

# VIRGINIA WORKING LANDSCAPES

## Meadowview 2017 Biodiversity Survey Results



Smithsonian Conservation Biology Institute



## INTRODUCTION

At Virginia Working Landscapes (VWL), our mission is to promote sustainable land use and conservation of native biodiversity through research, education, and community engagement. VWL formed as a partnership convened by the Smithsonian Conservation Biology Institute (SCBI) in 2010, from a growing desire of regional landowners, citizen scientists, and conservation organizations to conserve Northern Virginia's native wildlife on working lands. VWL staff and a team of SCBI scientists, graduate students, interns, and citizen scientists now conduct Biodiversity Surveys on over 150 properties in the Northern Virginia region. These surveys help us better understand the factors that affect the region's biodiversity and results can be used to help develop best practices for biodiversity conservation and management.



In this report, you will find a summary of the 2017 VWL Biodiversity Survey for Meadowview. By January 2018, you will also be able to download this report from our website and see reports from other properties across multiple years. We are grateful for your participation and hope these results are insightful. For questions about this report, please contact our Outreach Coordinator, Charlotte Lorick at (540)-635-0038 or email us at [SCBIVWL@si.edu](mailto:SCBIVWL@si.edu). To learn more about our program, visit our website ([www.vaworkinglandscapes.org](http://www.vaworkinglandscapes.org)) or Facebook page ([www.facebook.com/VirginiaWorkingLandscapes](http://www.facebook.com/VirginiaWorkingLandscapes)).



# METHODS

## *Overview*

In 2017 we conducted surveys on **56** total properties spanning **14** counties from Augusta and Albemarle to Loudoun and Prince William. In grasslands, we conducted a total of **90** plant surveys, **100** pollinator surveys, and **234** breeding bird point counts. We also collected **42** soil samples, conducted **77** invasive plant transect surveys in forests, and deployed **118** remote cameras for mammal surveys.

In fields and forests at Meadowview, breeding bird and pollinator surveys were performed from May to August.

Due to the nature of sampling methods, the species lists do not necessarily reflect all species that occur on a property.

## **Breeding Bird Survey Methods:**

The breeding bird survey was designed to investigate the relationship between grassland birds and both plant diversity and structure during the nesting season. We sampled breeding birds using a point count method for 10 minute intervals and identified each bird seen or heard within 100 m of each survey pole. One survey site was defined by three poles (labeled A, B, and C) which were placed at least 100 m from the forest edge and approximately 200 m from each other as shown in Figure 1 (page 5). VWL team members visited each site three times and conducted three point counts during each visit (totaling nine point counts for each site).





### **Pollinator Survey Methods:**

The goal of the pollinator survey is to determine species occurrence and diversity. Bumble bees and butterflies are vital pollinators, acting as indicator species for grassland ecosystems. To collect bumble bees, our field team members placed one blue vane trap filled with propylene glycol (a non-toxic preservative) at each survey site, located at least 100 m from the forest edge as shown in Figure 1 (page 5). Furthermore, field team members recorded butterfly species observed during a 20 minute survey. Team members collected bumble bee specimens from the traps four times and recorded observed butterfly species three times during the survey period (June-early August). Back at the lab, bees were washed, dried, and sorted then sent to Blandy Experimental Farm to be identified.





# SURVEY LOCATIONS

Figure 1. 2017 Survey Locations at Meadowview. 1 pollinator and 3 breeding bird survey points were surveyed.



Color	Survey Type	Survey Point	Latitude	Longitude
Pink	Pollinators	1	38.133693°	-79.216764°
Orange	Breeding Birds	A	38.136462°	-79.216671°
		B	38.134624°	-79.214518°
		C	38.132874°	-79.215314°



## RESULTS SUMMARY

Breeding bird surveys at Meadowview recorded **47** species, **8** of which are species of regional or continental concern, and **12** of which are VWL grassland or shrubland target species (See Table 1). The top three most common breeding birds were the eastern meadowlark (*Sturnella magna*), American crow (*Corvus brachyrhynchos*), and red-winged blackbird (*Agelaius phoeniceus*).

A total of **8** bumble bee species were collected, the most common species being the common eastern bumble bee (*Bombus impatiens*) (See Table 2). **6** butterfly species were observed during surveys, the most common species being the cabbage white (*Pipus rapae*), common/clouded Sulphur (*Colias philodice*), and the pearl crescent (*Phyciodes tharos*) (See Table 3)/

# BIRD SURVEYS

Table 1: 2017 Breeding Bird Survey Results from Meadowview. Recorded as occurrence in rank order with a maximum of nine point counts per species.

