

# Appendix E Invertebrate SGCN Ranking

## E.1 Insects

See Table 40 for the summary of all invertebrate SGCN rankings, which selected based on the criteria described in the following sections.

### E.1.1 Odonata (dragonflies and damselflies)

Odonates are one of the most studied insects in the District. DOEE has six years of survey data from six regions in the District. Contemporary data are from a total of 18 transects. To select odonate SGCN, species were listed if they met three or more of these five criteria:

1. Element occurrence in three or fewer locations in contemporary survey data from DOEE FWD and Richard Orr, Mid-Atlantic Invertebrate Field Studies Inc.
2. State rank S3–S1 (Nature Serve, adjusted with estimates from R. Orr)
3. RSGCN Rank R3–R1 (Regional Conservation Needs grant report: Regional Odonate SGCN)
4. Listed as an SGCN in Maryland’s 2015 SWAP update
5. Listed as SGCN by DOEE in SWAP 2005

Some few species were included as SGCN if they met only two of the above criteria. These were included on recommendation by R. Orr as species who’s populations are declining locally or are locally but not regionally rare (lancet clubtail *Gomphus exilis* and cyrano darner *Nasiaeschna pentacantha*), and species tied to rare endemic habitats with historical records in the District (sphagnum sprite *Nehalennia gracilis* and sedge sprite *Nehalennia irene*).

### E.1.2 Butterflies

Butterflies are well studied in the District. DOEE has four years of survey data from six regions in the district. Contemporary data are from a total of 18 transects. To select butterfly SGCN, species were listed if they met two or more of these four criteria:

1. Element occurrence in three or fewer locations in contemporary survey data from DOEE FWD and species inventories from the U.S. National Arboretum and NPS National Capital Parks-East.
2. DC State rank S3–S1 (Nature Serve)
3. MD State rank S3–S1 (Nature Serve)
4. Listed as an SGCN in Maryland’s 2015 SWAP update
5. Listed as SGCN by DOEE in SWAP 2005



Some few species were included as SGCN based on regional or national rarity or decline. *Euphydryas phaeton* and *Lycaena hyllus* are species that use groundwater-fed wetlands and are targeted for conservation by the Mid-Atlantic states. The monarch (*Danaus plexippus*) has shown massive population declines nationally.

### **E.1.3 Hymenoptera (bees)**

Four bee species are listed as SGCN. Bees are a well-studied group of insects in the region. Contemporary data exist from the USGS (Sam Droege). To select bee SGCN, species were listed if they met all three criteria:

1. Contemporary element occurrence in the District
2. Estimated state rank S3–S1 (Nature Serve adjusted with estimates from S. Droege)
3. Proposed for listing as SGCN in Maryland in 2015 (only species whose range includes the District)

### **E.1.4 Beetles**

One ground beetle species was added as SGCN. It was included based on recent discovery in the District (published contemporary data: Steury & Messer 2014; Steury, Messer & Cavey 2014).

## **E.2 Crustaceans**

### **E.2.1 Amphipods**

Amphipods were listed based on their global rank, state rank in the District and Maryland, the Maryland state endangered species list, species to be listed as SGCN by Maryland in 2015, species listed as SGCN by the District in 2005.

### **E.2.2 Copepods**

FWD has removed the majority of the copepod species due to inadequacy of listing data from 2005. Species that remain are globally ranked G1–G3, DC state ranked S1–S3, candidate species for listing under the Endangered Species Act, or are listed as SGCN by Maryland in 2015.

### **E.2.3 Crayfish**

Three crayfish are listed as SGCN. Species were included based on range maps from the *Maryland Key to the Crayfish of Maryland* (MD DNR, Citation). One species, acuminate crayfish (*Cambarus acuminatus*), is also listed as an SGCN in Maryland.



## E.3 Mussels

### E.3.1 Freshwater mussels

No change from DC SWAP 2005. No recent data exists.

## E.4 Gastropods

### E.4.1 Snails

Two terrestrial snails were added as SGCN. These were included based on recent discovery in the District (published contemporary data, Steury et al 2014), state rank in Maryland or Virginia, and proposed listing in Maryland in 2015. One aquatic snail, the Appalachian springsnail (*Fontigens bottimeri*), remains listed.





