

Records of Butterflies and Skippers from Fort A. P. Hill and Vicinity, Caroline County, Virginia

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ABSTRACT

Records of butterfly and skipper species, kept incidental to field surveys for rare, threatened, and endangered animals on Fort A. P. Hill (FAPH), Caroline County, Virginia, are presented. Fifty-eight species were identified within FAPH and its vicinity from 2005 to 2008. Of these, 31 new county records are documented. Additional observations made at FAPH during 1993-1994, and other Caroline County locations in 1999 and 2001, account for four additional species, two of which are new county records. Three of 32 species previously documented for Caroline County were not verified during our surveys. The total number of butterflies and skippers recorded for the county based on our surveys and previous reports is 65. This is comparable to other known surveys in the area.

Key words: Butterflies, distribution, Lepidoptera, skippers, Virginia.

INTRODUCTION

Opler et al. (2010) cited 163 species of butterflies and skippers (superfamilies Papilionoidea and Hesperioidea, respectively) that have been documented in Virginia. Roble et al. (2001) documented one more species not listed by Opler et al. (2010). Despite the popularity of butterfly watching, documentation of common species is often lacking. For example, the Eastern Tailed-blue (*Cupido comyntas*), a common, easily recognized butterfly, is not documented by Opler et al. (2010) as occurring in Caroline County although it is well within its range and ample habitat is available. This paper documents butterflies and skippers observed in Caroline County by zoological staff of the Virginia Department of Conservation and Recreation, Division of Natural Heritage (DCR-DNH), while conducting zoological surveys for rare, threatened, and endangered species on Fort A. P. Hill (FAPH) between 2005 and 2008.

STUDY AREA AND METHODS

Caroline County encompasses 138,683 ha (342,695 acres) and is located approximately 59 km (37 miles) north of Richmond, VA and 93 km (58 miles) south of

Washington, D.C. The Fall Line, which separates the Coastal Plain from the Piedmont physiographic province, occurs in the western portion of the county. FAPH is located in the northeastern portion of Caroline County (Fig. 1). At 30,318 ha (75,794 acres), FAPH comprises approximately 22% of the area of Caroline County. A small portion (ca. 40 ha) of FAPH lies in Essex County. U.S. Route 301 bisects FAPH into north and south halves. U.S. Route 17 approximates the eastern boundary, and VA Route 2 approximates the western boundary. The elevation of FAPH ranges from 6 m (20 feet) above sea level where the base touches the broad valley of the Rappahannock River near Port Royal, to 76 m (250 feet) above sea level near the northwestern boundary.

All surveyed areas reported here are within the Coastal Plain. Most observation and collection records were made on FAPH. Three other locations were off the military base: Pettigrew Wildlife Management Area, the marshes at the mouth of Goldenvale Creek, and the uplands and stream complex on a parcel held by a private timber company. The first two locations are between the eastern boundary of FAPH and the Rappahannock River, and north of U.S. Route 301. The third location is south of White Lake near Jones Corner.

