>Vanessa atalanta</i>	Insect
Spiny Oak Slug Moth	<i>Euclea delphinii</i>	Insect
Viceroy	<i>Limenitis archippus</i>	Insect
White-blotched Heterocampa	<i>Heterocampa umbrata</i>	Insect
American Beaver	<i>Castor canadensis</i>	Mammal
Coyote	<i>Canis latrans</i>	Mammal
Eastern Chipmunk	<i>Tamias striatus</i>	Mammal
Eastern Cottontail Rabbit	<i>Sylvilagus floridanus</i>	Mammal
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	Mammal

APPENDIX D SUMMARY OF WILDLIFE SIGNS

Raccoon	<i>Procyon lotor</i>	Mammal
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	Mammal
Short-tailed Shrew	<i>Blarina brevicauda</i>	Mammal
Striped Skunk	<i>Mephitis mephitis</i>	Mammal
Virginia Opossum	<i>Didelphis virginiana</i>	Mammal
White-tailed Deer	<i>Odocoileus virginianus</i>	Mammal
Belted Kingfisher	<i>Ceryle alcyon</i>	Predator Bird
Green Heron	<i>Butorides virescens</i>	Predator Bird
Barred Owl	<i>Strix varia</i>	Raptor
Broad-winged Hawk	<i>Buteo platypterus</i>	Raptor
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Raptor
Common Water Snake	<i>Nerodia sipedon sipedon</i>	Reptile
Eastern Black Kingsnake	<i>Lampropeltis getula nigra</i>	Reptile
Eastern Box Turtle	<i>Terrapene carolina carolina</i>	Reptile
Eastern Fence Lizard	<i>Sceloporus undulatus</i>	Reptile
Eastern Milksnake	<i>Lampropeltis triangulum triangulum</i>	Reptile
Eastern Spiny Softshell Turtle	<i>Apalone spinifera spinifera</i>	Reptile
Midland Smooth Softshell Turtle	<i>Apalone mutica mutica</i>	Reptile
Northern Black Racer	<i>Culuber constrictor foxii</i>	Reptile
Northern Ring-necked Snake	<i>Diadophis punctatus edwardsii</i>	Reptile
Snapping Turtle	<i>Chelydra serpentina</i>	Reptile
Turkey Vulture	<i>Cathartes aura</i>	Scavenger
Acadian Flycatcher	<i>Empidonax virescens</i>	Songbird
Black-throated Green Warbler	<i>Dendroica virens</i>	Songbird
Blue Jay	<i>Cyanocitta cristata</i>	Songbird
Cedar Waxwing	<i>Bombicilla cedrorum</i>	Songbird
Common Grackle	<i>Quiscalus quiscula</i>	Songbird
Eastern Phoebe	<i>Sayornis phoebe</i>	Songbird
Eastern Wood-pewee	<i>Contopus virens</i>	Songbird
Gray Catbird	<i>Dumetella carolinensis</i>	Songbird
Great -Crested Flycatcher	<i>Myiarchus crinitus</i>	Songbird
Red-eyed Vireo	<i>Vireo olivaceus</i>	Songbird
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Songbird
Scarlet Tanager	<i>Piranga olivacea</i>	Songbird
Downy Woodpecker	<i>Picoides pubescens</i>	Woodpecker
Hairy Woodpecker	<i>Picoides villosus</i>	Woodpecker
Northern Flicker	<i>Colaptes auratus</i>	Woodpecker
Pileated Woodpecker	<i>Dryocopus pileatus</i>	Woodpecker
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	Woodpecker