Common Name	Genus	Species	Species of Concern*	VWL Target Species**	Occurrence (out of 9 point counts) +
Eastern Meadowlark	<i>Sturnella</i>	<i>magna</i>	Regional	Grassland	7
American Crow	<i>Corvus</i>	<i>brachyrhynchos</i>	N/A	N/A	6
Red-winged Blackbird	<i>Agelaius</i>	<i>phoeniceus</i>	N/A	Shrubland	6
Song Sparrow	<i>Melospiza</i>	<i>melodia</i>	N/A	N/A	5
Tree Swallow	<i>Tachycineta</i>	<i>bicolor</i>	N/A	N/A	5
American Robin	<i>Turdus</i>	<i>migratorius</i>	N/A	N/A	4
Carolina Wren	<i>Thryothorus</i>	<i>ludovicianus</i>	N/A	N/A	4
Mourning Dove	<i>Zenaida</i>	<i>macroura</i>	N/A	N/A	4
Northern Cardinal	<i>Cardinalis</i>	<i>cardinalis</i>	N/A	N/A	4
Northern Flicker	<i>Colaptes</i>	<i>auratus</i>	Regional	N/A	4
Baltimore Oriole	<i>Icterus</i>	<i>galbula</i>	Regional	N/A	3
Blue Jay	<i>Cyanocitta</i>	<i>cristata</i>	N/A	N/A	3
Common Yellowthroat	<i>Geothlypis</i>	<i>trichas</i>	N/A	Shrubland	3
Eastern Kingbird	<i>Tyrannus</i>	<i>tyrannus</i>	Regional	Grassland	3
Eastern Phoebe	<i>Sayornis</i>	<i>pheobe</i>	N/A	N/A	3
Field Sparrow	<i>Spizella</i>	<i>pusilla</i>	Regional	Shrubland	3
Indigo Bunting	<i>Passerina</i>	<i>cyanea</i>	N/A	Shrubland	3
Red-bellied Woodpecker	<i>Melanerpes</i>	<i>carolinus</i>	N/A	N/A	3
Red-headed Woodpecker	<i>Melanerpes</i>	<i>erythrocephalus</i>	Continental	N/A	3
Willow Flycatcher	<i>Empidonax</i>	<i>traillii</i>	N/A	Shrubland	3
American Kestrel	<i>Falco</i>	<i>sparverius</i>	N/A	Grassland	2
Barn Swallow	<i>Hirundo</i>	<i>rustica</i>	Regional	N/A	2
Blue Grosbeak	<i>Passerina</i>	<i>caerulea</i>	N/A	Shrubland	2
Common Grackle	<i>Quiscalus</i>	<i>quiscula</i>	N/A	N/A	2

\*Information on species of regional and continental conservation concern, or both (Reg./Con.), for both wintering and breeding bird species, was obtained from Partners in Flight (<http://www.pwrc.usgs.gov/pif/>).

\*\*VWL target species are those that SCBI researchers have identified as dependent on grassland/shrubland habitats and therefore are important components of grassland communities.

+ Incidentals (Inc.) are species observed either before or after survey periods, outside the survey boundaries or observed as flyovers. Birds recorded as incidentals were not included in the final dataset for scientific analysis by SCBI.

*Table 1 (cont.): 2017 Breeding Bird Survey Results from Meadowview. Recorded as occurrence in rank order with a maximum of nine point counts per species.*

Common Name	Genus	Species	Species of Concern*	VWL Target Species**	Occurrence (out of 9 point counts) +
European Starling	<i>Sturnus</i>	<i>vulgaris</i>	N/A	N/A	2
Great Crested Flycatcher	<i>Myiarchus</i>	<i>crinitus</i>	N/A	N/A	2
Orchard Oriole	<i>Icterus</i>	<i>spurius</i>	N/A	N/A	2
Tufted Titmouse	<i>Baeolophus</i>	<i>bicolor</i>	N/A	N/A	2
Yellow Warbler	<i>Setophaga</i>	<i>petechia</i>	N/A	N/A	2
American Goldfinch	<i>Spinus</i>	<i>tristis</i>	N/A	N/A	1
Carolina Chickadee	<i>Poecile</i>	<i>carolinensis</i>	N/A	N/A	1
Chipping Sparrow	<i>Spizella</i>	<i>passerina</i>	N/A	N/A	1
Downy Woodpecker	<i>Picoides</i>	<i>pubescens</i>	N/A	N/A	1
Eastern Towhee	<i>Pipilo</i>	<i>erythrophthalmus</i>	Regional	Shrubland	1
Gray Catbird	<i>Dumetella</i>	<i>carolinensis</i>	N/A	N/A	1
House Finch	<i>Haemorhous</i>	<i>mexicanus</i>	N/A	N/A	1
Killdeer	<i>Charadrius</i>	<i>vociferus</i>	N/A	N/A	1
Northern Mockingbird	<i>Mimus</i>	<i>polyglottos</i>	N/A	N/A	1
Bald Eagle	<i>Haliaeetus</i>	<i>leucocephalus</i>	N/A	N/A	Inc.
Bobolink	<i>Dolichonyx</i>	<i>oryzivorus</i>	N/A	Grassland	Inc.
Canada Goose	<i>Branta</i>	<i>canadensis</i>	N/A	N/A	Inc.
Cedar Waxwing	<i>Bombycilla</i>	<i>cedrorum</i>	N/A	N/A	Inc.
Eastern Bluebird	<i>Sialia</i>	<i>sialis</i>	N/A	Shrubland	Inc.
Pileated Woodpecker	<i>Dryocopus</i>	<i>pileatus</i>	N/A	N/A	Inc.
Red-tailed Hawk	<i>Buteo</i>	<i>jamaicensis</i>	N/A	N/A	Inc.
Rock Pigeon	<i>Columba</i>	<i>livia</i>	N/A	N/A	Inc.
Turkey Vulture	<i>Cathartes</i>	<i>aura</i>	N/A	N/A	Inc.