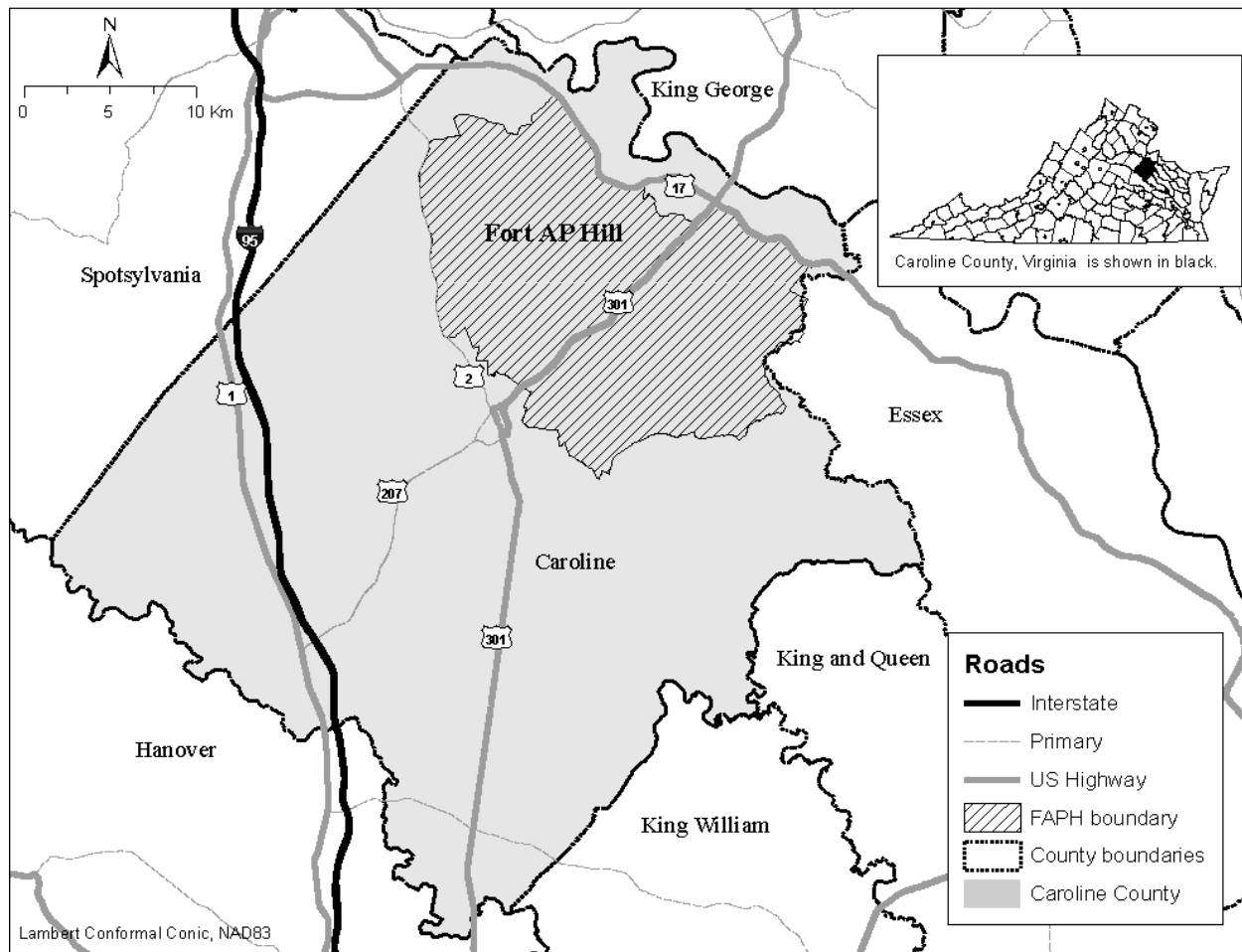


Fig. 1. Location of Fort A. P. Hill and Caroline County, Virginia.

In 2005, FAPH contracted with DCR-DNH to conduct surveys for rare, threatened, and endangered species. In the course of field work conducted from 2005 through 2008, lists of butterflies and skippers observed were kept incidental to other field observations. It was not the intent of these surveys to develop a comprehensive species list for lepidopteran species occurring on the base. Thus, the list reported here is not necessarily a complete species list for FAPH but reports observations recorded incidental to field surveys.

Surveys were conducted in a variety of habitats including fire-maintained pine savannah, old fields, roadsides, hardwood forested ravines, riverside, ponds, beaver meadows, powerline rights-of-way, upland pine/hardwood forests, freshwater marshes, and bottomland. The habitat types were not equally surveyed. For example, the fire-maintained pine savannah was contained within a controlled access area

where surveys were restricted to several days in early summer, and typically limited to morning-only surveys. Similarly, the freshwater marsh habitats on the Rappahannock River were only surveyed once.

Some voucher specimens were collected, but most records are based on visual identification. Collected specimens are deposited in the DCR-DNH collection. Records of observations were gathered from the field notes of each zoologist conducting surveys at FAPH. Observations made to the genus level, or with questions as to accurate identification were not included.

RESULTS AND DISCUSSION

Fifty-eight species of butterflies and skippers were documented by DCR-DNH between 2005 and 2008 at FAPH and the three off-base locations (Table 1). Of these, 31 species represent new county records based on comparisons to Opler et al. (2010).

DCR-DNH conducted similar surveys for rare, threatened, and endangered species at FAPH from 1993 to 1995. Notes were taken on the butterfly and skipper species observed during 1993 and 1994. Twenty-eight species were recorded during this time, all of which were also seen between 2005 and 2008.