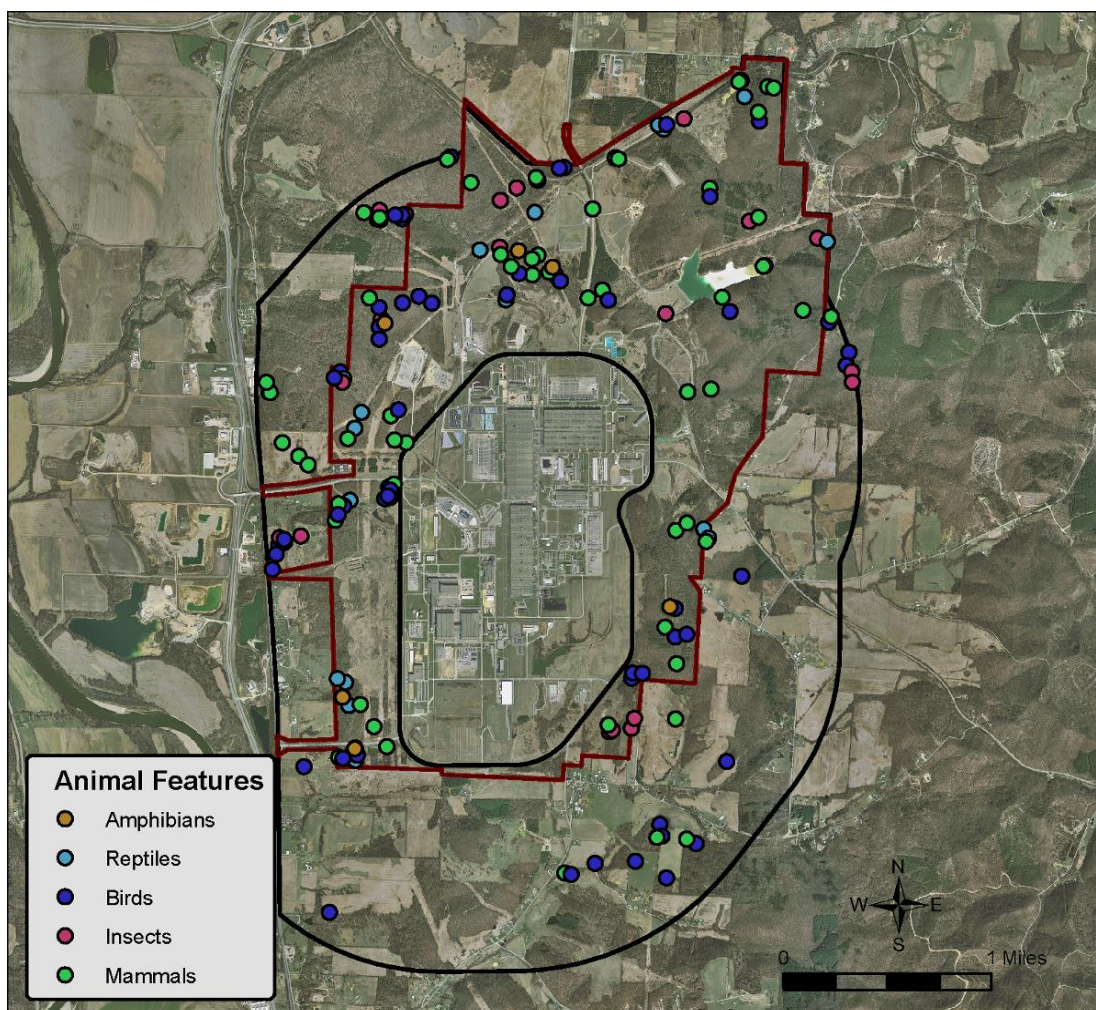


Figure D.1 Map of Observed Animal Features

D.2.1 Amphibians and Reptiles

While amphibians are mostly associated with aquatic systems, reptiles are found near aquatic environs or in dry, upland habitats (Figure D.2). In this study, numerous box turtles (*Terrapene carolina carolina*) were observed in forest habitats (Figure D.3) as lone explorers, except in one instance where a mating pair was found very near one another. Other reptiles found in the study area include the northern black racer (*Culuber constrictor foxii*), the northern ring-necked snake (*Diadophis punctatus edwardsii*) (Figure D.4), the midland smooth softshell turtle (*Apalone mutica mutica*) (Figure D.5), the eastern black kingsnake (*Lampropeltis getula nigra*) (Figure D.6), and the eastern milksnake (Figure D.7). One fairly large turtle nest was discovered with about 12 empty egg casings in the embankment of the X-230J-5 holding pond (Figure D.8). The turtle species could not be determined, but considering that snapping turtles (*Chelydra serpentina*) were the only turtles observed in other holding ponds on-site, it is assumed that the nest belongs to a snapping turtle.

While reptiles were relatively abundant throughout the study area, amphibians were less commonly encountered. The most common amphibian observed was the American toad (*Anaxyrus americanus*) and the northern green frog (*Lithobates clamitans melanota*) (Figure D.9). However, several salamanders and newts were seen along the riparian corridor of the Little Beaver Creek and scattered wetlands. The occasional northern spring peeper (*Pseudacris crucifer crucifer*) and Fowler's toad (*Anaxyrus fowleri*) (Figure D.10) were encountered on-site.