Table 40 Invertebrate SGCN Ranking

Taxonomic Classification			2015 Status		Listing Criteria																	
					State Statuses		Contemporary Occurrence Records										Global, National, Regional or State Rank					Other Criteria or Comments
							Record Summaries		Record Locations													
Group	Species	Common Name	District SGCN 2015	Tier (Priority)	DC SGCN 2006 WAP	MD SGCN 2015 draft WAP	District Record 2007-2014	No. Recent District Record Locations	Aquatic Gardens	National Arboretum	Rock Creek Park	C&O Canal	Nat Cap Pks East	Oxon Run Seeps	Other District Record Locations	Tech. Comm. Sug. St. Rank	State Rank DC	State Rank MD	State Rank VA	RSGCN Rank	N- or G-Rank	Comments
Damselflies	<i>Amphiagrion saucium</i>	Eastern Red Damsel				x					H					SH	S4	S3S4	S3S4	R4-R5	N5	Historical; pre-1970
	<i>Archilestes grandis</i>	Great Spreadwing	X	I		x	Y	2		X			X			S1	SNR	S3	S2S4	R1-R2	N5	
	<i>Argia apicalis</i>	Blue-fronted Dancer					Y	5	X	X	X	X	X			S5	S4	S4	S4	R4-R5	N5	
	<i>Argia bipuntulata</i>	Seepage Dancer				x										SH	SH	S3	S3	R1-R2	N4	Historical; pre-1899
	<i>Argia fumipennis violacea</i>	Violet Dancer					Y	5	X	X	X	X	X			S5	S4	S5	S5	R4-R5	N5	
	<i>Argia moesta</i>	Powdered Dancer					Y	2			X	X				S5	S4	S5	S4	R4-R5	N5	
	<i>Argia sedula</i>	Blue-ringed Dancer	X	II		x		1				X				S1	SNR	S3	S4	R3	N5	
	<i>Argia tibialis</i>	Blue-tipped Dancer					Y	4	X		X	X	X			S5	SNR	S4	S4	R4-R5	N5	
	<i>Argia translata</i>	Dusky Dancer					Y	2			X	X				S4	S3	S4	S3S4	R4-R5	N5	
	<i>Calopteryx dimidiata</i>	Sparkling Jewelwing				x										SH	SNR	S2	S3S4	R1-R2	N5	Historical; Westfall & May, Dragonflies of North America
	<i>Calopteryx maculata</i>	Ebony Jewelwing					Y	5	X	X	X	X	X			S4	S4	S5	S5	R4-R5	N5	
	<i>Chromagrion conditum</i>	Aurora Damsel				x										SH	SNR	S3S4	S4	R4-R5	N5	Historical; Westfall & May, Dragonflies of North America
	<i>Enallagma aspersum</i>	Azure Bluet	X	II			Y	2		X	X					S3	SNR	S4	S4	R4-R5	N5	
	<i>Enallagma basidens</i>	Double-striped Bluet	X	II				1			X					S3	SNR	S4	S3	R3	N5	
	<i>Enallagma civile</i>	Familiar Bluet					Y	4	X	X	X	X				S5	S4	S5	S5	R4-R5	N5	
	<i>Enallagma divagans</i>	Turquoise Bluet	X	I		x	Y	2	X			X				S3	S3	S3S4	S4	R4-R5	N5	
	<i>Enallagma durum</i>	Big Bluet				x	Y	3	X	X	H	X				S4	S3	S3	S4	R4-R5	N5	
	<i>Enallagma exsulans</i>	Stream Bluet					Y	4	X		X	X	X			S5	S4	S5	S4	R4-R5	N5	
	<i>Enallagma geminatum</i>	Skimming Bluet					Y	3	X	X		X				S4	SNR	S5	S4	R4-R5	N5	
	<i>Enallagma signatum</i>	Orange Bluet					Y	5	X	X	X	X	X			S4	S4	S4	S5	R4-R5	N5	
<i>Enallagma traviatum</i>	Slender Bluet	X	II		x	Y	1	X							S2	S3	S3	S3S4	R4-R5	N5		
<i>Hetaerina americana</i>	American Rubyspot						1				H	X			S5	S4	S4	S4	R4-R5	N5		
<i>Hetaerina titia</i>	Smoky Rubyspot				x							H			SH	SH	SH	S3S4	R1-R2	N5	Historical; pre-1970	
<i>Ischnura hastata</i>	Citrine Forktail			I			Y	3			X	X	X		S3	S4	S4S5	S5	R4-R5	N5		

