

Survey of Moth Diversity in Congaree National Park



Southeastern Naturalist, Volume 17, Monograph 11, 2018

The *Southeastern Naturalist* Monograph series . . .

- ◆ Natural history science manuscripts with a regional focus on southeastern North America, whose page length and focus precludes inclusion in regular journal issues, can now be published separately as journal monographs.
- ◆ As with regular journal articles, all monographs are peer-reviewed and edited, and are fully indexed. Monographs are published online in full text version. Monographs are available by special request as single copies from authors or the journal.

The *Southeastern Naturalist* . . .

- ◆ A quarterly peer-reviewed and edited interdisciplinary natural history science journal with a regional focus on the southeastern United States (ISSN 1528-7092 [print], ISSN 1938-5412 [online]).
- ◆ Featuring research articles, notes, and research summaries on terrestrial, fresh-water, and marine organisms, and their habitats. The journal's versatility also extends to publishing longer manuscripts as separate monographs and symposium proceedings or other collections of related papers as special issues.
- ◆ Focusing on field ecology, biology, behavior, biogeography, taxonomy, evolution, anatomy, physiology, geology, and related fields. Manuscripts on genetics, molecular biology, anthropology, etc., are welcome, especially if they provide natural history insights that are of interest to field scientists.
- ◆ **Now** includes a separate Notes section presenting brief but interesting and significant field observations.
- ◆ **Now** offers authors the option of publishing large maps, data tables, audio and video clips, and even powerpoint presentations as online supplemental files which will be linked to the full-text version of the journal in the BioOne.org database.
- ◆ Proposals for Special Issues, either as print publications or more affordable online-only issues, are welcome.
- ◆ Indexed in Web of Knowledge (includes Web of Science, Current Contents Connect, Biological Abstracts, BIOSIS Citation Index, BIOSIS Previews, CAB Abstracts), PROQUEST, SCOPUS, BIOBASE, EMBiology, Current Awareness in Biological Sciences (CABS), EBSCOhost, VINITI (All-Russian Institute of Scientific and Technical Information), FFAB (Fish, Fisheries, and Aquatic Biodiversity Worldwide), WOW (Waters and Oceans Worldwide), and Zoological Record. Arrangements for indexing in other services are pending.
- ◆ The journal staff is pleased to discuss ideas for manuscripts and to assist during all stages of manuscript preparation. The journal has a mandatory page charge to help defray a portion of the costs of publishing the manuscript. Instructions for Authors are available online on the journal's website (www.eaglehill.us/sena).
- ◆ Co-published with the *Northeastern Naturalist* (ISSN 1092-6194 [print], ISSN 1938-5307 [online]), published since 1997. The journals together serve as a matched-pair of regional journals that provide an integrated publishing and research resource for the eastern part of North America. Also co-published with the *Caribbean Naturalist* (ISSN #2326-7119), an online publication that extends our coverage of natural history research to the waters, coastal areas and islands of the Caribbean region, and the *Urban Naturalist* (ISSN #2328-8965), an online publication that covers natural history research pertaining to urban areas worldwide.
- ◆ Printed by Allen Press.
- ◆ Available online in full-text version on the journal's website (www.eaglehill.us/sena) and in the BioOne database (www.bioone.org, a collaborative effort of Allen Press, AIBS, et al.), EBSCOhost product line, and the Proquest Information and Learning databases (www.il.proquest.com).
- ◆ May be ordered through any major subscription service.
- ◆ Adopted as the official journal of the Association of Southeastern Biologists and offered as a special member benefit option. For more details, go to www.sebiologists.org.

Cover Photograph: *Actias luna* (Luna Moth) in Congaree National Park. Photo © Jessica Grant.

Survey of Moth Diversity in Congaree National Park

Joseph D. Culin^{1,*}, Brian G. Scholtens², and John A. Snyder³

Abstract - We surveyed moth populations in Congaree NP (Richland County, SC) between November 2009 and October 2010. We conducted primary sampling for 2 nights per month using ultraviolet bucket-traps and mercury-vapor lamps with sheets in accessible areas of the park. We also collected specimens near building lights throughout the study and conducted bait sampling during cold-weather months. We curated 10,950 specimens. Of these, we have identified 10,524 to species and 134 to genus, with 15 of those being as yet unnamed new species. There are 295 specimens that remain unidentified. Our survey yielded 1002 species in 547 genera and 49 families, raising the confirmed moth data from the park to 1005 species, 549 genera, and 49 families. Our data included 161 species previously unreported from SC. Of those, 55 species have not been reported to occur in the adjacent states of GA or NC. We recorded only 3 non-native species that collectively totaled 6 individuals.

Introduction

Congaree National Park encompasses ~10,725 ha (26,500 ac) varying in elevation from 27.4 m (90 ft) to 61.0 m (200 ft) in the southern portion of Richland County, SC (Fig. 1C). It was established to protect the largest contiguous tract of old-growth bottomland hardwood forest (~4452 ha [11,000 ac]) remaining in the US. The park encompasses a relatively intact and unspoiled floodplain ecosystem renowned for its biodiversity. A unique aspect of the park is the significant flooding that occurs an average of 10 times per year when the Congaree River overflows its banks along the southern border of the park, which presents special challenges to species that occur there (Doyle 2009). Designated as an International Biosphere Reserve in 1983, Wilderness Area in 1988, Important Bird Area in 2001, and Ramsar Convention Wetland of International Importance in 2012, the park serves as a baseline site for environmental research and monitoring. A long-term goal of the park is to provide essential habitat for species dependent on this old-growth bottomland hardwood ecosystem, with particular emphasis on endangered or threatened species, or species uncommon elsewhere (NPS 2004, 2014). As part of the effort to maintain this unique ecosystem, the majority of Congaree NP is maintained in an unimproved state with areas accessible through roads or trails concentrated in the western third of the park (Fig. 1A). Knowledge of the biological diversity of all taxa occurring within the park is a critical component in assuring long-term preservation of this unique habitat.

¹Department of Plant and Environmental Sciences, Clemson University, Clemson, SC 29634. ²Department of Biology, College of Charleston, Charleston, SC 29424. ³Department of Biology, Furman University, Greenville, SC 29613. *Corresponding author - jculin@clemson.edu.

Both adult moths, as a major group of pollinators, and their larvae, as important herbivores, can have significant impacts upon plant populations and communities. Moth species, in both the adult and larval stages, are important food sources for many species of vertebrate and invertebrate predators. Moths are the predominant food source for *Corynorhinus rafinesquii* (Lesson) (Rafinesque's Big-eared Bat) (Hurst and Lacki 1997, Lacki and Ladeur 2001), a resident of the park that is considered imperiled in SC (state rank S2), and is included as a rare species in the Park's Foundation Document (NPS 2014). Moth species play a significant role in the ecosystems in which they occur; thus, they can serve as indicators of current ecosystem health and can be used to monitor environmental change.

This project provides a year-long assessment of the composition, seasonal trends, and distribution of the moth fauna within accessible areas of Congaree NP. This nearly comprehensive inventory of documented species provides a framework for identifying species that might serve as indicators for long-term health of the bottomland hardwood floodplain ecosystem, and provides a baseline from which to measure long-term change.

The overall objectives of this project were to document moth diversity within Congaree NP and to develop a baseline inventory of moth species. This study documented moth diversity within Congaree NP through a year-long survey of adult moths in a variety of accessible habitats within the park, which we integrated with previously collected verifiable data; documented the occurrence of species of special concern, such as rare, threatened, endangered, non-native, or invasive species; and provided baseline information to help park managers to develop a monitoring strategy tailored to assess the status of species of special concern that occur within the park.

Materials and Methods

We conducted surveys from November 2009 through October 2010. We performed the majority of sampling using 12-V battery-powered ultraviolet bucket-traps and mercury-vapor (MV) lamps with sheets. Due to the need for a vehicle or service cart to transport traps, batteries, generator, etc. to sample sites, we concentrated our survey along trails and roads. Survey sites included areas near the Harry Hampton Visitor Center and Old-Growth Bottomland Forest Research and Education Center; along the Boardwalk Loop Trail, Sims Trail, National Park Road, West Boundary Road, US 601; and where both Garrick Road and South Cedar Creek Road terminate at the northern park boundary (Fig. 1A, B). We conducted supplemental sampling by hand-collecting near exterior building lights throughout the study, and baiting in November, December, January, February, March, April, and October. In addition, park staff deployed UV traps, collected near building lights, or baited on several dates during the survey. We were unable to sample portions of the West Boundary Road and much of the non-elevated west and south sections of the Boardwalk Loop Trail between December 2009 and March 2010 due to flooding.

Survey-site locations are shown in Figure 1; collection sites and their GPS coordinates, collection methods, months sampled, total specimens, and total species collected for each site are presented in Table 1. Habitat types and plant data from

the Congaree NP GIS vegetation layer for each collection site are presented in Appendix 1. Renovation of the Boardwalk Loop Trail, completed after this study, has resulted in minor differences between our site nomenclature and the current boardwalk layout.

On each primary sampling night, we deployed at dusk and retrieved shortly after sunrise multiple UV traps. We placed a container equipped with a wick and holding ethyl acetate ($C_4H_8O_2$, BioQuip Products, Inc., Rancho Dominguez, CA) within each trap as a killing source. We hand-collected moths observed on the outside of traps at retrieval and added them to the sample. We returned traps to the Old-Growth Bottomland Forest Research and Education Center, where collected materials were sorted and by-catch removed.

On all primary sampling nights, except during July and August, we employed 1 or 2 MV lamps with sheets. We placed 1 of these near either the Old-Growth Bottomland Forest Research and Education Center or the Harry Hampton Visitor Center to allow use of drop cords from electrical outlets. The other trap was powered using a small generator, which allowed us to place the trap on the Boardwalk

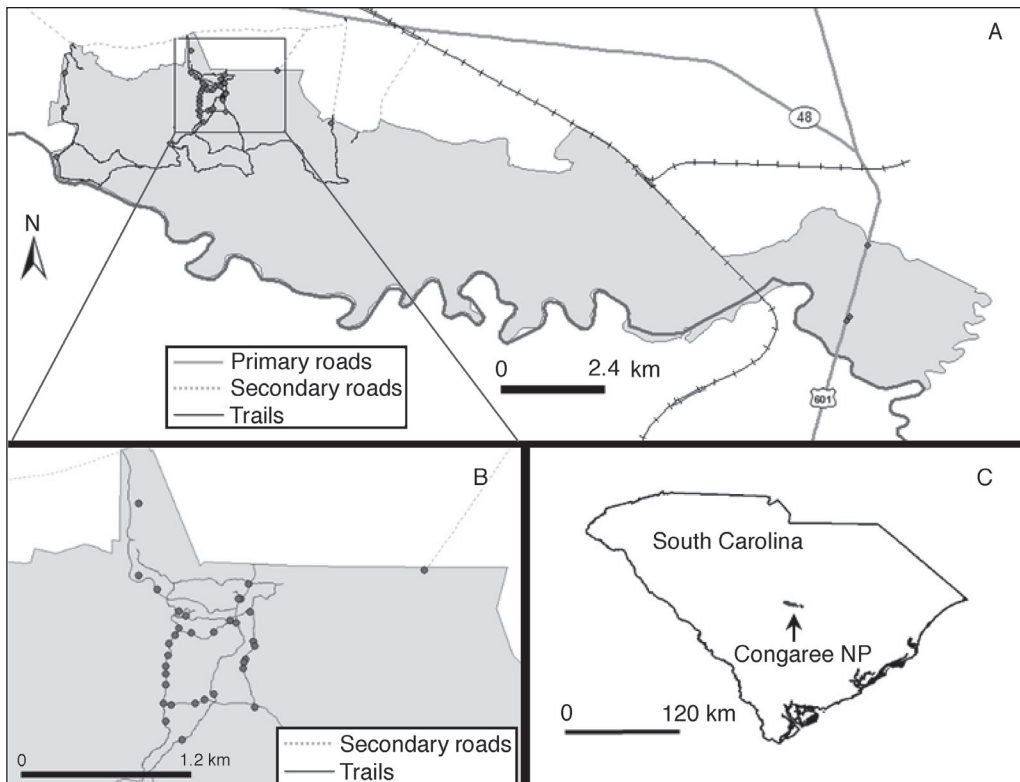


Figure 1. Sites surveyed for moths in Congaree NP between November 2009 and October 2010. (A) All sites included in the survey except for 1 site on the Cedar Creek canoe trail. (B) Detailed location of sites located near the Harry Hampton Visitor Center, Research and Education Center and along the Boardwalk Loop Trail. (C) Location of Congaree NP in South Carolina. Data from Congaree NP (park boundary, park roads and trails), ESRI (railroads, major highways, rivers), and SC Department of Transportation (Garrick Road).