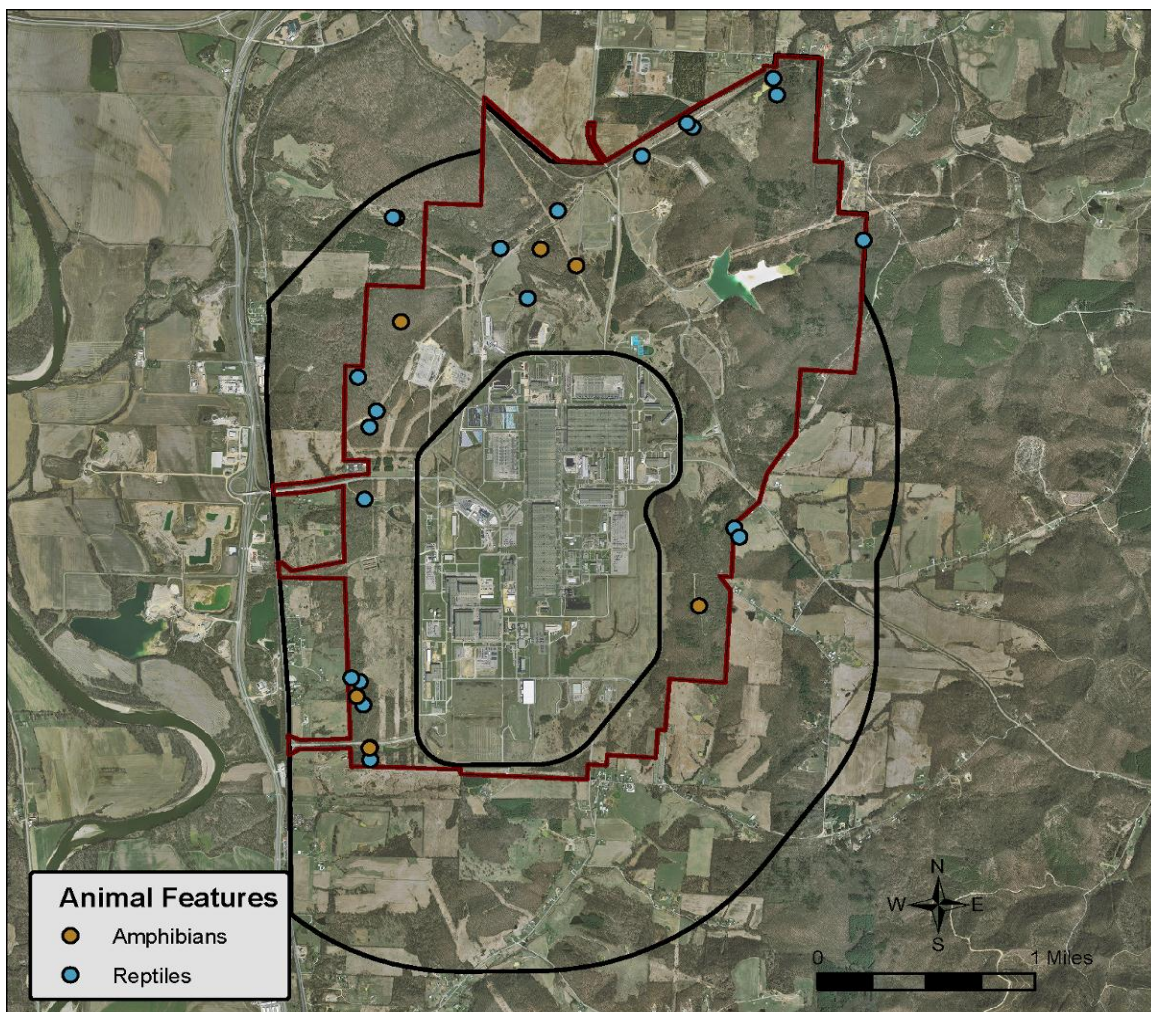


Figure D.2 Map of Observed Amphibians and Reptile Features



Figure D.3 Eastern box turtle in dry uplands



Figure D.4 Northern ring-necked snake in riparian zone of Little Beaver Creek



Figure D.5 Midland smooth softshell turtle in Little Beaver Creek

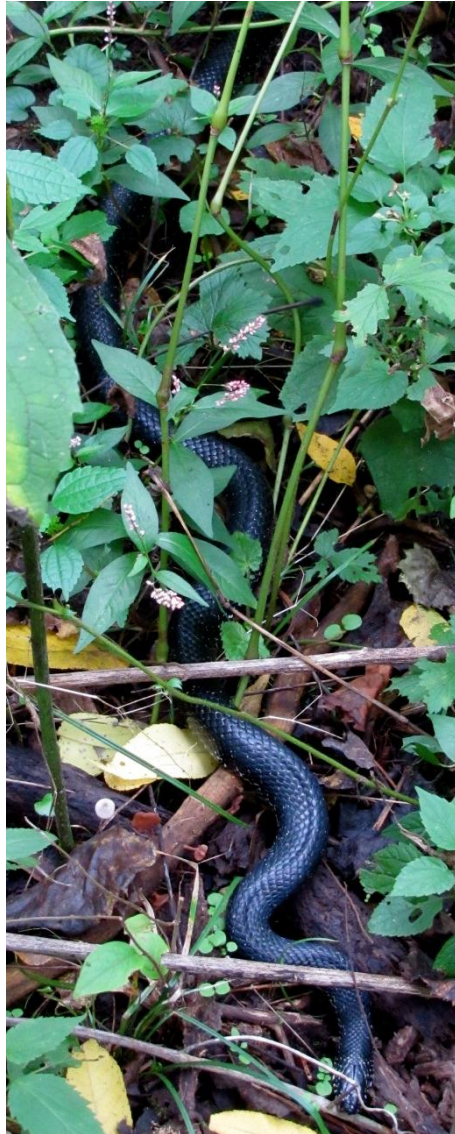


Figure D.6 Eastern black kingsnake



Figure D.7 Eastern milksnake after feeding



Figure D.8 Turtle Eggs after hatching



Figure D.9 Northern water snake facing-off with Northern green frog



Figure D.10 Fowler's toad in native pine habitat

D.2.2 Birds

Bird species were numerous throughout the study area (Figure D.11). Woodpeckers and raptors seemed to be ever-present as the study area was traversed. In the forested habitats song birds were common while signs of game birds were abundant. Pileated woodpeckers (*Dryocopus pileatus*) and wild turkey

(*Meleagris gallopavo*) were among the species most commonly encountered in the forested habitats. Some of the less commonly observed species includes green herons (*Butorides virescens*), scarlet tanager (*Piranga olivacea*), ruffed grouse (*Bonasa umbellus*), the Acadian flycatcher (*Empidonax virescens*), northern bobwhite quail (*Colinus virginianus*), and a large flock of cedar waxwings (*Bombycilla cedrorum*). Red-tailed hawks (*Buteo jamaicensis*) and broad-winged hawks (*Buteo platypterus*) were the most commonly encountered raptor species, especially utilizing perches along transitional zones