DCR-DNH has conducted other field surveys in Caroline County over the years, including two days of surveys in the marshes of the Rappahannock River in the summer of 2001 and two surveys near the Pamunkey River in April 1999. Four species that were not seen during 2005-2008 (Fiery Skipper [*Hylephila phyleus*], Common Checkered Skipper [*Pyrgus communis*], Zebra Swallowtail [*Eurytides marcellus*] and Pipevine Swallowtail [*Battus philenor*]), were noted during these surveys. The first two species were previously documented from Caroline County (Opler et al., 2010), whereas both swallowtails represent new county records. Thus, the total known butterfly and skipper fauna of Caroline County is 65 species, including 33 new county records reported herein. Of the 32 species cited by Opler et al. (2010), only three were not observed by DCR-DNH: Wild Indigo Duskywing (*Erynnis baptisiae*), Hobomok Skipper (*Poanes hobomok*), and Hayhurst's Scallopwing (*Staphylus hayhurstii*).

By way of comparison, DCR-DNH documented 61 species of butterflies and skippers on Marine Corps Base – Quantico in the northeastern Piedmont of Virginia, from habitats similar to those at FAPH, during a 1998-1999 survey (Chazal, 2000). Taber (2003) reported 66 species from the southern tip of the Delmarva Peninsula during surveys between 1995 and 2003. Fifty-one species of butterflies and skippers were documented by DCR-DNH at Fort Pickett – Maneuver Training Center in the southern Piedmont of Virginia incidental to surveys for rare, threatened, and endangered species in 1993, 1999, and 2000 (Chazal et al., 2004). It is likely that more species will be added to the Caroline County list of butterflies and skippers with additional, targeted efforts.

The diversity, complex life cycles, and numbers of Lepidoptera make them an important component of ecological systems as pollinators, prey, and primary consumers. Butterflies and skippers are relatively well-studied groups of insects because of their accessibility and aesthetic appeal; however, they are often overlooked as an important part of natural resource management. The first step to including them in the conservation

process is to identify the species present and the habitats with which they are associated. The records presented here should help to fill information gaps in our understanding of the distribution of butterflies and skippers in Virginia.

ACKNOWLEDGMENTS

We are grateful to several field assistants for their efforts: Angela Hutto, Maureen Dougherty, Arthur Evans, Paul Bedell, Ryan Knisley, and Trey Wahl. Also, we extend our appreciation to Terry Banks, Lawton Grinter, and Kristine Brown of Fort A.P. Hill for coordinating our work on the base. Thanks to Richard H. Smith who provided the Pelham (2008) species order and reference.

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Table 1. Butterfly and skipper species documented by DCR-DNH in Caroline County, Virginia. Species appear in taxonomic order according to Pelham (2008). 'Documented records' are taken from Opler et al. (2010). DCR-DNH records are classified as 'C' and 'O' for collected specimens and observations, respectively. Records include those taken during surveys on FAPH in 1993-1994, on private property in 1999, along the Rappahannock River in 2001, and during surveys on FAPH and its vicinity from 2005-2008. The last column compares the DCR-DNH records to those previously documented (Opler et al., 2010), where CR = county record, NV = not verified, and V = verified.

Scientific Name Common Name	Opler et al., 2010	DCR-DNH records 1993-1994	DCR-DNH records 1999 + 2001	DCR-DNH records 2005-2008	Comparison to Opler et al.
FAMILY HESPERIIDAE					
<i>Epargyreus clarus</i> Silver-spotted Skipper	X	O		C, O	V
<i>Achalarus lyciades</i> Hoary Edge				C, O	CR
<i>Thorybes bathyllus</i> Southern Cloudywing				C, O	CR
<i>Thorybes pylades</i> Northern Cloudywing				C, O	CR
<i>Thorybes confusus</i> Confused Cloudywing	X			C	V
<i>Staphylus hayhurstii</i> Hayhurst's Scallopwing	X				NV
<i>Pholisora catullus</i> Common Sootywing			C-2001	C, O	CR
<i>Erynnis icelus</i> Dreamy Duskywing				C	CR
<i>Erynnis brizo</i> Sleepy Duskywing				C, O	CR
<i>Erynnis juvenalis</i> Juvenal's Duskywing		O		C, O	CR
<i>Erynnis horatius</i> Horace's Duskywing				C, O	CR
<i>Erynnis baptisiae</i> Wild indigo duskywing	X				NV
<i>Pyrgus communis</i> Common Checkered Skipper	X		C-2001		V
<i>Ancyloxypha numitor</i> Least Skipper	X	O		C, O	V
<i>Amblyscirtes vialis</i> Common Roadside Skipper				C, O	CR
<i>Lerema accius</i> Clouded Skipper	X			O	V
<i>Hylephila phyleus</i> Fiery Skipper	X		O-2001		V
<i>Polites origenes</i> Crossline Skipper				C, O	CR
<i>Wallengrenia egeremet</i> Northern Broken Dash				C	CR
<i>Pompeius verna</i> Little Glassywing				C, O	CR
<i>Atalopedes campestris</i> Sachem	X			C, O	V
<i>Poanes hobomok</i> Hobomok Skipper	X				NV

Table 1 (continued).