J.D. Culin, B.G. Scholtens and J.A. Snyder

Table 1. Sites surveyed between November 2009 and October 2010 in Congaree NP. Boardwalk pullouts are numbered starting with the pullout closest to the Harry Hampton Visitor Center. Renovation of the Boardwalk Loop Trail has slightly changed its configuration since the completion of this study. Collection method: UV = ultraviolet lamp bucket trap, MV = mercury-vapor lamp with sheet, BL = building lights, and B = bait. Total # = number of specimens collected; numbers in parentheses are the count of specimens identified only to genus. [Table continued on following page.]

Collection sites	GPS °N	GPS °W	Collection method	2009												2010												Total #	Total species
				Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct		
Harry Hampton Visitor Center	33.8296	80.8237	BL	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	210 (2)	120		
Research and Education Center (REC)	33.8310	80.8190	MV, BL, B	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1446 (38)	523		
REC at Bluff Trail	33.8232	80.8183	UV																							279	161		
REC bathhouse	33.8310	80.8192	BL																							20	17		
National Park Road at powerline cut	33.8392	80.8277	UV	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	674 (7)	304		
National Park Road at trail	33.8318	80.8261	UV																							228 (5)	141		
National Park Road in oak woods	33.8330	80.8277	UV																							197 (5)	120		
Trail from picnic area to boardwalk	33.8300	80.8243	MV																							184 (8)	117		
Elevated boardwalk, NW corner ^A	33.8285	80.8243	UV	x																						18	17		
Elevated boardwalk, 3 rd pullout	33.8281	80.8232	UV																							50	39		
Elevated boardwalk, 5 th pullout	33.8282	80.8213	UV																							105 (1)	69		
Elevated boardwalk, 7 th pullout	33.8292	80.8199	UV																							59	36		
Elevated boardwalk, 8 th pullout	33.8299	80.8182	MV, UV	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1258 (17)	435		
Elevated boardwalk, 13 th pullout	33.8274	80.8179	UV																							159	95		
Elevated boardwalk, 14 th pullout	33.8270	80.8178	UV																							12	12		
Elevated boardwalk, 17 th pullout	33.8259	80.8186	UV																							331 (2)	138		
Elevated boardwalk, 18 th pullout	33.8256	80.8187	UV																							2	1		
Elevated boardwalk, 19 th pullout	33.8251	80.8188	UV																							42	34		
Elevated boardwalk, 24 th pullout	33.8218	80.8178	UV																							270	158		
Low boardwalk, 1 st pullout	33.8279	80.8246	UV																							158	93		
Low boardwalk, 2 nd pullout	33.8272	80.8251	UV																							39	26		
Low boardwalk, 3 rd pullout	33.8262	80.8252	UV																							56	45		

Table 1, continued.

Collection sites	GPS °N	GPS °W	Collection method	2009												2010					Total #	Total species
				Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct							
Low boardwalk, 4 th pullout	33.8253	80.8254	UV												x				119	69		
Low boardwalk, 5 th pullout	33.8246	80.8254	UV													x			9	6		
Low boardwalk, 6 th pullout	33.8237	80.8254	UV													x			3	3		
Low boardwalk, #7 (SW corner)	33.8221	80.8256	UV													x			133	69		
Low boardwalk, #8 (end of spur)	33.8206	80.8254	UV													x			92	54		
Low boardwalk, 9 th pullout	33.8220	80.8249	UV													x			123 (2)	76		
Low boardwalk, 11 th pullout	33.8221	80.8229	UV													x			122	83		
Low boardwalk, 12 th pullout	33.8224	80.8221	UV													x			212 (2)	129		
Sims Trail (gate near REC)	33.8290	80.8194	UV													x			11	6		
Sims Trail at bridge	33.8229	80.8213	MV, UV													x			581 (8)	213		
Sims Trail in oak woods	33.8190	80.8240	UV													x			66	48		
Garrick Road	33.8335	80.8033	UV													x			1224 (12)	445		
Cedar Creek Road at canoe landing	33.8186	80.7880	UV													x			157	102		
US 601 at north bridge	33.7840	80.6360	UV													x			6	5		
US 601, West Road (hillside)	33.7627	80.6421	UV													x			118 (2)	92		
US 601, West Road (woods)	33.7639	80.6411	UV													x			345 (14)	189		
West Boundary Road at clearing with cut logs	33.8229	80.8637	UV													x			573 (1)	219		
West Boundary Road at River Trail	33.8090	80.8658	UV													x			687 (6)	243		
West Boundary Road 0.16 km inside gate	33.8329	80.8635	UV													x			143 (2)	88		
Cedar Creek site via canoe ^B	n/a	n/a	UV													x			3	2		

^ACorner of elevated boardwalk between 1st and 2nd pullouts.

^BApproximately mid-way between Old Bluff Road and South Cedar Creek Road canoe-launch sites.

Loop Trail or Sims Trail. We placed moths that landed on the sheet, ground, or foliage either in killing jars containing ethyl acetate (Macrolepidoptera) or alive in individual vials (Microlepidoptera). We turned on the lamps shortly after dusk and they remained on until shortly after sunrise, with most collecting taking place between dusk and midnight, followed by a final check when we turned the light off in the morning.

With the exception of the Old Growth Bottomland Research and Education Center location, all UV- and MV-lamp trapping sites were situated well away from any artificial light sources. When trapping occurred at the Research and Education Center, all exterior building lights were off and traps were placed at least 30 m (100 ft) from the building. For all UV trap and MV lamp collections, the approximate duration for each trapping session is presented in Appendix 2 as hours of darkness. We calculated hours of darkness based on the time between end of civil twilight (approximate sunset day 1) to beginning of civil twilight (approximate sunrise day 2). Other lunar and sky data used in this study include time of moon rise and set, percentage of moon disk visible, hours of moonlight during dark, and average percent cloud cover during dark (Appendix 2). Weather data include rainfall, and minimum and maximum values for temperature, relative humidity (RH), and wind speed for the time between the end and beginning of civil twilight (Appendix 3). Civil twilight and lunar data were obtained from the US Naval Observatory (web-site http://aa.usno.navy.mil/data/docs/RS_OneYear.php) for Columbia, SC. We obtained cloud-cover data from the North American Regional Reanalysis (NARR) cell (Mesinger et al. 2006) most closely aligned with the geographic center of Congaree NP. Rainfall, temperature, RH, and wind-speed data were provided by Congaree NP from an on-site weather station. Selection of sample dates depended on the authors' schedules, availability of housing, and access to laboratory space at the Old-Growth Bottomland Research and Education Center; thus, we were unable to schedule sampling to consistently coincide with weekends nearest a new moon.

From November 2009 through April 2010 and in October 2010, we applied a molasses and beer bait on 15–20 individual trees located along the road between the Research and Education Center and Sims Trail gate. We checked bait locations several times between dusk and midnight and again shortly after sunrise. All moths observed at bait locations were hand-collected and placed in killing jars.

Following collection, we returned specimens to the Old-Growth Bottomland Research and Education Center where trap catches were sorted. Our goal was to survey the composition of the moth population; thus, we retained for identification only 3–5 specimens of each morphospecies from each collection site. We placed specimens on spreading boards shortly after collection until available space was filled. The number of moths greatly exceeded the availability of preparation space on most collection dates, so we placed remaining moths in plastic snap-lid containers and returned them to either Clemson University, College of Charleston, or Furman University, where they were stored frozen until prepared for identification. We collected many Microlepidoptera in individual vials, to be stored alive in a refrigerator and, over the course of several days, killed and prepared.

We completed the majority of specimen preparations and identifications by September 2013, but identification of some Microlepidoptera continued through 2017. For several difficult-to-identify genera, B.G. Scholtens dissected specimens to confirm identifications. In total, Scholtens completed 300 dissections (1 Gelechiidae; 37 Tortricidae; 59 Crambidae; 115 Pyralidae; 88 Geometridae). All Pterophoridae were identified by D. Matthews Lott (McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, FL). Species identifications in this report follow the taxonomic status and P3 numbering system in Pohl et al. (2016). We use *Henricus edwardsiana* (Walsingham), rather than *H. contrastana* (Kearfott), based on a recent report by J. Brown (US Dept. of Agriculture, Systematic Entomology Laboratory, National Museum of Natural History, Washington, DC) posted at <http://mothphotographersgroup.msstate.edu/species.php?hodes=3797>. Sources used in confirming identifications include Covell (2005), Ferguson (1978, 1985, 2008), Gilligan and Wright (2013), Gilligan et al. (2008), Handfield (1999), Heinrich (1923, 1926, 1956), Heppner (2003), Hodges (1974, 1978, 1986, 1999), Lafontaine (1987, 1998, 2004), Lafontaine and Poole (1991), Lafontaine and Schmidt (2010), Lee et al. (2009), Martinez (2010), Mikkola et al. (2009), Miller (1987), Munroe (1972–1973, 1976), Neunzig (1986, 1990, 1997, 2003), Poole (1995), Powell and Brown (2012), Regier et al. (2014), Regier et al. (2015), Rings et al. (1992), Scholtens and Solis (2015), Sohn et al. (2013), Sohn et al. (2015), and Wright and Gilligan (2015).

The list of species that we report as new records for South Carolina is based on the South Carolina Moth Searchable Checklist (<http://insect.furman.edu/sc-moths/>) maintained by J.A. Snyder. Information on the development of that database can be found on that website under Important Information, with data sources listed at <http://insect.furman.edu/sc-moths/collection-legend.htm>. We determined the occurrence of new SC record species in nearby states based on North American Moth Photographers Group (<http://mothphotographersgroup.msstate.edu/>) distribution maps. We feel that this site maintains the most readily available, and current, synopsis of moth species distributions.

We used the first 3 Hill numbers (Hill 1973)—species richness (0D), the Shannon exponential index (1D), and the inverse Simpson index (2D)—to assess diversity. We calculated these values using EstimateS (Colwell 2013). Chao et al. (2014) noted that because richness is based simply on species presence, it is most sensitive to changes in rare species, while the Shannon exponential index weights all species in relation to their abundance, and the inverse Simpson index emphasizes the most abundant species. Morris et al. (2014) found that using multiple diversity measures provided a better understanding of how both rare and abundant species affect community structure. We employed the number of shared species and the Chao–Sorenson similarity index to compare moth communities among 8 major plant communities found within Congaree NP. We chose the Chao–Sorenson index because it reduces the negative bias inherent to some traditional similarity indices (Chao et al. 2005).

We assigned plant communities based on the GIS vegetation layer provided by Congaree NP staff (Thompson 1998), mapped sample sites onto the vegetation

layer, and determined the plant community for each sampling site to include all plant species listed for individual vegetation types within 30 m (100 ft) of the site (Appendix 1). This analysis resulted in 8 plant communities: upland mixed hardwoods and pines, upland pines, vine shrubland, mixed bottomland hardwoods, *Taxodium distichum* (L.) Rich (Bald Cypress) dominant, *Nyssa aquatica* L. (Water Tupelo) dominant, swamp forest, and wet *Pinus palustris* Mill. (Longleaf Pine) savannah. We employed the Chao–Sorenson similarity index to compare plant species composition among the 8 major plant communities in which we surveyed moths. It should be noted that 2 habitat types do not have detailed plant data in the GIS vegetation layer (Appendix 1). First, the GIS vegetation layer labels sites along the National Park Road and near the Harry Hampton Visitor Center simply as successional *Pinus* (pine) and mixed hardwoods, and does not include a list of the most common species. Second, the area along US 601 is a relatively new addition to Congaree NP and was not included in the existing GIS vegetation layer. This area is designated as a wet Longleaf Pine savannah habitat with Longleaf Pine as the only listed species. Comparisons that include these 2 habitat types are biased due to a lack of detailed plant data.