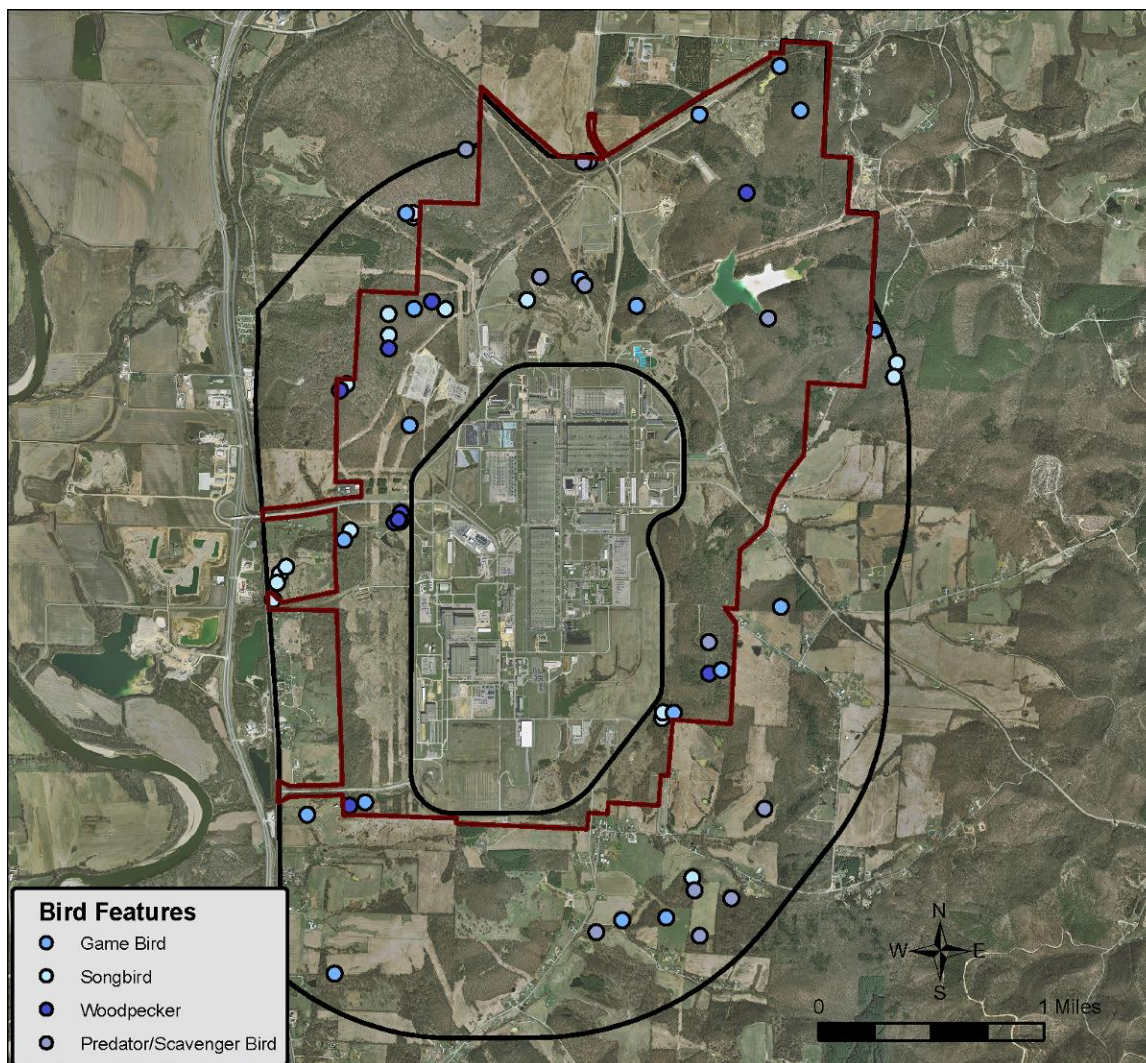


Figure D.11 Map of Bird Features

D.2.3 Insects

Many common insects were encountered during this study including mosquitoes, flies, and ticks. However, only notable insects were recorded when possible (Figure D.12). Species were recorded whenever they presented themselves long enough to be observed. Among those observed include the Eastern Hercules beetle (*Dynastes tityus*) (Figure D.13), the giant ichneumon (*Megarhyssa greenei*), the spiny oak slug moth (*Euclea delphinii*), the bee-like robber fly (*Laphria thoracica*) (Figure D.14), and the Protean shieldback katydid nymph (*Atlanticus testaceus*) (Figure D.15).

The most troublesome insect encountered during this study was the deer tick (*Ixodes scapularis*). Depending on the time of year, ticks made their presence known as a few solitary adults in the spring or fall or as masses of juveniles often less than 2mm in size, (Figure D.16) may number in the thousands

APPENDIX D SUMMARY OF WILDLIFE SIGNS

during the heat of summer. The ticks were often collected involuntarily on clothing by passing along heavily traveled deer trails or habitat edges often thick with shrubby St. Johnswort (*Hypericum prolificum*).

Ticks have been linked to at least ten known diseases in humans. According to the Center for Disease Control (CDC), deer ticks pose a risk to humans by potentially transmitting the bacterium *Borrelia burgdorferi* through the bite of infected individuals. Deer ticks require an animal host for portions of its life cycle. Larval ticks, which are not born infected, seek out small mammal and bird hosts to supply the necessary blood food source. Infection of the bacterium responsible for Lyme disease most often occurs while the larval ticks feed on these first hosts. White-footed mice are a very common host for these larval ticks. Mice previously infected by tick bites serve as a reservoir to infect subsequent ticks that feed upon them as they continue the transformation into a nymph.

The nymph remains dormant through the winter and early spring emerging in late spring to seek a larger animal host. If the nymph was not previously infected as a larva, it can become infected by feeding on the blood of an infected host. Nymphs are responsible for most of the infectious bites that cause Lyme disease in humans due to their small size and density of populations. Once engorged on blood from its host, nymphs proceed to become adults. Adult deer ticks seek out larger hosts by positioning themselves several feet off the ground. The adults often find white-tailed deer during this phase of their life cycle. Infected adults can infect deer or human hosts as they engorge themselves for laying their eggs in anticipation of the changing seasons. Eggs often drop from deer hosts in and around the areas in which deer rest, feed, and move, keeping deer ticks proximal to their primary hosts.