\*Information on species of regional and continental conservation concern, or both (Reg./Con.), for both wintering and breeding bird species, was obtained from Partners in Flight (<http://www.pwrc.usgs.gov/pif/>).

\*\*VWL target species are those that SCBI researchers have identified as dependent on grassland/shrubland habitats and therefore are important components of grassland communities.

+ Incidentals (Inc.) are species observed either before or after survey periods, outside the survey boundaries or observed as flyovers. Birds recorded as incidentals were not included in the final dataset for scientific analysis by SCBI.



## POLLINATOR SURVEYS

*Table 2: 2017 Bumble Bee Survey Results for Meadowview. The bumble bee species listed below are all species found in this region, including those that were not detected by this survey. Species are arranged in rank order of abundance from blue vane trapping.*

Common Name	Genus	Species	Status*	Abundance in Trap
Common eastern bumble bee	<i>Bombus</i>	<i>impatiens</i>	Common	31
Two-spotted bumble bee	<i>Bombus</i>	<i>bimaculatus</i>	Common	23
Black and gold bumble bee	<i>Bombus</i>	<i>auricomus</i>	Uncommon	9
Sanderson bumble bee	<i>Bombus</i>	<i>sandersoni</i>	Uncommon	6
Brown-belted bumble bee	<i>Bombus</i>	<i>griseocollis</i>	Common	5
Yellow bumble bee	<i>Bombus</i>	<i>fervidus</i>	Uncommon	2
Confusing bumble bee	<i>Bombus</i>	<i>perplexus</i>	Common	1
Half-black bumble bee	<i>Bombus</i>	<i>vagans</i>	Common	1

  

Common Name	Genus	Species	Status*	Abundance in Trap
Lemon cuckoo bumble bee	<i>Bombus</i>	<i>citrinus</i>	Common	0
American bumble bee	<i>Bombus</i>	<i>pensylvanicus</i>	Uncommon	0

\* Information on species status was obtained from the US Forest Service (<http://www.fs.fed.us/wildflowers/pollinators/documents/BumbleBeeGuideEast2011.pdf>)

*Table 3: 2017 Butterfly Survey Results for Meadowview. Recorded as occurrence in rank order with a maximum of 3 observations over 3 surveys.*

Common Name	Genus	Species	Status*	Occurrence (out of 3 surveys)
Cabbage White	<i>Pipus</i>	<i>rapae</i>	Secure	3
Common/Clouded Sulphur	<i>Colias</i>	<i>philodice</i>	Secure	3
Pearl Crescent	<i>Phyciodes</i>	<i>tharos</i>	Secure	3
Eastern Tailed Blue	<i>Cupido</i>	<i>comyntas</i>	Secure	1
Monarch	<i>Danaus</i>	<i>plexippus</i>	Apparently Secure	1
Red Admiral	<i>Vanessa</i>	<i>atalanta</i>	Secure	1

\* Information on species status was obtained from NatureServe (<http://www.natureserve.org/conservation-tools/conservation-status-assessment>)



## ACKNOWLEDGEMENTS

Our volunteers play a vital role in the success of Virginia Working Landscapes, and to them we are grateful. The following VWL volunteers contributed their time and expertise to complete the surveys at Meadowview: Susan Gitlin, Diane Holsinger, and Penny Warren.

We would like to thank Meadowview for contributing to the efforts of Virginia Working Landscapes. The data we collect will allow us to inform sustainable management practices in the Northern Virginia region and further protect native wildlife. We look forward to working collaboratively well into the future!



VWL is supported by private philanthropy and our work is made possible by the generous contributions from our community.

To support our program, contact Molly Dodge at [DodgeM@si.edu](mailto:DodgeM@si.edu), (540) 635-0071

The Smithsonian Institution is a 501(c)(3). All contributions are tax-deductible.