The primary repository of specimens from this survey is the Clemson University Arthropod Collection (CUAC; <https://sites.google.com/site/clemsonarthropodcollection/>) with duplicate material housed at the College of Charleston Department of Biology and at the Furman University Zoological Collection (<http://insect.furman.edu/collection/>; search under Richland County, SC). The database for all species recorded from this survey is maintained by B.G. Scholtens at College of Charleston (Filemaker Pro® format), and Congaree NP (Microsoft Excel® format). Persons interested in these data should contact cong_information@NPS.gov or B.G. Scholtens for additional information.

We took photographs of all species using a Canon EOS 30D camera with macro Twin Lite MT-24EX flash system. Based on size of the specimen, we used one of the following Canon lenses: EF 180mm (f/3.5 Macro USM), EF 100 mm (f/2.8 Macro USM), MP-E 65 mm (f/2.8 1–5x Macro Photo), or EF-S 17–85 mm (f/4–5.6 IS USM). We archived a single photograph for each monomorphic species and archived photographs of each morph for polymorphic species. Photographs are archived on the Open Parks Network® (<https://openparksnetwork.org/explore/collections/cong-moths/>) and at Congaree NP.

Results and Discussion

During our year-long survey, we archived 10,950 specimens. Of these, 10,524 have been identified to species (Appendix 4A). Of the remainder, we identified 134 to genus, with 15 being unnamed new species (Appendix 4B). There are 295 as-yet-unidentified specimens. Our survey included 1002 species, 547 genera, and 49 families of moths (Appendix 4A, B). There were 4 families and 20 genera that did not contain any specimens identified to species (Appendix 4A, B). Prior to our survey, there were records of 40 moth species in 40 genera and 12 families from Congaree NP. With the exception of *Acoloitus falsarius* Clemens (Zygaenidae),

Citheronia regalis (Fabricius) (Saturniidae), and *Schizura concinna* (J.E. Smith) (Notodontidae), we collected all previously reported species during our survey (Appendix 4A). Our survey did not contain specimens in the genera *Acoloitus* or *Citheronia*. With the completion of our survey, there are now 1005 species, 549 genera, and 49 families of moths documented from Congaree NP. We note that there was a prior record of *Arctia caja* (L.) (Eribidae) from Congaree NP, but we strongly suspect that this species was recorded in error—it is not known to occur in the Southeastern US, so we have not included it in the totals above.

Our data include 161 species previously unrecorded in SC (Appendix 4A). Of those, 30 (18.6%) have not been reported from the nearby states of AL, FL, GA, NC, TN, or VA. An additional 25 (15.5%) of those 161 species have not been reported from GA or NC, contiguous to SC, but are known from AL, FL, TN, or VA (Appendix 4A). The majority of the new SC records are Microlepidoptera, and their apparent absence across much of the Southeast likely reflects a lack of collection rather than disjunct populations.

Our survey recorded 3 non-native moth species in Congaree NP: *Noctua pronuba*, *Ostrinia nubilalis* and *Plutella xylostella* (Appendix 4A). Collectively, these taxa represented only 6 of the 10,524 specimens identified to species during this survey. Our data suggest that few introduced moth species have become established in Congaree NP's intact native ecosystems. It would be valuable to compare these data with the surrounding disturbed areas.

Abundance of both specimens (Fig. 2) and species (Fig. 3) exhibited similar seasonal trends with low numbers from November through February, then increasing through March and April. The number of specimens exhibited a 3-month peak

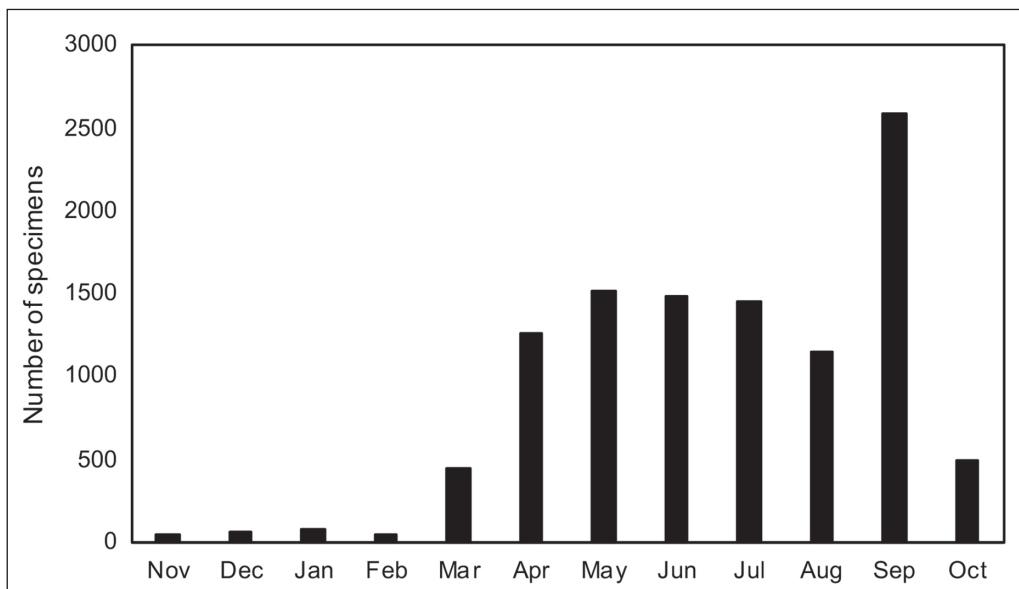


Figure 2. Seasonal trend in the number of moth specimens collected in Congaree NP from November 2009 through October 2010. Data presented include all specimens with an assigned P3 number (Appendix 4A, B).

from May through July, while the number of species peaked during May and June. Numbers of both specimens and species declined slightly through August followed by a dramatic increase in September before declining sharply in October.

In our survey, 3 species are represented by >100 individuals, 26 between 51 and 100 individuals, 81 between 26 and 50 individuals, and 892 with ≤ 25 individuals (Fig. 4, Appendix 4A). We observed a similar distribution pattern among families, with 4 families represented by >1000 individuals, 8 with between 101 and 999

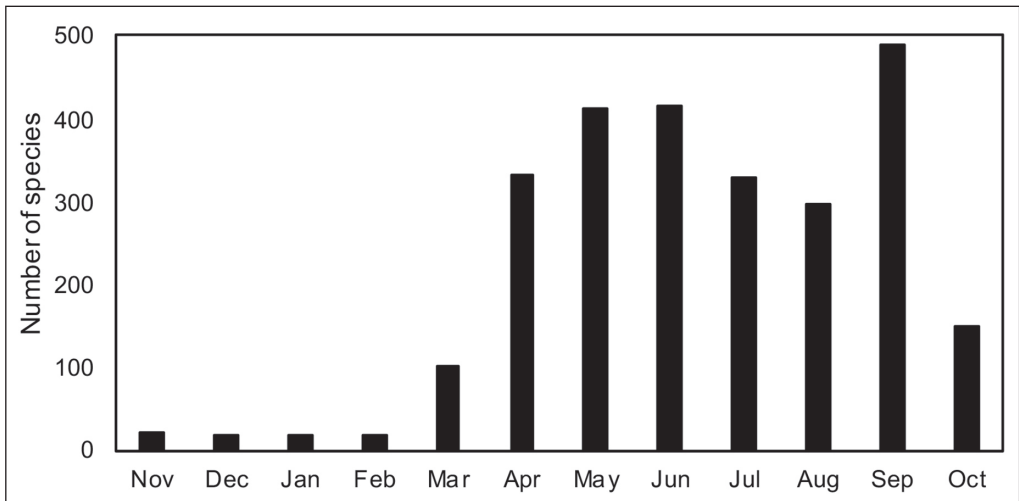


Figure 3. Seasonal trend in the number of moth species collected in Congaree NP from November 2009 through October 2010. Data presented include only those specimens identified to species (Appendix 4A).

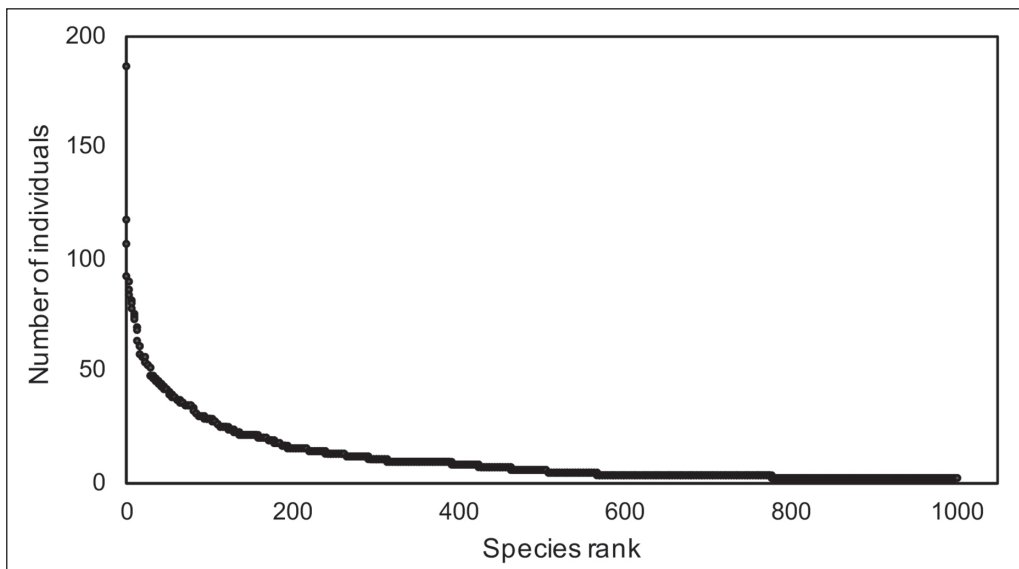
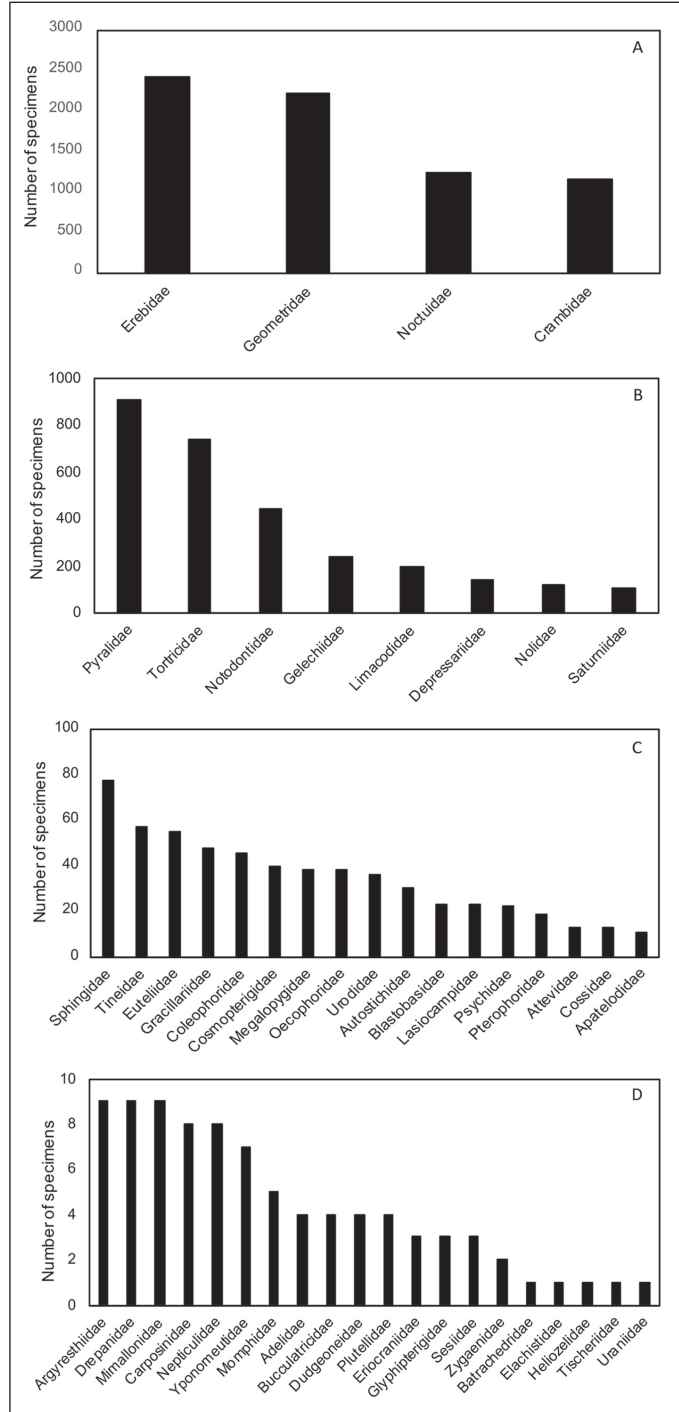


Figure 4. Rank abundance curve for moth species collected in Congaree NP from November 2009 through October 2010. Data presented include only those specimens identified to species (Appendix 4A).

individuals, 17 between 11 and 100 individuals, and 20 families having ≤ 10 individuals (Fig. 5, Appendix 4A, B). Of the 1002 species recorded, 396 (39.5%) were collected only during a single month and 219 (21.9%) were recorded during only 2

Figure 5. Relative abundance of moth families collected in Congaree NP between November 2009 and October 2010. (A) Families with >1000 individuals. (B) Families with 101–999 individuals. (C) Families with 11–100 individuals. (D) Families with 1–10 individuals. Data presented include all specimens with an assigned P3 number (Appendix 4A, B).



months (Fig. 6, Appendix 4A). Conversely, both *Iridopsis defectaria* and *Macaria aequiferaria* were present in collections during 9 months and *Nemoria lixaria* during 10 months (Fig. 6, Appendix 4A).