Taxonomic Classification			2015 Status		Listing Criteria																	
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	<i>Ischnura kellicotti</i>	Lilypad Forktail	X	I	x		Y	2	X	X						S5	SNR	S3S4	S3S4	R4-R5	N5	Ranked as demonstrably secure, but only seen at 2 sites.
	<i>Ischnura posita</i>	Fragile Forktail					Y	5	X	X	X	X	X			S5	S4	S5	S5	R4-R5	N5	
	<i>Ischnura ramburii</i>	Rambur's Forktail	X	II			Y	2				X	X			S3	SNR	S4	S4	R4-R5	N5	
	<i>Ischnura verticalis</i>	Eastern Forktail					Y	5	X	X	X	X	X			S5	S4	S5	S5	R4-R5	N5	
	<i>Lestes australis</i>	Southern Spreadwing					Y	3			X	X	X			S2	SNR	SNR	S5	R4-R5	N5	
	<i>Lestes dryas</i>	Emerald Spreadwing			x											SH	SNR	SH	SH	R4-R5	N5	Historical; Westfall & May, Dragonflies of North America
	<i>Lestes forcipatus</i>	Sweetflag Spreadwing	X	II		x		1					X			S2	S3	S3	S3	R4-R5	N5	
	<i>Lestes inaequalis</i>	Elegant Spreadwing	X	II				1					X			S1	S3	S4	S3S4	R4-R5	N5	
	<i>Lestes rectangularis</i>	Slender Spreadwing					Y	3	X	X		X				S3	S4	S4S5	S5	R4-R5	N5	
	<i>Lestes unguiculatus</i>	Lyre-tipped Spreadwing														SH	SNR	SH		R3	N5	Historical; pre-1899
		<i>Nehalennia gracilis</i>	Sphagnum Sprite	X	III	x	x									SH	SNR	S2	S2	R4-R5	N5	
	<i>Nehalennia irene</i>	Sedge Sprite	X	III	x	x									SH	SNR	S3	S1S2	R4-R5	N5		
Dragonflies	<i>Aeshna umbrosa</i>	Shadow Darner						3	X	X	H	X			S3	S4	S4	S5	R4-R5	N5		
	<i>Anax junius</i>	Common Green Darner					Y	4	X	X	X	X	Y		S5	S5	S5	S5	R4-R5	N5		
	<i>Anax longipes</i>	Comet Darner	X	II		x		1				X			S1	SNR	S3	S3	R4-R5	N5		
	<i>Arigomphus villosipes</i>	Unicorn Clubtail	X	I	x		Y	2	X	X					S1	SNR	S4	S4	R4-R5	N5		
	<i>Boyeria vinosa</i>	Fawn Darner						3	X		X	X			S3	S3	S5	S5	R4-R5	N5		
	<i>Cellithemis eponina</i>	Halloween Pennant					Y	3	X	X		X			S3	S3	S4S5	S5	R4-R5	N5		
	<i>Cordulegaster bilineata</i>	Brown Spiketail				x									SH	SNR	S3	S4	R1-R2	N5		
	<i>Cordulegaster erronea</i>	Tiger Spiketail	X	I	x	x	Y	2			X		X		S1	S1	S3	S3	R1-R2	N4		
	<i>Cordulegaster maculata</i>	Twin-spotted Spiketail													SH	S2	S4	S4	R4-R5	N5	Historical; pre-1905 (Donnelly)	
	<i>Cordulegaster obliqua</i>	Arrowhead Spiketail				x									SH	SH	S2	S3S4	R3	N4	Historical; pre-1921 (Donnelly)	

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	<i>Didymops transversa</i>	Stream Cruiser						1				X				S4	SNR	S5	S4	R4-R5	N5	
	<i>Dromogomphus spinosus</i>	Black-shouldered Spinyleg					Y	2			X	X				S4	S4	S5	S4	R4-R5	N5	
	<i>Epiaeschna heros</i>	Swamp Darner					Y	4	X	X	X	X				S4	S4	S5	S5	R4-R5	N5	
	<i>Epitheca cynosura</i>	Common Baskettail					Y	3	X	X		X				S5	SNR	S5	S5	R4-R5	N5	
	<i>Epitheca princeps</i>	Prince Baskettail					Y	4	X	X	X	X				S5	S3	S4	S5	R4-R5	N5	
	<i>Erpetogomphus designatus</i>	Eastern Ringtail	X	II		x		1				X				S1	S1S2	S2	S4	R3	N5	
	<i>Erythemis simplicicollis</i>	Common Pondhawk					Y	5	X	X	X	X	X			S5	S4	S5	S5	R4-R5	N5	
	<i>Erythrodiplax berenice</i>	Seaside Dragonlet														SH	SNR	S4	S5	R3	N5	Historical; pre-1899
	<i>Gomphaeschna antilope</i>	Taper-tailed Darner				x										SH	SH	S2	S3	R1-R2	N4	Historical; pre-1920
	<i>Gomphus exilis</i>	Lancet Clubtail	X	II				1				X				S2	S4	S5	S5	R4-R5	N5	Extent limited in DC - CHOH
	<i>Gomphus vastus</i>	Cobra Clubtail	X	II			Y	1			H	X				S3	S2S3	S4	S3S4	R4-R5	N5	Extent limited in DC - CHOH
	<i>Hagenius brevistylus</i>	Dragonhunter	X	II			Y	1			X					S3	S3	S4	S4	R4-R5	N5	Extent limited in DC - ROCR
	<i>Libellula auripennis</i>	Golden-winged Skimmer				x										SH	SNR	S3	S4	R4-R5	N5	Historical
	<i>Libellula cyanea</i>	Spangled Skimmer					Y	3	X	X	X					S4	S4	S5	S5	R4-R5	N5	
	<i>Libellula flavida</i>	Yellow-sided Skimmer				x										SH	SH	S2S3	S3	R1-R2	N5	Historical; pre-1899 (Donnelly)
	<i>Libellula incesta</i>	Slaty Skimmer					Y	5	X	X	X	X	X			S4	SNR	S5	S5	R4-R5	N5	
	<i>Libellula luctuosa</i>	Widow Skimmer					Y	5	X	X	X	X	X			S4	S4	S5	S5	R4-R5	N5	
	<i>Libellula needhami</i>	Needham's Skimmer					Y	4	X	X		X	X			S4	S4	S5	S5	R3	N5	
	<i>Libellula pulchella</i>	Twelve-spotted Skimmer					Y	5	X	X	X	X	X			S4	S4	S5	S5	R4-R5	N5	
	<i>Libellula semifasciata</i>	Painted Skimmer						1				X				S2	S4	S5	S4	R4-R5	N5	
	<i>Libellula vibrans</i>	Great Blue Skimmer					Y	5	X	X	X	X	X			S4	SNR	S5	S4	R4-R5	N5	
	<i>Macromia illinoensis</i>	Swift River Cruiser						2			X	X				S3	SNR	S4	S5	R4-R5	N5	
	<i>Macromia taeniolata</i>	Royal River Cruiser				x						H				SH	SH	S3	S3	R3	N5	Historical; pre-1907