Scientific Name Common Name	Opler et al., 2010	DCR-DNH records 1993-1994	DCR-DNH records 1999 + 2001	DCR-DNH records 2005-2008	Comparison to Opler et al.
FAMILY HESPERIIDAE					
<i>Poanes zabulon</i> Zabulon Skipper	X			C, O	V
<i>Euphyes dion</i> Dion Skipper				C, O	CR
FAMILY PAPILIONIDAE					
<i>Battus philenor</i> Pipevine Swallowtail			O-2001		CR
<i>Eurytides marcellus</i> Zebra Swallowtail			O-2001		CR
<i>Papilio polyxenes</i> Black Swallowtail		O		O	CR
<i>Papilio glaucus</i> Eastern Tiger Swallowtail	X	O		O	V
<i>Papilio troilus</i> Spicebush Swallowtail	X	O	C-1999	O	V
FAMILY PIERIDAE					
<i>Abaeis nicippe</i> Sleepy Orange	X			O	V
<i>Pyrisitia lisa</i> Little Yellow				O	CR
<i>Colias philodice</i> Clouded Sulphur	X	O		O	V
<i>Colias eurytheme</i> Orange Sulphur	X	O		C, O	V
<i>Phoebis sennae</i> Cloudless Sulphur	X			C, O	V
<i>Anthocharis midea</i> Falcate Orangetip		O		C, O	CR
<i>Pieris rapae</i> Cabbage White	X	O		O	V
FAMILY LYCAENIDAE					
<i>Lycaena phlaeas</i> American Copper				O	CR
<i>Callophrys gryneus</i> Juniper Hairstreak		O		C, O	CR
<i>Callophrys henrici</i> Henry's Elfin		O	C-1999	C, O	CR
<i>Callophrys niphon</i> Eastern Pine Elfin		O		C, O	CR
<i>Calycopis cecrops</i> Red-banded Hairstreak	X	O		C, O	V
<i>Strymon melinus</i> Gray Hairstreak	X			C, O	V
<i>Cupido comyntas</i> Eastern Tailed Blue				C, O	CR
<i>Celastrina ladon</i> Spring Azure		O		C, O	CR
<i>Celastrina neglecta</i> Summer Azure				C, O	CR

Table 1 (continued).

Scientific Name Common Name	Opler et al., 2010	DCR-DNH records 1993-1994	DCR-DNH records 1999 + 2001	DCR-DNH records 2005-2008	Comparison to Opler et al.
FAMILY NYMPHALIDAE					
<i>Libytheana carinenta</i> American Snout	X	O		O	V
<i>Danaus plexippus</i> Monarch	X	O		O	V
<i>Limenitis arthemis astyanax</i> Red-spotted Purple	X	O		O	V
<i>Limenitis archippus</i> Viceroy		O		O	CR
<i>Euptoieta claudia</i> Variegated Fritillary	X			O	V
<i>Speyeria cybele</i> Great Spangled Fritillary	X	C, O		O	V
<i>Asterocampa celtis</i> Hackberry Butterfly				C, O	CR
<i>Vanessa virginiensis</i> American Lady	X	O		O	V
<i>Vanessa cardui</i> Painted Lady		O		O	CR
<i>Vanessa atalanta</i> Red Admiral	X			O	V
<i>Nymphalis antiopa</i> Mourning Cloak				O	CR
<i>Polygonia interrogationis</i> Question Mark	X	O		O	V
<i>Polygonia comma</i> Eastern Comma	X		C-1999	O	V
<i>Junonia coenia</i> Common Buckeye	X	O		O	V
<i>Chlosyne nycteis</i> Silvery Checkerspot				O	CR
<i>Phyciodes tharos</i> Pearl Crescent	X	O		C, O	V
<i>Satyrodes appalachia</i> Appalachian Brown		O		C, O	CR
<i>Hermeuptychia sosybius</i> Carolina Satyr	X			C, O	V
<i>Megisto cymela</i> Little Wood Satyr		O		O	CR
<i>Cercyonis pegala</i> Common Wood Nymph		O		O	CR
TOTALS	32	28	8	58	CR = 33 NV = 3 V = 29 Sum = 65