Overall moth diversity in Congaree NP was relatively high (${}^0D = 1002$, ${}^1D = 505.01$, and ${}^2D = 316.01$), while Simpson's evenness ($E = 0.32$) was low (Fig. 7). The low evenness-value was expected based on the distribution of individuals

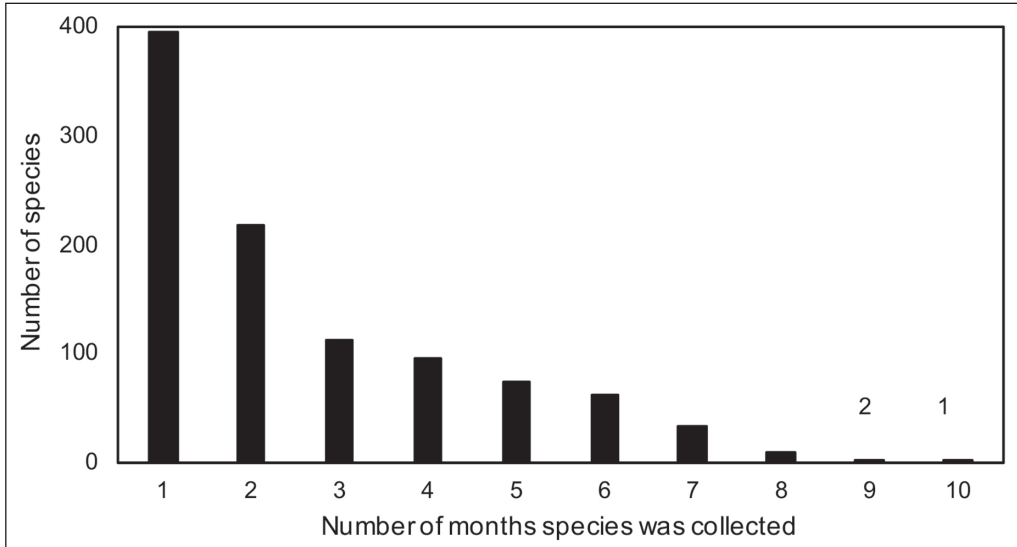


Figure 6. Number of months during which each species was collected in Congaree NP between November 2009 and October 2010. Data presented include only those specimens identified to species (Appendix 4A).

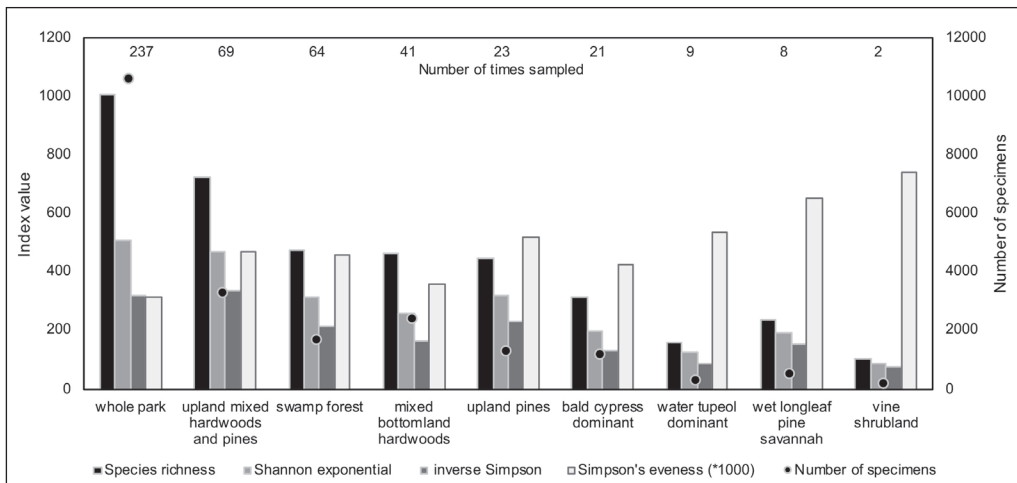


Figure 7. Diversity indices, number of specimens, and number of times habitat was sampled between November 2009 and October 2010. Data are presented for the whole park and for subsets from 8 habitat types sampled. Indices include species richness (0D), Shannon exponential (1D), inverse Simpson (2D), and Simpson's evenness (E ; multiplied by 1000 to adjust scale). Data presented include only those specimens identified to species (Appendix 4A).

among species described previously (Fig. 4, Appendix 4A). We also found that both the number of specimens and number of species recorded per site had strong positive linear relationships with sampling intensity (Fig. 8). Despite our inability to survey all habitat types equally, we observed some trends in diversity. In each of the 8 habitat types, ${}^0D > {}^1D > {}^2D$, indicating that the surveyed moth communities had similar structures of rare to abundant species (Fig. 7). The primary difference across the 8 habitats examined was that for habitats sampled more than 20 times, 0D was much greater than 1D or 2D indicating that increased sampling yielded more rare species (Fig. 7). In the 3 habitats sampled fewer than 10 times the species were more evenly abundant as indicated by 0D being similar to both 1D and 2D (Fig. 7). Evenness values support the Hill number trends, with the mixed bottomland hardwoods habitat having the lowest evenness ($E = 0.36$) and the greatest difference between 0D and 2D , indicating there were considerably more rare than abundant species in samples from this habitat (Fig. 7). Likewise, the vine shrubland habitat had the highest evenness ($E = 0.74$) and the least difference between 0D and 2D , indicating that most species in this habitat were collected at similar abundances, likely an artifact of the low sampling frequency (Fig. 7).

Moth species diversity and evenness in the 8 habitat types fell into 3 general groups. The upland mixed hardwoods and pines habitat had the highest values for all diversity indices with an evenness value of 0.47. Despite variability in the number of times sampled, the swamp forest ($n = 64$), mixed bottomland hardwoods ($n = 41$), and upland pines ($n = 23$) had similar 0D , 1D , and 2D values, and evenness values of 0.46, 0.36, and 0.52, respectively (Fig. 7). Although it was sampled 21 times, the Bald Cypress-dominant habitat had lower 0D , 1D , and 2D values than the previous habitat grouping, but was similar to them in evenness (0.42). The 3

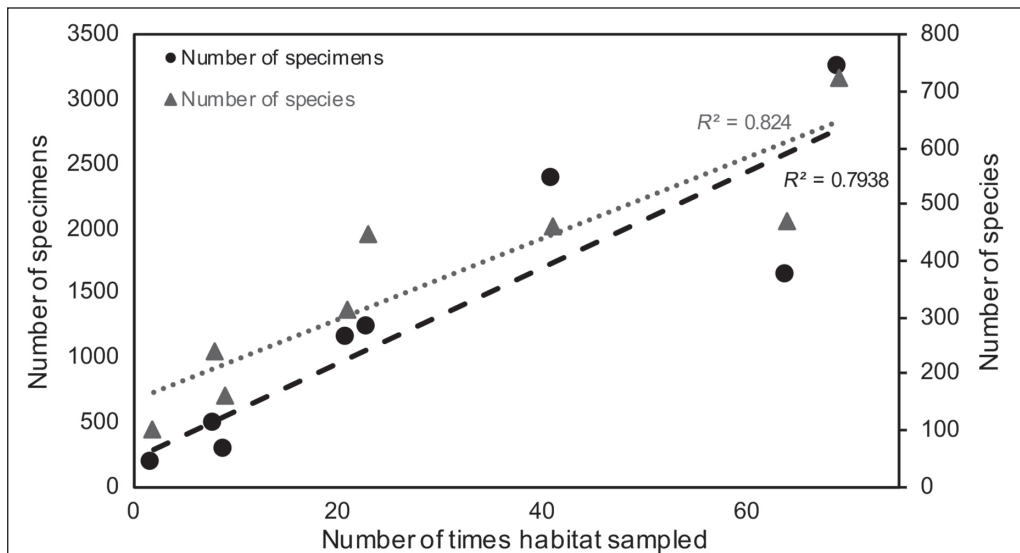


Figure 8. Relationship between the number of times a habitat was sampled and both total number of specimens and total number of species recorded. Data presented for specimens is from Appendix 4A and 4B, and for species from Appendix 4A.

habitat types sampled fewer than 10 times had the lowest 0D , 1D , and 2D values but relatively high evenness values of 0.53, 0.65, and 0.74, respectively.

The number of shared species among habitat pairs was relatively high; most habitat pairs had >50% of the species collected in common with each other (Table 2). The high number of shared species is reflected in the Chao–Sorenson similarity values of >0.5 for the majority of paired habitat comparisons (Table 2). There were 3 habitat similarity groupings that stand out. The first included the Bald Cypress dominant, swamp forest, and mixed bottomland hardwoods habitats, all of which had similarity index values that were high for both moths (≥ 0.776) and plants (≥ 0.621) (Table 2). The second included the mixed bottomland hardwoods, swamp forest, and upland mixed hardwoods and pines, which had moth similarity values that were high (≥ 0.746) (Table 2). Within this group, plant similarity was high between the swamp forest and mixed bottomland hardwoods (0.621) but low between those and the upland mixed hardwoods and pines habitat (0.200, 0.286, respectively) (Table 2). The low similarity was most likely caused by the reporting format in the GIS vegetation layer for the upland hardwoods and pines sites. The third group included the upland mixed hardwoods and pines and upland pines habitats. These had a moth similarity index value that was high (0.781) but a plant similarity value that was low (0.143). The similarity in moth populations is probably due to the upland locations of these sites, while the lack of detail in the GIS vegetation layer for the upland hardwoods and pines habitat is causing the low level of similarity among plants.

Two habitats, the wet Longleaf Pine savannah habitat and vine shrubland, differed the most in similarity values from the other 6 habitat types in both moth and plant compositions (Table 2). The wet Longleaf Pine savannah area is located along US 601 where it crosses the eastern edge of the park and is widely separated from the other sampling areas, which were primarily in the western portion of the park. Also, as a relatively new addition to the park, it was not included in the GIS vegetation layer so does not have detailed plant composition information. The vine-shrubland habitat was only sampled twice and so the moth diversity is probably underestimated compared to the other habitats. It would be beneficial for both of these habitats to be more intensively sampled in future studies.

Environmental factors are known to impact moth behavior and their susceptibility to trapping (Jonason et al. 2014, White et al. 2016, Yela and Holyoak 1997). To determine how these factors may have impacted our survey, we examined correlations between the number of moths per trap and total number of species captured for all collection sessions when either UV or MV light trapping was used (Figs. 9, 10).