Taxonomic Classification			2015 Status		Listing Criteria																	
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Group	Species	Common Name	District SGCN 2015	Tier (Priority)	DC SGCN 2006 WAP	MD SGCN 2015 draft WAP	District Record 2007-2014	No. Recent District Record Locations	Aquatic Gardens	National Arboretum	Rock Creek Park	C&O Canal	Nat Cap Pks East	Oxon Run Seeps	Other District Record Locations	Tech. Comm. Sug. St. Rank	State Rank DC	State Rank MD	State Rank VA	RSGCN Rank	N- or G-Rank	Comments
	<i>Nasiaeschna pentacantha</i>	Cyrano Darner	X	I		x		2			X	X				S3	SNR	S3	S4	R4-R5	N5	
	<i>Neurocordulia obsoleta</i>	Umber Shadowdragon	X	II		x		1			H	X				S3	S3	S3	S3S4	R4-R5	N5	
	<i>Pachydiplax longipennis</i>	Blue Dasher					Y	5	X	X	X	X	X			S5	S4	S5	S5	R4-R5	N5	
	<i>Pantala flavescens</i>	Wandering Glider					Y	5	X	X	X	X	X			S4	S4	S5	S5	R4-R5	N5	
	<i>Pantala hymenaea</i>	Spot-winged Glider					Y	5	X	X	X	X	X			S4	S4	S5	S5	R4-R5	N5	
	<i>Perithemis tenera</i>	Eastern Amberwing					Y	5	X	X	X	X	X			S5	S4	S5	S5	R4-R5	N5	
	<i>Plathemis lydia</i>	Common Whitetail					Y	5	X	X	X	X	X			S5	S4	S5	S5	R4-R5	N5	
	<i>Somatochlora filosa</i>	Fine-lined Emerald	X	III	x	x	Y									SH	SH	S2	S2	R3	N5	Historical; pre-1921
	<i>Somatochlora linearis</i>	Mocha Emerald	X	II	x	x		2			X		X			S1	SNR	S3S4	S3S4	R3	N5	Kenilworth Marsh
	<i>Somatochlora tenebrosa</i>	Clamp-tipped Emerald	X	I				2		X	X					S1	SNR	S4	S4	R4-R5	N5	
	<i>Stylogomphus albistylus</i>	Eastern Least Clubtail	X	II				1				X				S1	S1S2	S4	S3S4	R4-R5	N5	
	<i>Stylurus plagiatus</i>	Russet-tipped Clubtail	X	I		x	Y	3		X		X	X			S4	S4	S3	S3S4	R3	N5	could possibly list since it's ranked R3 in the northeast region
	<i>Sympetrum internum</i>	Cherry-faced Meadowhawk														SH	SNR			R4-R5		Historical
	<i>Sympetrum rubicundulum</i>	Ruby Meadowhawk						2	X		H		X			S1	S4	S4	S5	R4-R5	N5	
	<i>Sympetrum semicinctum</i>	Band-winged Meadowhawk				x										SH	SNR	S3	S5	R4-R5	N5	Historical; pre-1924
	<i>Sympetrum vicinum</i>	Autumn Meadowhawk						3	X	X		X				S5	S4	S5	S5	R4-R5	N5	
	<i>Tachopteryx thoreyi</i>	Gray Petaltail			x	x					H					SH	SX	S3	S4	R3	N4	Historical; pre-1898
	<i>Tramea carolina</i>	Carolina Saddlebags					Y	3	X	X			X			S3	SNR	S4S5	S5	R4-R5	N5	
	<i>Tramea lacerata</i>	Black Saddlebags					Y	5	X	X	X	X	X			S5	S4	S5	S5	R4-R5	N5	
	<i>Abaeis nicippe</i>	Sleepy Orange					Y	1					X					SNA	SNR		N5	
	<i>Achalarus lyciades</i>	Hoary Edge															SNR	S5	S5		N4N5	