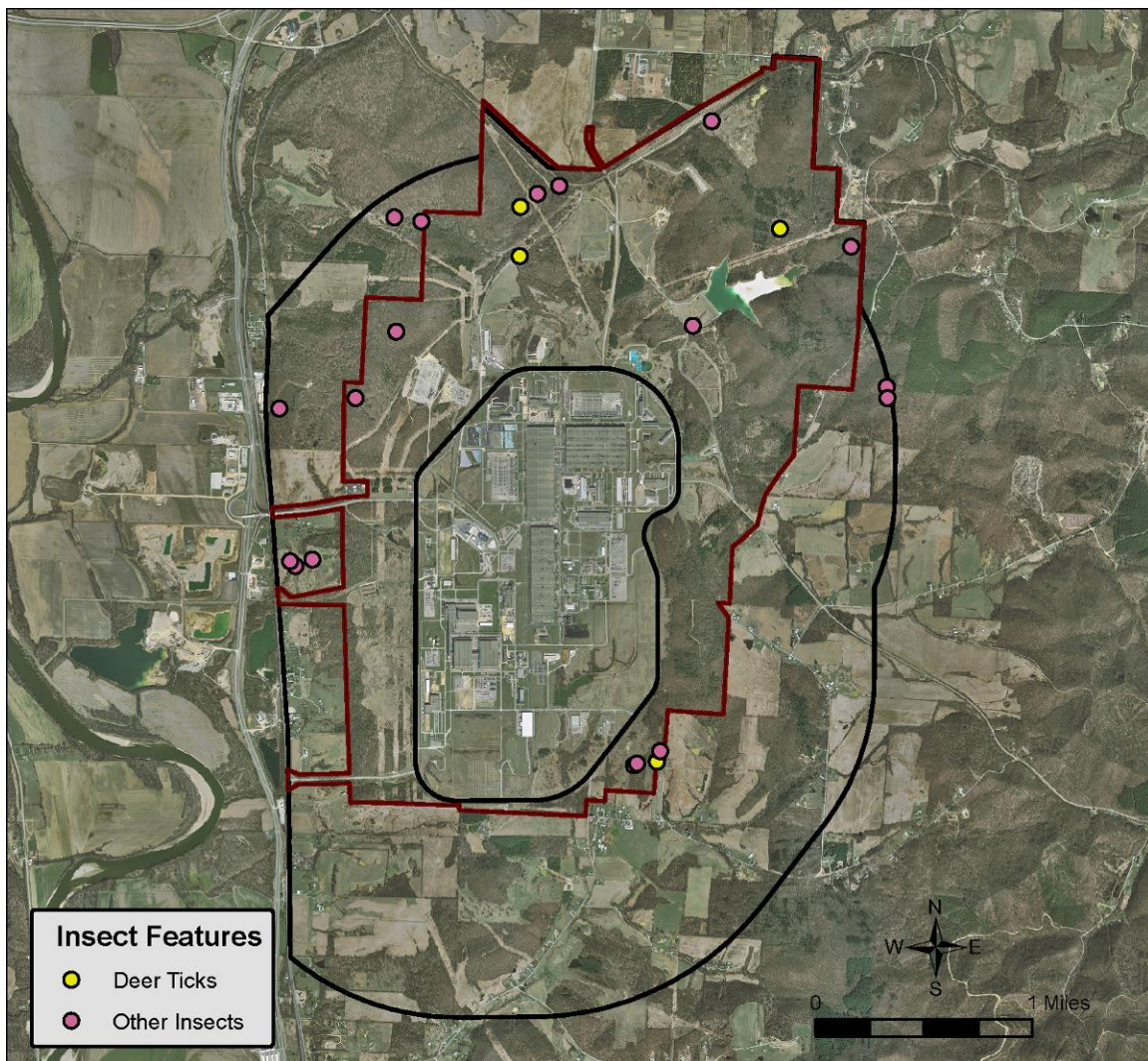


Figure D.12 Map of Observed Insect Features



Figure D.13 Hercules beetle



Figure D.14 Bee-like robber fly



Figure D.15 Protean shieldback katydid nymph



Figure D.16 Cluster of deer tick nymphs captured from clothing

D.2.4 Mammals

Mammals were not frequently encountered during this survey; however evidence of them was common among nearly all habitat types (Figure D.17). While eastern chipmunks (*Tamias striatus*), eastern gray squirrels (*Sciurus carolinensis*), and white-tailed deer (*Odocoileus virginianus*) were often observed performing their normal routines, many mammal species left behind only clues of their presence. American beaver left unmistakable evidence of their occupation of several locations in the study area. Chewed stumps, fallen logs, dragged tree tops, lodges, slides, and dams were observed where the beaver occurred such as the south shore of the X-611B sludge pond, the Little Beaver Creek (Figure D.18) east of the X-734 sanitary landfill, and within the X-2230M holding pond. Among the other mammals that left behind ample evidence to determine their presence include the coyote (*Canis latrans*) (Figure D.19), striped skunk (*Mephitis mephitis*), and the Virginia Opossum (*Didelphis virginiana*) (Figure D.20).