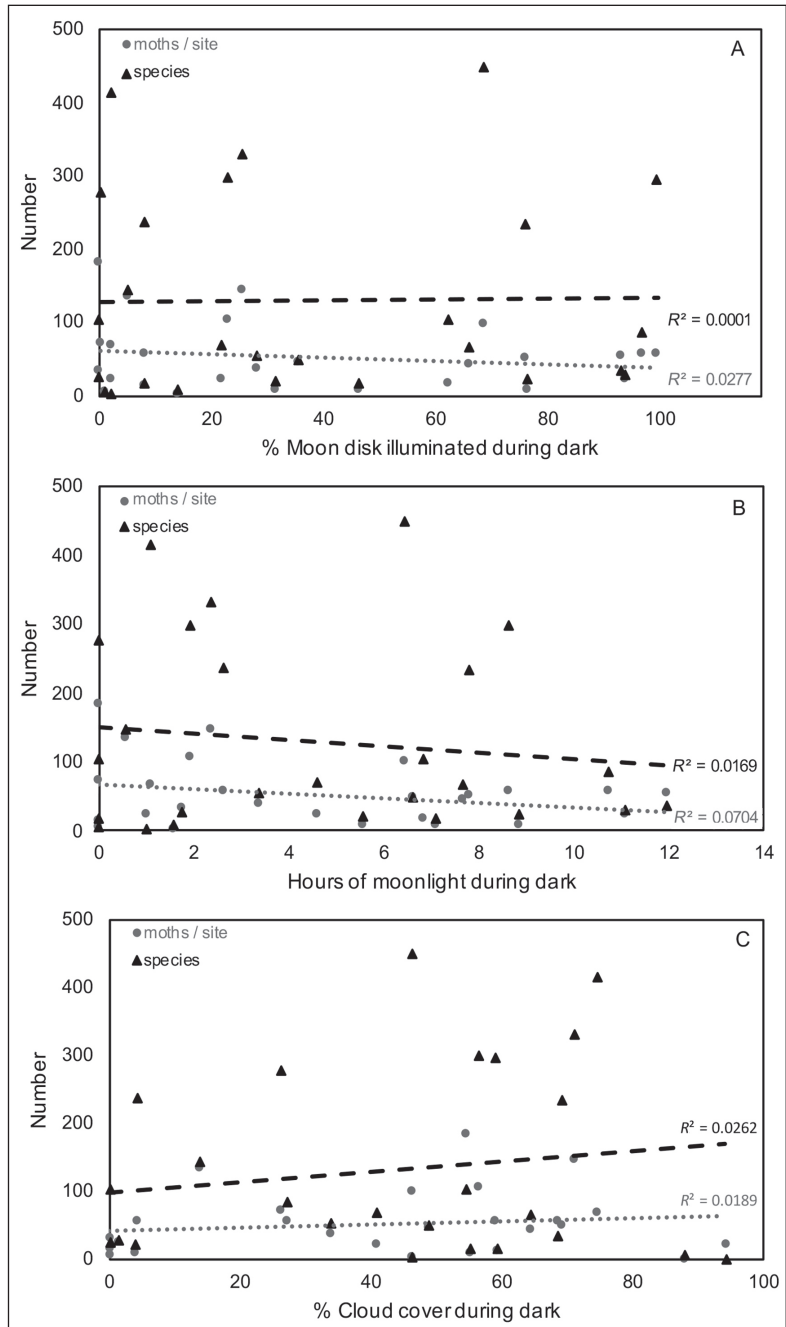
Moonlight interference is a major concern when collecting moths using light traps (McGeachie 1989, Yela and Holyoak 1997). Although most trapping sessions occurred at least 5 d before or after a full moon, one 2-night session (25–27 June) occurred during a full moon, and 2 single-night sessions (21–22 September, 20–21 October) occurred the night prior to a full moon (Appendix 2). During our survey we found no correlation between the percentage of the moon's disk that was visible

Table 2. Number of shared moth species by habitat type. Values in parentheses indicate Chao–Sorenson similarity index for moth species and those in brackets indicate Chao–Sorenson similarity index for plant composition based on Congaree NP GIS vegetation layer.

	Bald Cypress dominant	Vine shrubland	Mixed bottomland hardwoods	Swamp forest	Upland mixed hardwoods and pines	Upland pines	Water Tupelo dominant	Wet Longleaf Pine savannah
Bald Cypress dominant (313 spp.)	80 (0.620) {0.333}	238 (0.830) {0.882}	232 (0.776) {0.640}	264 (0.659) {0.154}	171 (0.527) {0.000}	101 (0.615) {0.316}	110 (0.505) {0.000}	
Vine shrubland (102 spp.)	83 (0.504) {0.000}	87 (0.555) {0.273}	85 (0.365) {0.000}	65 (0.291) {0.000}	43 (0.432) {0.000}	40 (0.265) {0.000}		
Mixed bottomland hardwoods (462 spp.)	292 (0.811) {0.621}	347 (0.746) {0.200}	224 (0.590) {0.000}	131 (0.622) {0.261}	154 (0.580) {0.000}			
Swamp forest (471 spp.)	379 (0.816) {0.286}	254 (0.687) {0.000}	111 (0.534) {0.143}	136 (0.510) {0.000}				
Upland mixed hardwoods and pines (723 spp.)	362 (0.781) {0.143}	132 (0.433) {0.000}	91 (0.358) {0.000}	185 (0.480) {0.167}				
Upland pines (445 spp.)	69 (0.365) {0.000}							
Water Tupelo dominant (160 spp.)								
Wet Longleaf Pine savannah (237 spp.)								

and either the number of moths per trap or number of species collected (Fig. 9A). This result could be due to the fact that 58% of all sampling sessions occurred with <50% of the moon's disk visible (Appendix 2). Of the 8 sampling sessions when we captured >200 specimens per trap, 5 had less than 30% of the moon visible and 3 had more than 60% visible. The relatively low impact of moonlight in our survey could be due in part to the dense tree canopy at most survey sites.

Figure 9. (A) Correlations between percentage of moon illuminated and both number of specimens per site and number of species collected. (B) Correlations between hours of moonlight during dark and both number of specimens per site and number of species collected. (C) Correlations between average percent cloud cover during dark and both number of specimens per site and number of species collected. Data for specimens from Appendix 4A and 4B, and for species from Appendix 4A.



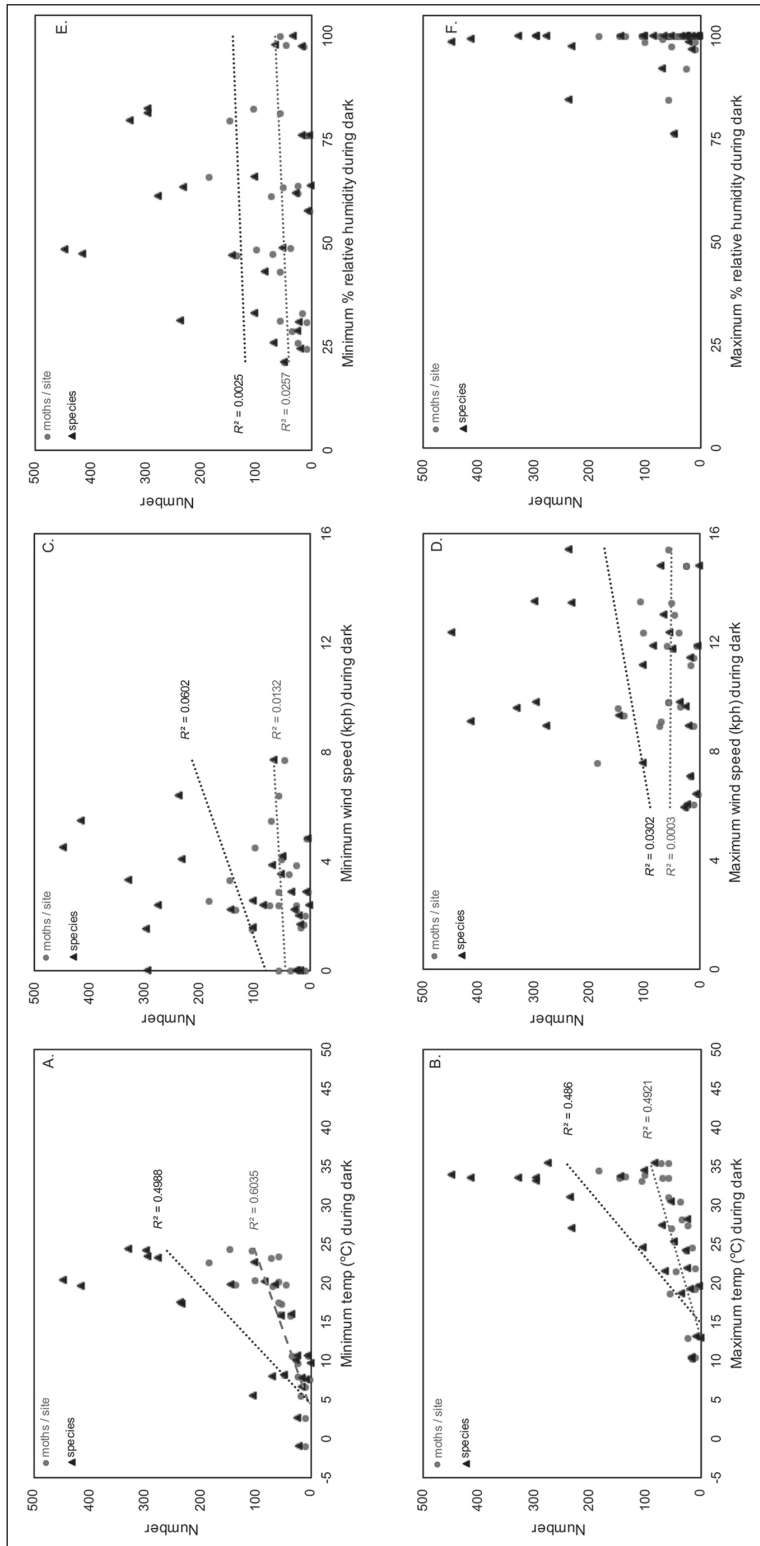


Figure 10. Correlations between both number of specimens per site and number of species collected with (A) minimum and (B) maximum temperature (°C), (C) minimum and (D) maximum wind speed (kph), and (E) minimum and (F) maximum relative humidity during dark. Data for specimens from Appendix 4A and 4B, and for species from Appendix 4A.

Although the correlations were not very strong, we did observe a general trend of higher numbers of both specimens per trap and species captured when there were fewer hours of moonlight (Fig. 9B) and increased cloud cover (Fig. 9C) when sampling. McGeachie (1989) also reported lower captures of moths in light traps as moonlight increased, and Yela and Holyoak (1997) reported increased numbers of moths in light traps when cloud cover was higher.

We also examined the relationships of overnight temperature, wind speed, and relative humidity with the number of specimens per trap and species captured (Fig. 10). Increases in both minimum (Fig. 10A) and maximum (Fig. 10B) overnight temperatures had strong positive correlations with capture data. This finding is expected for ectothermic species, and corresponds to the highest captures occurring during summer months (Figs. 2, 3). Similar temperature impacts have been reported by Jonason et al. (2014), McGeachie (1989), and Yela and Holyoak (1997). Although there was no clear correlation between either minimum or maximum wind speed with the number of specimens captured per trap, there was a slight positive increase in the number of species captured as either minimum or maximum wind speed increased (Fig. 10C, D). Jonason et al. (2014) reported that wind speed did not impact either moth abundance or species richness. We did not find any correlation between minimum relative humidity and either the number of specimens per trap or number of species collected (Fig. 10E). Maximum relative humidity when sampling was almost always >90%; thus, we did not attempt any correlation for this parameter (Fig. 10F). Prior data on the impact of relative humidity are unclear as to its impact; Jonason et al. (2016) reported lower numbers of macro moth species when humidity was higher, and van Langevelde et al. (2011) reported higher numbers of moth species when humidity was high.