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	<i>Amblyscirtes vialis</i>	Common Roadside-skipper															SH	S4	S5		N4	
	<i>Ancyloxypha numitor</i>	Common Least Skipper					Y	4	X	X		X	X				SNR	S5	S5		N5	
	<i>Anthocharis midea</i>	Falcate Orangetip															SNR	S5	S4		N4N5	
	<i>Asterocampa celtis</i>	Hackberry Emperor					Y	1				X					SNR	S5	S5		N5	
	<i>Asterocampa clyton</i>	Tawny Emperor															S2S4	S4	S5		N5	
	<i>Atalopedes campestris</i>	Sachem					Y	4	X	X		X	X				SNR	S5B	S5		N5	
	<i>Atrytonopsis hianna</i>	Dusted Skipper															SH	S4	S4?		N4	
	<i>Autochton cellus</i>	Gold-banded Skipper															SH	SH	SU		N4	
	<i>Battus philenor</i>	Pipevine Swallowtail					Y	2		X			X				SNR	S4	S5		N5	
	<i>Boloria bellona</i>	Meadow Fritillary															SNR	S4	S5		N5	
	<i>Boloria selene</i>	Silver-bordered Fritillary															SH	S3	S2		N5	
	<i>Callophrys augustinus</i>	Brown Elfin															SH	S4	S4		N5	
	<i>Callophrys gryneus</i>	Juniper Hairstreak															SNR	S4	S4		N5	
	<i>Callophrys henrici</i>	Henry's Elfin															SH	S4	S4		N5	
	<i>Callophrys/Incisalia irus</i>	Frosted Elfin	X	III	Y	Y											SH	S1	S2?		N3	
	<i>Calpododes ethlius</i>	Brazilian Skipper																				
	<i>Calycopis cecrops</i>	Red-banded Hairstreak					Y	4		X	X	X	X				SNR	S4	S5		N5	
	<i>Celastrina ladon</i>	Spring Azure, Edwards' Azure															SNR	S5	S5		N4	
	<i>Celastrina neglecta</i>	Summer Azure															SNR	SNR	S5		N5	
	<i>Cercyonis pegala</i>	Common Wood-nymph															SNR	S5	S5		N5	
	<i>Chlosyne nycteis</i>	Silvery Checkerspot															SH	S4	S4		N5	
	<i>Colias eurytheme</i>	Orange Sulphur					Y	2		X			X				SNR	S5	S5		N5	
	<i>Colias philodice</i>	Clouded Sulphur					Y	5	X	X	X	X	X				SNR	S5	S5		N5	
	<i>Cupido comyntas</i>	Eastern Tailed-blue					Y	5	X	X	X	X	X				SNR	S5	S5		N5	

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	<i>Danaus plexippus</i>	Monarch	X	I	Y	Y	Y	3		X	X		X				S4B	S5B	S4		N5B,N2N3N	
	<i>Epargyreus clarus</i>	Silver-spotted Skipper					Y	5	X	X	X	X	X				SNR	S5	S5		N5	
	<i>Erynnis b. brizo</i>	Sleepy Duskywing															SNR	S5	S5		N5	
	<i>Erynnis baptisiae</i>	Wild Indigo Duskywing																S4	S5		N5	
	<i>Erynnis horatius</i>	Horace's Duskywing					Y	2		X			X				SNR	S5	S5		N5	
	<i>Erynnis icelus</i>	Dreamy Duskywing															SNR	S5	S5		N5	
	<i>Erynnis juvenalis</i>	Juvenal's Duskywing															SNR	S5	S5		N5	
	<i>Erynnis martialis</i>	Mottled Duskywing			Y												SNR	S1	S1S3		N3	
	<i>Erynnis zarucco</i>	Zarucco Duskywing																				
	<i>Euphydryas phaeton</i>	Baltimore Checkerspot	X	I		Y	Y	1		X							SH	S2	SU		N4	
	<i>Euphyes bimacula</i>	Two-spotted Skipper																				
	<i>Euphyes vestris</i>	Dun Skipper															SNR	S5	S5		N5	
	<i>Euptoieta claudia</i>	Variegated Fritillary			Y		Y	2		X			X					S5B	S5		N5	
	<i>Eurema daira</i>	Barred Yellow																			N5	
	<i>Eurytides marcellus</i>	Zebra Swallowtail					Y	2			X	X						S4	S5		N5	
	<i>Feniseca tarquinius</i>	Harvester															SNR	S4	S4		N4	
	<i>Hesperia leonardus</i>	Leonard's Skipper	X	I		Y	Y	2	X		X		X				SH	S2	S3?		N4	
	<i>Hesperia metea</i>	Cobweb Skipper				Y												S3	S4		N4N5	
	<i>Hylephila phyleus</i>	Fiery Skipper					Y	2		X			X					S5B	S5		N5	
	<i>Junonia coenia</i>	Common Buckeye					Y	5	X	X	X	X	X					S5B	S5		N5	
	<i>Lerema accius</i>	Clouded Skipper																				
	<i>Lerodea eufala</i>	Eufala Skipper																				
	<i>Lethe anhedon</i>	Northern Pearly-eye					Y	3			X	X	X				SNR	S4	S4		N4	
	<i>Lethe appalachia</i>	Appalachian Eyed Brown					Y	2		X		X					SNR	S4	S4		N4	