White-tailed deer were probably the most commonly observed animal encountered throughout the entire study area and project period. White-tailed deer exist in dense populations within the study area. Just as they are known to pose a threat by hosting deer ticks, they have been reported to impose serious safety hazards to motorists as well. Apart from sighting data, evidence of their behavior was recorded also such as heavy trails, recent beds, fresh scat, buck rubs and scrapes, vegetation browse lines, tracks, as well as bones and corpses. Of particular interest to this study was the impact deer have on the natural vegetation by browsing. Species that are unpalatable to deer, such as *Ageratina altissima* and *Hackelia virginiana*, are often left to grow in place of the many palatable species in which deer have eaten away. These species can be used to indicate areas where deer population are heavy and places that deer may frequent for shelter (Augustine and Jordan, 1998). Figure D.21 illustrates the study plots where these species have been found scaled by their relative importance value within the plot. Note that dominance of these species most often occurs in plots near a major habitat edge, disturbed areas, and open-field food sources. These species are likely correlated spatially with road strikes and could be used to determine the habit of the resident deer population.

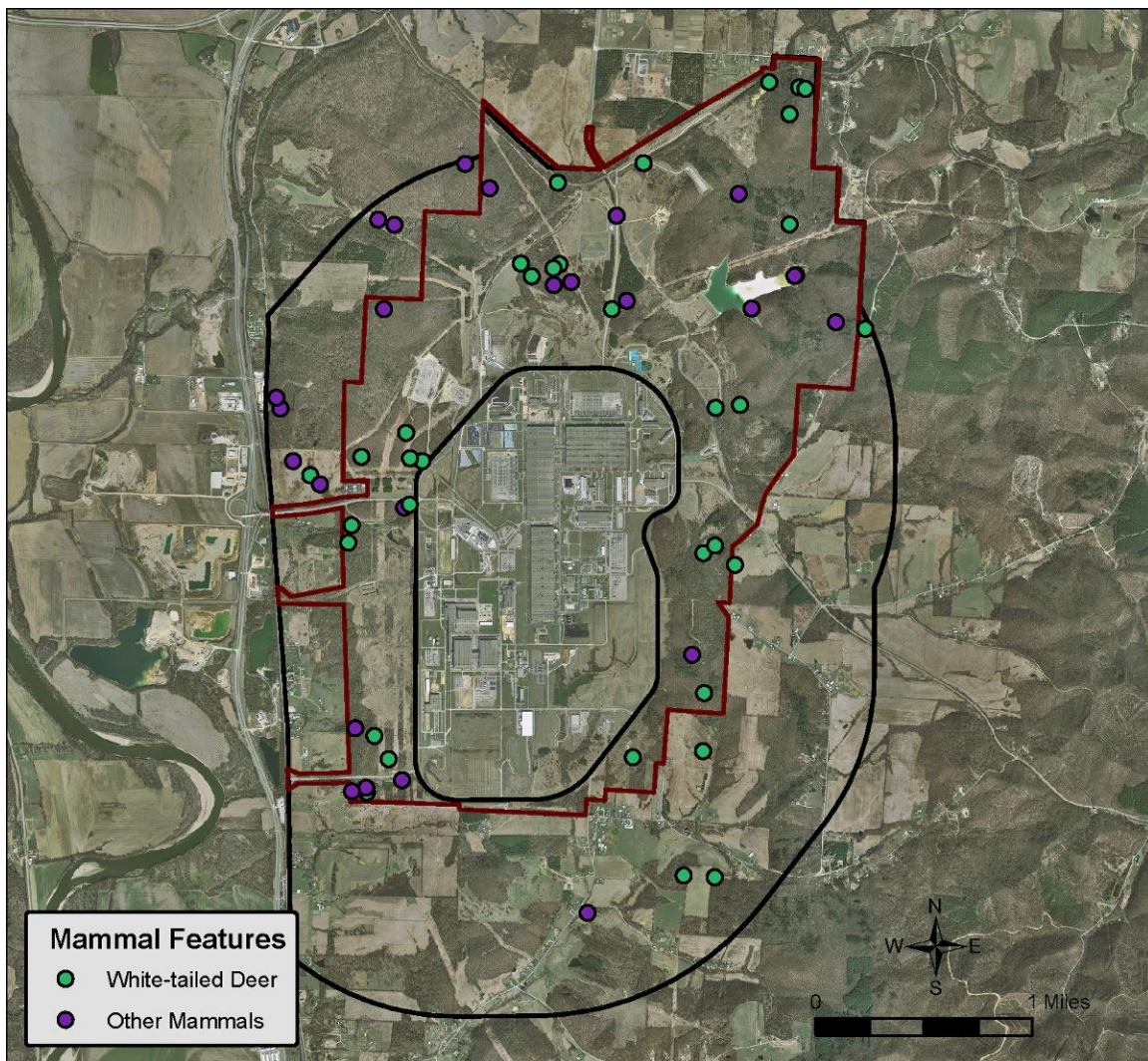


Figure D.17 Map of Observed Mammal Features



Figure D.18 Beaver Dam in Little Beaver Creek



Figure D.19 Pair of coyotes near north entrance



Figure D.20 Tracks of Virginia opossum

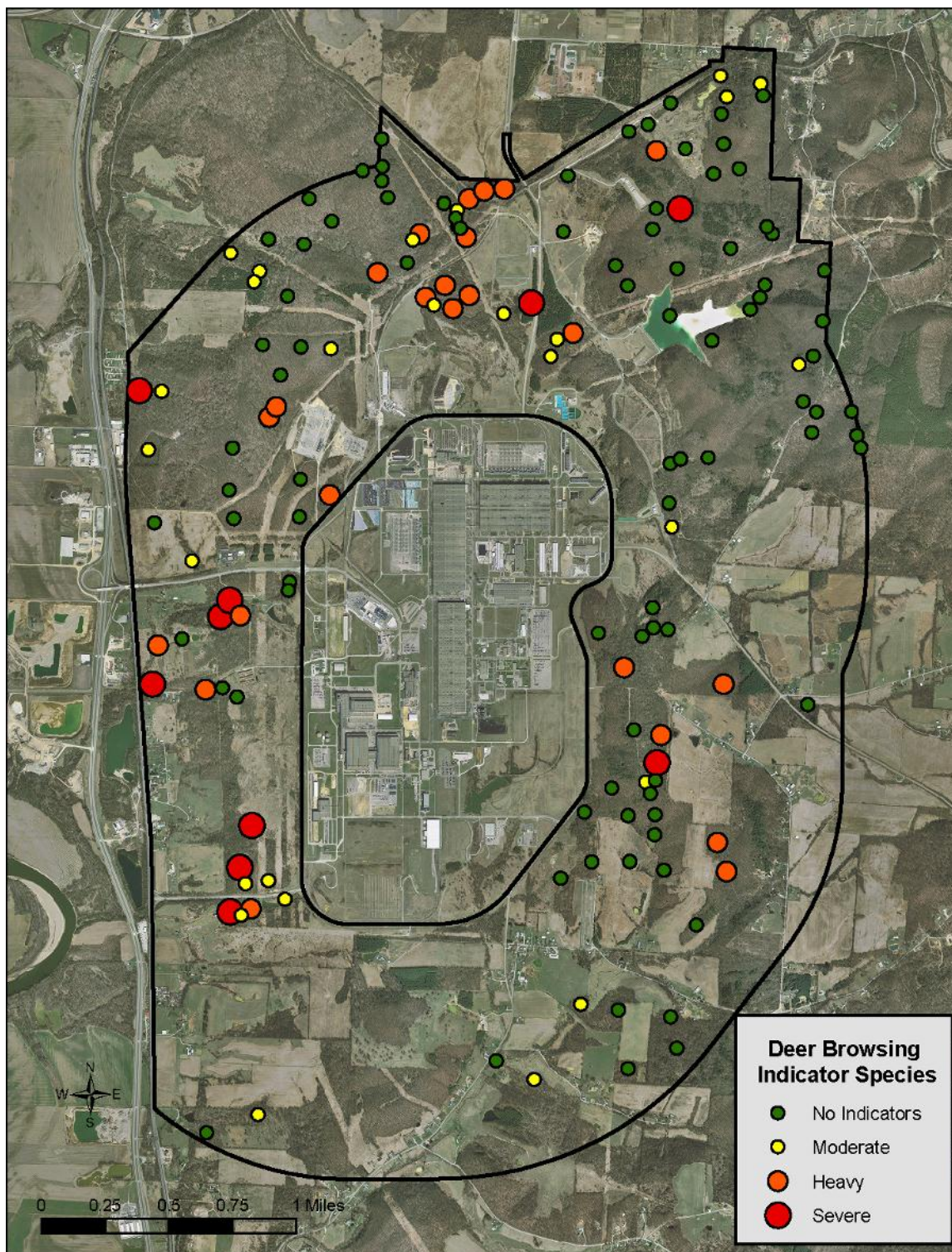


Figure D.21 Map of Sample Sites Colored by Deer Browsing Indicator Species

PORTS Vegetation Sample Data Sheet

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