There have been 2 other comprehensive moth surveys conducted in the Southeastern US. R.B. Dominick conducted a 10-y (1965 to 1975) survey on The Wedge Plantation (McClellenville, SC) during which he collected 1069 moth species (Wallace 1987). At the time of that survey, The Wedge Plantation property consisted of 607 ha (1500 ac) at elevations from approximately 2 m (7 ft) to 6 m (20 ft), with habitats consisting mainly of marsh along the South Santee River and coastal forest with several embedded small open fields. The Wedge Plantation is ~145 km SE of Congaree NP. Scholtens and Wagner (2007) reported 1732 moth species from the Great Smoky Mountains NP; that total was updated in 2011 to 1881 species by J. Adams (Dalton State College, Dalton, GA, pers. comm.) and includes species collected during an intensive 6-y (2000 to 2006) All Taxa Biodiversity Inventory (ATBI) as well as those from prior and subsequent collections. The Great Smoky Mountains NP encompasses 211,426 ha (522,427 ac) with elevations from 267 m (875 ft) to 2024.8 m (6643 ft). The park contains 5 major forest types as well as both grassy and heath balds (<https://www.nps.gov/grsm/index.htm>), and is located ~320 km NW of Congaree NP.

The 1005 species now reported for Congaree NP is only slightly lower than the number recorded from the Dominick collection. The similarity in species richness between these collections would be expected in that Congaree NP and The Wedge Plantation are located in the Inner and Outer SC Coastal Plain, respectively, and

both contain bottomland forest habitats. The higher moth species richness reported from the Great Smoky Mountains NP is also expected due to the significantly greater size and habitat diversity of the Great Smoky Mountain NP compared to Congaree NP.

Our survey provides valuable information on the composition of moth populations and their seasonal trends in Congaree NP. Within the constraints of our survey techniques, it also provides some indication of the relative abundance of the species collected. Based on the number of new SC records of Microlepidoptera in our survey, further studies focusing on this group would be valuable. Also, because our survey was limited to accessible areas, we were unable to survey much of the park east of the Boardwalk Loop Trail. Future studies could involve deployment of traps by boat along the north shore of the Congaree River between the West Boundary Road landing and US 601, and by canoe along the Cedar Creek Canoe Trail. Additionally, habitat types where we had low numbers of samples should be resurveyed.

Acknowledgments

We thank Congaree National Park staff Theresa Thom, David Shelley, and Miriam Oudejans, and interns Heather Otte and Ricker Snow for assistance in sampling and support. Ricker Snow recorded the GIS coordinates for all sampling sites. David Shelley provided both Congaree NP GIS data layers (boundary, trails, roads, vegetation) and weather data. Students who assisted with sampling and sorting trap-catches included Tom Smith (College of Charleston), Jessica Grant (Clemson University), Melissa Strickland (College of Charleston), Carrie Umberger (College of Charleston), and Bobby Reynolds (College of Charleston). Volunteers who helped with sorting trap-catches included Hilda Flamholtz, Lynn Smith, Amber Leonard, John Galbary, Mark Huguley, Ann Jennings, Richard Kindler, Barbara Soblo, and Isaac Soblo. Willem Hillenius and Brenda Hillenius sampled 1 weekend by placing a UV trap at a site along the Cedar Creek Canoe Trail. Debbie Matthews Lott, McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, FL, identified all specimens of the Pterophoridae. Brook Russell, Department of Mathematics, Clemson University, provided the NARR cloud-cover data. Rachel Wittmann, National Parks Metadata Specialist, Clemson University Libraries, uploaded the moth photographs and metadata presented on the Open Parks Network website. Elham Masoomkhah and Blake Lytle, Clemson University Center for Geospatial Technologies, assisted by preparing Figure 1. Walker Massey, Graphics Designer, Public Service and Agriculture, Clemson University, prepared Figures 2 through 10. We appreciate reviews by James Adams, Michael Caterino, Tomas Mustelin, and 2 anonymous reviewers. Their input strengthened this manuscript. Dana Anderson reviewed the manuscript and Appendix 4 for formatting. Clemson University, College of Charleston, and Furman University provided support and laboratory space. Funding for this project was provided by Congaree NP under National Park Service Contract H5000085050 / J5430090058. Congaree NP also provided lodging and access to laboratory space during survey visits.

Literature Cited

Chao, A., R.L. Chazdon, R.K. Colwell, and T.J. Shen. 2005. A new statistical approach for assessing compositional similarity based on incidence and abundance data. *Ecology Letters* 8:148–159.

- Chao, A., N.J. Gotelli, T.C. Hsieh, E.L. Sander, K.H. Ma, R.K. Cowell, and A.M. Ellison. 2014. Rarefaction and extrapolation with Hill numbers: A framework for sampling and estimation in species diversity studies. *Ecological Monographs* 84(1):45–67.
- Colwell, R.K. 2013. EstimateS: Statistical estimation of species richness and shared species from samples. Version 9. User's Guide and application. Available online at <http://purl.oclc.org/estimates>. Accessed 5 August 2016.
- Covell, C.V., Jr. 2005. *A Field Guide to the Moths of Eastern North America*. Virginia Museum of Natural History. Martinsville, VA. 518 pp.
- Doyle, T.W. 2009. Modeling flood plain hydrology and forest productivity of Congaree Swamp, South Carolina: US Geological Survey Scientific Investigations Report 2009-5130. 46 pp.
- Ferguson, D.C. 1978. Noctuoidea, Lymantriidae. Fascicle 22.2, *In* R.B. Dominick (Ed.). *The Moths of America North of Mexico*. E.W. Classey Ltd., London, UK. The Wedge Entomological Research Foundation. 110 pp. + x.
- Ferguson, D.C. 1985. Geometroidea, Geometridae (part), Geometrinae. Fascicle 18.1, *In* R.B. Dominick (Ed.). *The Moths of America north of Mexico*. Allen Press, Lawrence, KS. The Wedge Entomological Research Foundation. 131 pp. + vi.
- Ferguson, D.C. 2008. Geometroidea, Geometridae (part), Ennominae (part—Abraxini, Cassymini, Macariini). Fascicle 17.2, *In* R.W. Hodges (Ed.). *The Moths of North America*. Allen Press, Lawrence, KS. The Wedge Entomological Research Foundation. 431 pp.
- Gilligan, T.M., and D.J. Wright. 2013. Revised world catalogue of Eucopina, Eucosoma, Pelochrista, and Phaneta (Lepidoptera: Tortricidae: Eucosmini). *Zootaxa* 3746:301–337.
- Gilligan, T.M., D.J. Wright, and L.D. Gibson. 2008. *Olethreutine Moths of the Midwestern United States, an Identification Guide*. Ohio Biological Survey, Columbus, OH. 334 pp.
- Handfield, L. 1999. *Le guide des papillons du Québec, version scientifique*. Broquet, Boucherville, QC, Canada. 982 pp. + 123 plates.
- Heinrich, C. 1923. Revision of the North American moths of the subfamily Eucosminae of the family Olethreutidae. *Bulletin of the US National Museum* 123:1–298.
- Heinrich, C. 1926. Revision of the North American moths of the subfamilies Laspeyresinae and Olethreutinae. *Bulletin of the US National Museum* 132:1–216.
- Heinrich, C. 1956. American moths of the subfamily Phycitinae. *Bulletin of the US National Museum* 207:1–581.
- Heppner, J.B. 2003. *Lepidoptera of Florida, Part 1: Introduction and Catalog*. Arthropods of Florida and Neighboring Land Areas, No. 17. Florida Department of Agriculture and Consumer Services, Gainesville, FL. 670 pp. + x.
- Hill, M. 1973. Diversity and evenness: A unifying notation and its consequences. *Ecology* 54:427–438.
- Hodges, R.W. 1974. Gelechioidea, Oecophoridae (part). Fascicle 6.2, *In* R.B. Dominick (Ed.). *The Moths of America North of Mexico*. E.W. Classey Ltd. and R.B.D. Publications Inc. London, UK. 142 pp. + x.
- Hodges, R.W. 1978. Gelechioidea, Cosmopterigidae. Fascicle 6.1, *In* R.B. Dominick (Ed.). *The Moths of America North of Mexico*. E.W. Classey Ltd., London, UK. The Wedge Entomological Research Foundation. 166 pp. + x.
- Hodges, R.W. 1986. Gelechioidea, Gelechiidae (part), Dichomeridinae. Fascicle 7.1, *In* R.B. Dominick (Ed.). *The Moths of America nNorth of Mexico*. Allen Press, Lawrence, KS. 195 pp. + xiii. The Wedge Entomological Research Foundation.
- Hodges, R.W. 1999. Gelechioidea, Gelechiidae (part), Gelechiinae (part—*Chionodes*). Fascicle 7.6, *In* R.B. Dominick (Ed.). *The Moths of America North of Mexico*. Allen Press, Lawrence, KS. 339 pp. The Wedge Entomological Research Foundation.

- Hurst, T.E., and M.J. Lacki. 1997. Food habits of Rafinesque's Big-eared Bat in Southeastern Kentucky. *Journal of Mammalogy* 78:525–528.
- Jonason, D., M. Franzén, and T. Ranius. 2014. Surveying moths using light traps: Effects of weather and time of year. *PLoS ONE* 9:e92453. DOI:10.1371/journal.pone.0092453.
- Lacki, M.J., and K.M. Ladeur. 2001. Seasonal use of lepidopteran prey by Rafinesque's Big-eared Bats (*Corynorhinus rafinesquii*). *The American Midland Naturalist* 145:213–217.
- Lafontaine, J.D. 1987. Noctuoidea, Noctuidae (part), Noctuidae (part - *Euxoa*). Fascicle 27.2, *In* R.B. Dominick (Ed.). *The Moths of America North of Mexico*. The Wedge Entomological Research Foundation, Allen Press, Lawrence, KS. 237 pp.
- Lafontaine, J.D. 1998. Noctuoidea, Noctuidae (part), Noctuidae (part - Noctuidae). Fascicle 27.3, *In* R.B. Dominick (Ed.). *The Moths of America North of Mexico*. Allen Press, Lawrence, KS. 348 pp. The Wedge Entomological Research Foundation.
- Lafontaine, J.D. 2004. Noctuoidea, Noctuidae (part), Noctuidae (part - Agrotini). Fascicle 27.1, *In* R.B. Dominick (Ed.). *The Moths of America North of Mexico*. Allen Press, Lawrence, KS. 385 pp. The Wedge Entomological Research Foundation.
- Lafontaine, J.D., and R.W. Poole. 1991. Noctuoidea, Noctuidae (part), Plusiinae. Fascicle 25.1, *In* R.B. Dominick (Ed.). *The Moths of America North of Mexico*. Allen Press, Lawrence, KS. 182 pp. The Wedge Entomological Research Foundation.
- Lafontaine, J.D., and B.C. Schmidt. 2010. Annotated check list of the Noctuoidea (Insecta, Lepidoptera) of North America north of Mexico. *ZooKeys* 40:1–239.
- Lee, S., R.W. Hodges, and R.L. Brown. 2009. Checklist of Gelechiidae (Lepidoptera) in America North of Mexico. *Zootaxa* 2231:1–39.
- Martinez, E.L. 2010. A revision of the New World species of *Donacaula* Meyrick and a phylogenetic analysis of related Schoenobiinae (Lepidoptera: Crambidae). Ph.D. Dissertation. Mississippi State University, Starkville, MS. 247 pp.
- McGeachie, S.J. 1989. The effects of moonlight illuminance, temperature, and wind speed on light-trap catches of moths. *Bulletin of Entomological Research* 79:185–192.
- Mesinger, F., G. DiMego, E. Kalnay, K. Mitchell, P.C. Shafran, W. Ebisuzaki, D. Jović, J. Woollen, E. Rogers, E.H. Berbery, M.B. Ek, Y. Fan, R. Grumbine, W. Higgins, H. Li, Y. Lin, G. Manikin, D. Parrish, and W. Shi. 2006. North American regional reanalysis. *Bulletin of the American Meteorological Society* 87:343–360.
- Mikkola, K., J.D. Lafontaine, and J. Gill. 2009. Noctuoidea, Noctuidae (part), Xyleninae (part), Apameini (part—*Apamea* group of genera). Fascicle 26.9, *In* R.W. Hodges (Ed.). *The Moths of North America*. Allen Press, Lawrence, KS. 191 pp. The Wedge Entomological Research Foundation.
- Miller, W.E. 1987. Guide to the Olethreutine moths of midland North America (Tortricidae). *USDA Forest Service Agriculture Handbook* 660:1–104.
- Morris, E.K., T. Caruso, F. Buscot, M. Fischer, C. Hancock, T.S. Maier, T. Meiners, C. Müller, E. Obermajer, D. Prati, S.A. Cocher, I. Sonnemann, N. Wäschke, T. Wubet, S. Wurst, and M.C. Rillig. 2014. Choosing and using diversity indices: Insights for ecological applications from the German Biodiversity Exploratories. *Ecology and Evolution* 4(18):3514–3524.
- Munroe, E. 1972–1974. Pyraloidea, Pyralidae, Scopariinae, Nymphulinae, Odontiinae, Glaphyriinae, Evergestinae. Fascicle 13.1A, 13.1B, and 13.1, *In* R.B. Dominick (Ed.). *The Moths of America North of Mexico*. C.E.W. Classey Ltd., London, UK. Ltd. and R.B.D. Publications Inc., London, UK. 304 pp. + xx.
- Munroe, E. 1976. Pyraloidea, Pyralidae, Pyraustinae, Pyraustini. Fascicle 13.2A and 13.2B, *In* [R.B. Dominick (Ed.). *The Moths of America North of Mexico*. C.E.W. Classey Ltd., London, UK. The Wedge Entomological Research Foundation. 150 pp. + xviii.