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	<i>Libytheana carinenta</i>	American Snout Butterfly															SNR	S5B	S5		N5	
	<i>Limenitis archippus</i>	Viceroy					Y	1		X							SNR	S5	S5		N5	
	<i>Limenitis arthemis</i>	Red-spotted Purple					Y	3		X		X	X				SNR	S5	S5		N5	
	<i>Limenitis arthemis</i>	White Admiral																			N5	
	<i>Lycaena epixanthe</i>	Bog Copper				Y																
	<i>Lycaena hyllus</i>	Bronze Copper	X	II		Y											SNR	S4	S1		N4N5	
	<i>Lycaena phlaeas</i>	Little Copper															SNR	S5	S5		N5	
	<i>Megisto cymela</i>	Little Wood Satyr					Y	3			X	X	X				SNR	S5	S5		N5	
	<i>Nastra lherminier</i>	Swarthy Skipper															SNR	S5	S5		N5	
	<i>Nymphalis antiopa</i>	Mourning Cloak					Y	1			X						SNR	S5B	S5		N5	
	<i>Panoquina ocola</i>	Ocola Skipper															SNR	S5	S5		N5	
	<i>Papilio cresphontes</i>	Giant Swallowtail				Y											SH	S2	S4?		N5	
	<i>Papilio glaucus</i>	Eastern Tiger Swallowtail					Y	5	X	X	X	X	X				SNR	S5	S5		N5	
	<i>Papilio palamedes</i>	Palamedes Swallowtail				Y											SNR	S1	S4		N4N5	
	<i>Papilio polyxenes</i>	Black Swallowtail					Y	4	X	X		X	X				SNR	S5	S5		N5	
	<i>Papilio polyxenes asterius</i>	Parsnip Swallowtail																				
	<i>Papilio troilus</i>	Spicebush Swallowtail					Y	1		X							SNR	S5	S5		N4?	
	<i>Parrhasius M-album</i>	White-m Hairstreak																S4	S4		N5	
	<i>Phoebis sennae</i>	Cloudless Sulphur					Y	1		X								SNA	SNR		N5	
	<i>Pholisora catullus</i>	Common Sootywing					Y	2		X			X				SNR	S5	S5		N5	
	<i>Phyciodes tharos</i>	Pearl Crescent					Y	5	X	X	X	X	X				SNR	S5	S5		N5	
	<i>Pieris rapae</i>	Cabbage White					Y	5	X	X	X	X	X								N5	
	<i>Poanes aaroni</i>	Aaron's Skipper															SNR	S4	S3		N4	
	<i>Poanes hobomok</i>	Hobomok Skipper															SNR	S5	S4S5		N5	
	<i>Poanes viator</i>	Broad-winged Skipper																S4	S5		N5	
	<i>Poanes zabulon</i>	Zabulon Skipper					Y	4		X	X	X	X				SNR	S5	S5		N5	
	<i>Polites origenes</i>	Crossline Skipper	X	I	Y		Y	2	X	X							SNR	S5	S5		N4N5	
	<i>Polites peckius</i>	Peck's Skipper															SNR	S5	S5		N5	

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	<i>Polites themistocles</i>	Tawny-edged Skipper															SNR	S5	S5		N5	
	<i>Polygonia comma</i>	Eastern Comma			Y		Y	3		X		X	X				SNR	S5	S5		N5	
	<i>Polygonia interrogationis</i>	Question Mark Butterfly			Y		Y	3		X		X	X				SNR	S5	S5		N5	
	<i>Polygonia progne</i>	Gray Comma				Y												S1S3	S4		N4N5	
	<i>Pompeius verna</i>	Little Glassywing	X	III	Y												SNR	S5	S5		N5	
	<i>Pontia protodice</i>	Checkered White					Y	1				X						S4	S4		N4	
	<i>Pyrgus centaureae wyandot</i>	Appalachian grizzled skipper			Y												SH	S1	S1		N1N2	
	<i>Pyrgus communis</i>	Common Checkered-skipper					Y	2		X			X				S4B	S5	S5		N5	
	<i>Pyrgus malvae</i>	Grizzled Skipper																				
	<i>Pyrisitia lisa</i>	Little Yellow															S4B	SNA	S5		N5	
	<i>Satyrium calanus</i>	Banded Hairstreak															SNR	S5	S5		N5	
	<i>Satyrium calanus falacer</i>	Falacer Hairstreak																				
	<i>Satyrium edwardsii</i>	Edwards' Hairstreak	X	III	Y	Y											SNR	S1	S3S4		N4	
	<i>Satyrium favonius</i>	Oak Hairstreak															SH	SNR	S3		N4	
	<i>Satyrium favonius ontario</i>	Northern Oak Hairstreak															SNR	S1S2	S3		N4	
	<i>Satyrium liparops</i>	Striped Hairstreak																S4	S4		N5	
	<i>Satyrium titus</i>	Coral Hairstreak															SNR	S4	S4		N4N5	
	<i>Speyeria aphrodite</i>	Aphrodite Fritillary																S4	S5		N5	
	<i>Speyeria cybele cybele</i>	Great Spangled Fritillary	X	II	Y		Y	1					X				SNR	S5	S5		N5	
	<i>Speyeria idalia</i>	Regal Fritillary	X	II		Y											SX	SH	S1		N3	
	<i>Staphylus hayhurstii</i>	Hayhurst's Scallopwing					Y	3			X	X	X				SNR	S4	S4		N5	
	<i>Strymon melinus</i>	Gray Hairstreak					Y	3		X		X	X				S4S5	S5	S5		N5	
	<i>Thorybes bathyllus</i>	Southern Cloudywing															SNR	S4	S4		N5	
	<i>Thorybes confusus</i>	Confused Cloudywing																				