- National Park Service (NPS). 2004. Resource management plan: Congaree National Park. 70 pp.
- NPS. 2014. Foundation document Congaree National Park. CONG 178/125650. 80 pp.
- Neunzig, H.H. 1986. Pyraloidea, Pyralidae (part), Phycitinae (part). Fascicle 15.2, *In* R.B. Dominick. The Moths of America North of Mexico. The Wedge Entomological Research Foundation, Allen Press, Lawrence, KS. 112 pp. + xii.
- Neunzig, H.H. 1990. Pyraloidea, Pyralidae (part), Phycitinae (part). Fascicle 15.3, *In* [R.B. Dominick (Ed.). The Moths of America North of Mexico. Allen Press, Lawrence, KS. 165 pp. The Wedge Entomological Research Foundation.
- Neunzig, H.H. 1997. Pyraloidea, Pyralidae (part), Phycitinae (part). Fascicle 15.4, *In* R.B. Dominick. The Moths of America North of Mexico. Allen Press, Lawrence, KS. 157 pp. The Wedge Entomological Research Foundation.
- Neunzig, H.H. 2003. Pyraloidea, Pyralidae (part), Phycitinae (part). Fascicle 15.5, *In* R.B. Dominick (Ed.). The Moths of America North of Mexico. Allen Press, Lawrence, KS. 338 pp. The Wedge Entomological Research Foundation.
- Pohl, G.R., B. Patterson, and J.P. Pelham. 2016. Annotated taxonomic checklist of the Lepidoptera of North America, North of Mexico. Working paper published online by the authors at ResearchGate.net. 766 pp.
- Poole, R.W. 1995. Noctuoidea, Noctuidae (part), Cuculliinae, Stiriinae, Psaphidinae (part). Fascicle 26.1, *In* R.B. Dominick (Ed.). The Moths of America North of Mexico. The Wedge Entomological Research Foundation, Allen Press, Lawrence, KS. 249 pp.
- Powell, J.A., and J.W. Brown. 2012. Tortricoidea, Tortricidae (part) Tortricinae (part): Sparganothini and Atteriini. Fascicle 8.1, *In* R.W. Hodges. The Moths of North America. Allen Press, Lawrence, KS. 230 pp. The Wedge Entomological Research Foundation.
- Regier, J.C., C. Mitter, D.R. Davis, T.L. Harrison, J.C. Sohn, M.P. Cummings, A. Zwick, and K.T. Mitter. 2014. A molecular phylogeny and revised classification for the oldest ditrysian moth lineages (Lepidoptera: Tineoidea), with implications for ancestral feeding habits of the mega-diverse Ditrysia. *Systematic Entomology* 2014:1–24.
- Regier, J.C., C. Mitter, N.P. Kristensen, D.R. Davis, E.J. van Nieukerken, J. Rota, T.J. Simonsen, K.T. Mitter, A.Y. Kawahara, S.-H. Yen, M.P. Cummings, and A. Zwick. 2015. A molecular phylogeny for the oldest (nonditrysian) lineages of extant Lepidoptera, with implications for classification, comparative morphology, and life-history evolution. *Systematic Entomology* 2015:1–34.
- Rings, R.W., E.H. Metzler, F.J. Arnold, and D.H. Harris. 1992. Owllet moths of Ohio: Order Lepidoptera, Family Noctuidae. *Ohio Biological Survey Bulletin* 9:1–219.
- Scholtens, B.G., and M.A. Solis. 2015. Annotated check list of the Pyraloidea (Lepidoptera) of America north of Mexico. *ZooKeys* 535:1–136.
- Scholtens, B.G., and D.L. Wagner. 2007. Lepidoptera of Great Smoky Mountains National Park: Methods and results of the inventory. *Southeastern Naturalist Special Issue* 1:193–206.
- Sohn, J.-C., J.C. Regier, C. Mitter, D. Davis, J.-F. Landry, A. Zwick, and M.P. Cummings. 2013. A molecular phylogeny for Yponomeutoidea (Insecta, Lepidoptera, Ditrysia) and its implications for classification, biogeography and the evolution of host plant use. *PLoS ONE* 8(1):e55066. DOI:10.1371/journal.pone.0055066.
- Sohn, J.-C., D.R. Davis, and C. Lopez-Vaamonde. 2015. Revision of the genus *Philonome* Chambers and its proposed reassignment to the family Tineidae (Lepidoptera, Tineoidea). *ZooKeys* 494:69–106.

- Thompson, A.J. 1998. An ecological inventory and classification of an old-growth floodplain forest in the Southeastern United States coastal plain. M.Sc. Thesis. University of Georgia, Athens, GA. 118 pp.
- van Langevelde, F., J.A. Ettema, M. Donners, M.F. WallisDeVries, and D. Groenendijk. 2011. Effect of spectral composition of artificial light on the attraction of moths. *Biological Conservation* 144:2274–2281.
- Wallace, F.L. 1987. A check list of the Richard B. Dominick Moth and Butterfly Collection. Wedge Publication Number 1. The Citadel, Charleston, SC. 51 pp.
- White, P.J.T., K. Glover, J. Stewart, and A. Rice. 2016. The technical and performance characteristics of a low-cost, simply constructed, black light moth trap. *Journal of Insect Science* 16:1–9.
- Wright, D.J., and T.M. Gilligan. 2015. *Eucosma* Hübner of the contiguous United States and Canada (Lepidoptera: Tortricidae: Eucosmini). Wedge Entomological Research Foundation, Alamogordo, NM. 256 pp.
- Yela, J.L., and M. Holyoak. 1997. Effects of moonlight and meteorological factors on light and bait trap catches of noctuid moths. *Environmental Entomology* 26:1283–1290.

Appendix 1. Habitat types and associated plant species for all sample sites. Plant data are from the Congaree NP GIS vegetation layer.

Habitat type	Sample sites	Associated plant species
Bald Cypress dominant		
	Low boardwalk, 3 rd pullout	<i>Nyssa biflora</i> Walter (Swamp Tupelo), <i>Acer rubrum</i> L. (Red Maple), <i>Ilex opaca</i> Aiton. (American Holly), <i>Leucothoe axillaris</i> (Lam. D. Don) (Coastal Doghobble), <i>Carex atlantica</i> ssp. <i>capillacea</i> (L.H. Bailey) Reznicek (Prickly Bog Sedge), <i>Taxodium distichum</i> (L.) Rich. (Bald Cypress), <i>Nyssa aquatica</i> L. (Water Tupelo), <i>Fraxinus caroliniana</i> Mill. (Carolina Ash)
	Low boardwalk, 4 th pullout	Swamp Tupelo, Red Maple, American Holly, Coastal Doghobble, Prickly Bog Sedge, Bald Cypress, Water Tupelo, Carolina Ash
	Low boardwalk, 5 th pullout	Swamp Tupelo, Red Maple, American Holly, Coastal Doghobble, Prickly Bog Sedge, Bald Cypress, Water Tupelo, Carolina Ash
	Elevated boardwalk, 17 th pullout	<i>Quercus laurifolia</i> Michx. (Swamp Laurel Oak), Red Maple, Bald Cypress, <i>Vitis rotundifolia</i> Michx. (Muscadine Grape), <i>Ampelopsis arborea</i> (L.) Koehne (Pepper Vine), <i>Campsis radicans</i> (L.) Seem. ex Bureau (Trumpet Vine), <i>Fraxinus pennsylvanica</i> Marsh. (Green Ash)
	Elevated boardwalk, 18 th pullout	Swamp Laurel Oak, Red Maple, Bald Cypress, Muscadine Grape, Pepper Vine, Trumpet Vine, Green Ash
	Elevated boardwalk, 19 th pullout	Swamp Laurel Oak, Red Maple, Bald Cypress, Muscadine Grape, Pepper Vine, Trumpet Vine, Green Ash
	Sims Trail at bridge	<i>Liquidambar styraciflua</i> L. (Sweetgum), Swamp Laurel Oak, Bald Cypress, Water Tupelo, Carolina Ash, <i>Celtis laevigata</i> Willd. (Sugarberry)
Vine shrubland		
	Elevated boardwalk, 13 th pullout	Muscadine Grape, Pepper Vine, Trumpet Vine
	Elevated boardwalk, 14 th pullout	Muscadine Grape, Pepper Vine, Trumpet Vine

Habitat type	Sample sites	Associated plant species
Mixed bottomland hardwoods		
	Low boardwalk, #8 (end of spur)	Sweetgum, Swamp Laurel Oak, Sugarberry
	Low boardwalk, 11 th pullout	Sweetgum, Swamp Laurel Oak, Sugarberry
	Low boardwalk, 12 th pullout	Sweetgum, Swamp Laurel Oak, Sugarberry
	West boundary road at clearing with cut logs	Sweetgum, Swamp Laurel Oak, Sugarberry
	West boundary road at River Trail	Sweetgum, Swamp Laurel Oak, Sugarberry, <i>Platanus occidentalis</i> L. (American Sycamore), Green Ash
	West boundary road 0.16 km (0.1 mi) inside gate	Sweetgum, Swamp Laurel Oak, Sugarberry, <i>Quercus nigra</i> L. (Water Oak), <i>Arundinaria gigantea</i> (Walter) Muhl. (Giant Cane), <i>Carex abscondita</i> Mack. (Thicket Sedge)
	Elevated boardwalk, 3 rd pullout	Sweetgum, Swamp Laurel Oak, Water Oak, Giant Cane, Thicket Sedge
	Low boardwalk, #7 (SW corner)	Sweetgum, Swamp Laurel Oak, Bald Cypress, Water Tupelo, Carolina Ash, Sugarberry
	Low boardwalk, 9 th pullout	Sweetgum, Swamp Laurel Oak, Bald Cypress, Water Tupelo, Carolina Ash, Sugarberry
	Cedar Creek Road at canoe landing	Sweetgum, Swamp Laurel Oak, Bald Cypress, Water Tupelo, Carolina Ash, Sugarberry
	Sims Trail in oak woods	Sweetgum, Swamp Laurel Oak, Muscadine Grape, Pepper Vine, Trumpet Vine, Sugarberry
	Sims Trail (gate near Research and Education Center [REC])	Swamp Tupelo, Red Maple, American Holly, Coastal Doghobble, Sweetgum, Swamp Laurel Oak, Prickly Bog Sedge, Water Oak, Giant Cane, Thicket Sedge
Swamp forest		
	Elevated boardwalk, NW corner	Swamp Tupelo, Red Maple, American Holly, Coastal Doghobble, Prickly Bog Sedge
	Elevated boardwalk, 5 th pullout	Swamp Tupelo, Red Maple, American Holly, Coastal Doghobble, Prickly Bog Sedge
	Elevated boardwalk, 8 th pullout	Swamp Tupelo, Red Maple, American Holly, Coastal Doghobble, Prickly Bog Sedge