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	<i>Thorybes pylades</i>	Northern Cloudywing															SNR	S5	S5		N5	
	<i>Thymelicus lineola</i>	European Skipper					Y	2		X		X										
	<i>Urbanus proteus</i>	Long-tailed Skipper					Y	1					X									
	<i>Vanessa atalanta</i>	Red Admiral Butterfly			Y		Y	5	X	X	X	X	X				S4B	S5B	S5		N5	
	<i>Vanessa cardui</i>	Painted Lady					Y	2	X				X				S4B	S5B	S5		N5	
	<i>Vanessa virginiensis</i>	American Lady					Y	2		X			X				S4B	S5B	S5		N5	
	<i>Wallengrenia egeremet</i>	Northern Broken-dash															SNR	S5	S5		N5	
Amphipod	<i>Crangonyx shoemakerii</i>	Shoemaker Crangonyctid																				
	<i>Crangonyx stagnicolous</i>	An amphipod															SNR				G2	
	<i>Stygobromus hayi</i>	Hay's Spring Amphipod	X	I	X												N1					Fed Endangered
	<i>Stygobromus kenki</i>	Kenk's Amphipod	X	I	X	X											S1				G2	MD Endangered
	<i>Stygobromus pizzinii</i>	Pizzini's Cave Amphipod	X	II	X	X											S1				G3G4	
	<i>Stygobromus sextarius</i>	Capital Area groundwater amphipod	X	II		X											S1				G1	MD endangered
	<i>Stygobromus tenuis potomacus</i>	Potomac Groundwater Amphipod	X	I	X	X											S3				G4T4	
Copepod	<i>Acanthocyclops brevispinosus</i>								X								S1					
	<i>Acanthocyclops columbiensis</i>		X	I	X	X			X								S1				G1	
	<i>Acanthocyclops exilis</i>										4											
	<i>Acanthocyclops robustus</i>								X													

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	<i>Acanthocyclops sp.</i>				X						1											species is villosipes? Can't find record of this species existing
	<i>Acanthocyclops vernalis</i>										1				2							
	<i>Arctodiaptomus dorsalis</i>								X													
	<i>Attheyella (Mrazekiella) carolinensis</i>		X	II							2											
	<i>Attheyella (Mrazekiella) illinoisensis</i>				X						3			1	2							
	<i>Attheyella (Mrazekiella) obatogamensis</i>		X	II	X									1								
	<i>Attheyella (Mrazekiella) spinipe</i>	A harpacticoid copepod	X	II	X										1		SU				GNR	
	<i>Bryocamptus (B.) zschokkei alleghaniensis</i>		X	II							1											
	<i>Bryocamptus (Bryocamptus) calvus</i>																					
	<i>Bryocamptus (Bryocamptus) hutchinsoni</i>		X	II	X									1								
	<i>Bryocamptus (Bryocamptus) minutus</i>		X	II	X									1								
	<i>Bryocamptus (Bryocamptus) zschokkei</i>										4			1	1							
	<i>Bryocamptus (Limocamptus) hiemalis</i>										1											
	<i>Bryocamptus (Limocamptus) nivalis</i>		X	II	X									1								
	<i>Canthocamptus vagus</i>								X													
	<i>Diacyclops harryi</i>		X	II	X									1								
	<i>Diacyclops navus</i>		X	II	X				X													
	<i>Diacyclops thomasi</i>								X													

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	<i>Ectocyclops phaleratus</i>																						
	<i>Elaphoidella bidens</i>								X		1												
	<i>Ergasilus cerastes</i>																						
	<i>Ergasilus labracis</i>																						
	<i>Eucyclops agilis</i>				X				X						3								
	<i>Eucyclops elegans</i>		X	II					X		1												
	<i>Eurytemora affinis</i>								X														
	<i>Halicyclops reidae</i>														1								
	<i>Lernaea cruciata</i>																						
	<i>Macrocyclus albidus</i>		X	II	X																		
	<i>Mesocyclops americanus</i>								X														
	<i>Mesocyclops edax</i>								X														
	<i>Mesocyclops ruttneri</i>								X														
	<i>Microcyclops rubellus</i>								X														
	<i>Moraria cristata</i>										1												
	<i>Moraria laurentica</i>																						
	<i>Onychodiaptomus birgei</i>								X														
	<i>Orthocyclops modestus</i>								X														
	<i>Osphranticum labronectum</i>								X														
	<i>Paracyclops chiltoni</i>				X				X		3			2	1								
	<i>Paracyclops poppei</i>		X	II					X														
	<i>Phyllognathopus viguieri</i>										1												
	<i>Skistodiaptomus pallidus</i>	A calanoid copepod	X	II					X												N1N2		
	<i>Tropocyclops prasinus</i>										1												
	<i>Tropocyclops prasinus mexicanus</i>																						
Crayfish	<i>Cambarus acuminatus</i>	Acuminate crayfish	X	II	y	X											S2					G4Q	MD Endangered

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	<i>Cambarus bartonii bartonii</i>	Common Crayfish																					
	<i>Cambarus diogenes</i>	Devil Crawfish	X	II																			
	<i>Cambarus dubius</i>	Upland Burrowing Crayfish	X	II																			
	<i>Fallicambarus fodiens</i>	Digger crayfish				X											SNR					G5	
	<i>Orconectes limosus</i>	Spinycheek Crayfish																					
	<i>Procambarus acutus</i>	White River Crayfish															SNR						
Bees	<i>Bombus affinis</i>	Rusty-patched bumble bee	X	II		X	Y																Ranked as rare by S. Dreoge, USGS. Suggested for listing
	<i>Bombus auricomus</i>	Black and gold bumble bee				X	Y																
	<i>Bombus pennsylvanicus</i>	American bumble bee				X	Y																
	<i>Bombus vagans</i>	Half-black bumble bee				X	Y																
	<i>Lasioglossum michiganense</i>	A Sweat Bee	X	II			Y																Ranked as rare by S. Dreoge, USGS. Suggested for listing
	<i>Protandrena abdominalis</i>	A Mining Bee	X	II		X	Y																Ranked as rare by S. Dreoge, USGS. Suggested for listing
	<i>Pseudopanurgus virginicus</i>	A slender tri-color Mining Bee	X	II			Y																Ranked as rare by S. Dreoge, USGS. Suggested for listing
Freshwater Mussels	<i>Alasmidonta heterodon</i>	Dwarf Wedgemussel	X	III	x																		
	<i>Alasmidonta marginata</i>	Elktoe																					
	<i>Alasmidonta undulata</i>	Triangle Floater	X	II	x																		
	<i>Alasmidonta varicosa</i>	Brook Floater	X	II	x																		
	<i>Anodonta implicata</i>	Alewife Floater	X	II	x																		
	<i>Aplexa elongata</i>	Lance Aplexa																					



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	<i>Elliptio angustata</i>	Carolina Lance Mussel																					
	<i>Elliptio complanata</i>	Eastern Elliptio																					
	<i>Fontigens bottimeri</i>	Appalachian Springsnail	X	II	x																		
	<i>Lampsilis cariosa</i>	Yellow Lampmussel	X	II	x																		
	<i>Lampsilis radiata</i>	Eastern Lampmussel																					
	<i>Lasmigona subviridis</i>	Green Floater	X	II	x																		
	<i>Leptodea ochracea</i>	Tidewater Mucket	X	II	x																		
	<i>Ligumia nasuta</i>	Eastern Pondmussel	X	II	x																		
	<i>Lyogyrus pupoidea</i>	Pupa Dusksnail																					
	<i>Pyganodon cataracta</i>	Eastern Floater																					
	<i>Strophitus undulatus</i>	Creeper / Squawfoot																					
	<i>Utterbackia imbecillis</i>	Paper Pondshell																					
Snails	<i>Anguispira fergusonii</i>	Coastal-plain Tigersnail	X	II				1							1				VA S3				Record on Theodore Roosevelt Island from Steury et al, 2014)
	<i>Fontigens bottimeri</i>	Appalachian Springsnail	X	II		X											MD S1						
	<i>Oxyloma effusum</i>	Coastal-plain ambersnail	X	II		X		1							1				SNR				Record on Theodore Roosevelt Island from Steury et al, 2014)
	<i>Oxyloma subeffusum</i>	Chesapeake Ambersnail	X	II		X		1							1				VA S1				Record on Theodore Roosevelt Island from Steury et al, 2014)
	<i>Stenotrema barbatum</i>	Bristled Slitmouth	X	II				1											VA S3				Record in Arlington, VA from Seury et al, 2014