Habitat type	Sample sites	Associated plant species
	Low boardwalk, 1 st pullout	Swamp Tupelo, Red Maple, American Holly, Coastal Doghobble, Prickly Bog Sedge
	Elevated boardwalk, 7 th pullout	Swamp Tupelo, Red Maple, American Holly, Coastal Doghobble, Prickly Bog Sedge, <i>Fagus grandifolia</i> Ehrh. (American Beech), Water Oak
	Low boardwalk, 2 nd pullout	Swamp Tupelo, Red Maple, American Holly, Coastal Doghobble, Prickly Bog Sedge, Swamp Laurel Oak, Bald Cypress, Green Ash
Upland mixed hardwoods and pines		
	Research and Education Center at Bluff Trail	Sweetgum, Swamp Laurel Oak, successional pine + mixed hardwoods, <i>Carex folliculata</i> L. (Northern Long Sedge), <i>Magnolia virginiana</i> L. (Sweetbay)
	REC bathhouse	Sweetgum, Water Oak, <i>Quercus phellos</i> L. (Willow Oak), <i>Pinus taeda</i> L. (Loblolly Pine), open field
	REC	Sweetgum, Water Oak, Willow Oak, Loblolly Pine, successional pine + mixed hardwoods, open field
	National park road at trail	Water Oak, American Beech, <i>Pinus palustris</i> Miller (Longleaf Pine)
	National park road in oak woods	Successional pine + mixed hardwoods
	National park road at powerline cut	Successional pine + mixed hardwoods, open field
	Harry Hampton Visitor Center	Successional pine + mixed hardwoods, Water Oak, American Beech
	Trail from picnic area to boardwalk	Successional pine + mixed hardwoods, Water Oak, American Beech
Upland pines		
	Garrick Road	Loblolly Pine, Longleaf Pine, <i>Schizachyrium scoparium</i> (Michx.) Nash (Little Bluestem)
Water Tupelo dominant		
	Low boardwalk, 6 th pullout	Bald Cypress, Water Tupelo, Carolina Ash
	Elevated boardwalk, 24 th pullout	Bald Cypress, Water Tupelo, Carolina Ash, lake

Habitat type	Sample sites	Associated plant species
Wet Longleaf Pine savannah		
	US 601 at N bridge	Longleaf Pine
	US 601, West Road (hillside)	Longleaf Pine
	US 601, West Road (woods)	Longleaf Pine

Appendix 2. Times for end and beginning of civil twilight, hours of darkness, moon rise and set, percentage of moon illuminated, hours of moonlight during dark, and overnight percent cloud cover for all moth collecting nights between Nov. 2009 and Oct. 2010. Two-day dates indicate UV or MV lamp traps were used. Single-day dates indicate collecting at building lights. Full-moon dates: 2 Nov, 2 Dec, and 31 Dec in 2009; 30 Jan, 28 Feb, 29 Mar, 28 Apr, 27 May, 26 Jun, 25 Jul, 24 Aug, 23 Sep, and 22 Oct in 2010. Hours of moonlight during darkness and % cloud cover are calculated from end to beginning of civil twilight for 2-day dates, and end of civil twilight to midnight for single-day dates. Average % cloud cover between 7 pm and 7 am for overnight UV or MV trapping, and between 7 pm and 1 am for building-light sampling.

Collection date	Civil twilight			Moon rise (date)	Moon set (date)	% Moon light		
	End (pm day 1)	Begin (am day 2)	Hours of darkness			disk visible	Moon (h)	% cloud cover
6–7 Nov	5:53	6:23	12:30	8:56 pm (6 th)	11:45 am (7 th)	81	9:27	0.2
7–8 Nov	5:52	6:24	12:32	10:06 pm (7 th)	12:28 pm (8 th)	72	8:18	0.0
13–14 Dec	5:44	6:54	13:10	4:44 am (13 th)	2:58 pm (13 th)	11	0:00	45.2
14–15 Dec	5:44	6:54	13:10	5:45 am (14 th)	3:43 pm (14 th)	5	0:00	73.4
15–16 Dec	5:44	6:55	13:11	6:44 am (15 th)	4:32 pm (15 th)	1	0:00	46.2
17 Dec	5:45	6:55	13:10	8:24 am (17 th)	6:23 pm (17 th)	1	0:38	94.5
15 Jan	6:05	7:02	12:57	7:41 am (15 th)	6:10 pm (15 th)	0	0:05	20.0
16–17 Jan	6:06	7:02	12:56	8:13 am (16 th)	7:07 pm (16 th)	2	1:01	94.2
22–23 Jan	6:11	7:00	12:49	10:57 am (22 nd)	12:46 am (23 rd)	43	6:35	15.6
23–24 Jan	6:12	6:59	12:47	11:30 am (23 rd)	1:49 am (24 th)	50	7:38	94.4
19–20 Feb	6:36	6:38	12:02	9:31 am (19 th)	11:39 pm (19 th)	27	5:03	2.2
20–21 Feb	6:38	6:37	11:59	10:07 am (20 th)	12:42 am (21 st)	36	6:04	5.4
8–9 Mar	6:51	6:18	11:27	3:00 am (9 th)	1:00 pm (9 th)	40	3:18	28.6
9–10 Mar	6:52	6:16	11:24	3:41 am (10 th)	1:57 pm (10 th)	31	2:35	69.0
17–18 Mar	7:58	7:06	11:08	8:04 am (17 th)	9:32 pm (17 th)	14	1:26	87.8
18 Mar	7:59	7:04	11:05	8:34 am (18 th)	10:33 pm (18 th)	8	2:34	65.5
20–21 Mar	8:01	7:01	11:00	9:50 am (20 th)	12:37 am (21 st)	22	4:36	40.8
25 Mar	8:05	6:55	10:50	2:54 pm (25 th)	4:52 am (26 th)	74	3:55	35.5
30 Mar	8:08	6:48	10:40	8:46 pm (30 th)	7:46 am (31 st)	99	3:14	0.0
2 Apr	8:11	6:44	10:33	12:06 am (3 rd)	10:01 am (3 rd)	84	0:00	8.0
6 Apr	8:13	6:39	10:26	2:38 am (6 th)	12:49 pm (6 th)	57	0:00	1.0
16–17 Apr	8:22	6:25	10:03	7:50 am (16 th)	10:30 pm (16 th)	5	2:08	1.8
17–18 Apr	8:23	6:24	10:01	8:36 am (17 th)	11:32 pm (17 th)	11	3:09	6.6
23–24 Apr	8:28	6:16	9:48	3:01 pm (23 rd)	4:00 am (24 th)	71	7:32	60.4
24–25 Apr	8:29	6:15	9:46	4:09 pm (24 th)	4:33 am (25 th)	81	8:04	78.0
14–15 May	8:45	5:55	9:10	6:30 am (14 th)	9:22 pm (14 th)	1	0:37	82.2
15–16 May	8:46	5:54	9:08	7:22 am (15 th)	10:23 pm (15 th)	3	1:37	66.6
11–12 Jun	9:04	5:43	8:39	5:10 am (11 th)	8:09 pm (11 th)	1	0:00	20.0
12–13 Jun	9:05	5:43	8:38	6:08 am (12 th)	9:08 pm (12 th)	0	0:03	32.4
25–26 Jun	9:08	5:45	8:37	8:16 pm (25 th)	6:13 am (26 th)	99	8:37	50.0
26–27 Jun	9:08	5:46	8:38	9:02 pm (26 th)	7:12 am (27 th)	100	8:38	68.0
15–16 Jul	9:04	5:56	8:52	10:48 am (15 th)	11:10 pm (15 th)	20	2:06	76.4

Collection date	Civil twilight			Moon rise (date)	Moon set (date)	% Moon light		
	End (pm day 1)	Begin (am day 2)	Hours of darkness			disk visible	light (h)	cloud cover
16–17 Jul	9:04	5:57	8:53	11:56 am (16 th)	11:43 pm (16 th)	31	2:39	65.6
13–14 Aug	8:40	6:18	9:38	10:49 am (13 th)	10:16 pm (13 th)	18	1:36	77.0
14–15 Aug	8:38	6:19	9:41	11:58 am (14 th)	10:54 pm (14 th)	28	2:16	35.6
30 Aug	8:18	6:31	10:13	10:47 pm (30 th)	1:22 pm (31 st)	71	0:13	11.0
6–7 Sep	8:08	6:36	10:28	6:01 am (7 th)	6:25 pm (6 th)	5	0:35	13.8
8–9 Sep	8:06	6:38	10:32	8:26 am (9 th)	7:36 pm (8 th)	0	0:00	54.6
16–17 Sep	7:54	6:44	10:50	3:39 pm (16 th)	1:51 am (17 th)	64	5:57	21.6
17–18 Sep	7:53	6:44	10:51	4:19 pm (17 th)	2:49 am (18 th)	73	6:56	70.8
21–22 Sep	7:47	6:47	11:00	6:19 pm (21 st)	6:31 am (22 nd)	97	10:44	27.2
29–30 Sep	7:36	6:53	11:17	11:13 pm (29 th)	2:06 pm (30 th)	66	7:40	64.2
7–8 Oct	7:25	6:59	11:44	7:11 am (7 th)	8:41 pm (7 th)	0	1:46	0.0
12–13 Oct	7:19	7:02	11:43	12:44 pm (12 th)	10:43 pm (12 th)	28	3:24	33.8
15–16 Oct	7:15	7:05	11:50	2:53 pm (15 th)	1:38 am (16 th)	58	6:23	0.0
16–17 Oct	7:14	7:05	11:51	3:25 pm (16 th)	2:34 am (17 th)	67	7:20	0.0
20–21 Oct	7:09	7:09	12:00	5:15 pm (20 th)	6:14 am (21 st)	94	11:05	1.4
25–26 Oct	7:04	7:13	12:09	8:16 pm (25 th)	11:07 am (26 th)	93	11:57	68.6

Appendix 3. Times for end and beginning of civil twilight, total rainfall, min/max temperature, min/max relative humidity, and min/max wind speed during darkness for all moth collecting nights between November 2009 and October 2010. Two-day dates indicate UV or MV lamp traps were used. Single-day dates indicate collecting at building lights. Rainfall, temperature, RH, and wind speed are calculated from end to beginning of civil twilight for 2-day dates, and end of civil twilight to midnight for single-day dates.

Collection date	Civil twilight		Rain (cm)	Temperature		RH		Wind speed	
	End (pm day 1)	Begin (am day 2)		min (°C)	max (°C)	min (%)	max (%)	min (kph)	max (kph)
6–7 Nov	5:53	6:23	0.00	1.8	20.9	30	100	0.0	6.1
7–8 Nov	5:52	6:24	0.00	3.7	22.9	32	100	0.0	6.0
13–14 Dec	5:44	6:54	0.00	5.6	8.1	100	100	0.0	7.1
14–15 Dec	5:44	6:54	0.00	10.1	12.5	95	100	0.0	7.1
15–16 Dec	5:44	6:55	0.00	10.8	19.6	76	100	4.8	11.9
17 Dec	5:45	6:55	0.00	4.2	12.0	26	69	5.8	9.8
15 Jan	6:05	7:02	0.00	5.9	20.6	24	71	4.0	7.4
16–17 Jan	6:06	7:02	2.29	9.7	12.9	64	100	2.4	14.8
22–23 Jan	6:11	7:00	0.00	6.3	9.3	82	96	1.8	10.0
23–24 Jan	6:12	6:59	0.00	7.3	11.9	70	98	1.6	12.9
19–20 Feb	6:36	6:38	0.00	-1.6	17.7	27	99	2.3	10.5
20–21 Feb	6:38	6:37	0.00	-0.1	20.7	22	98	1.8	7.4
8–9 Mar	6:51	6:18	0.00	3.9	23.7	20	93	1.9	10.3
9–10 Mar	6:52	6:16	0.00	12.6	27.0	23	60	6.4	13.2
17–18 Mar	7:58	7:06	0.25	7.6	13.1	58	100	2.9	6.4
18 Mar	7:59	7:04	0.25	8.8	13.1	58	100	3.1	5.8
20–21 Mar	8:01	7:01	0.00	8.0	27.4	26	92	3.9	14.8
25 Mar	8:05	6:55	0.00	19.8	25.3	38	50	12.2	16.1
30 Mar	8:08	6:48	0.00	16.2	24.2	33	55	5.8	15.6
2 Apr	8:11	6:44	0.00	23.3	33.9	20	52	7.7	12.1
6 Apr	8:13	6:39	0.00	18.5	34.5	24	81	8.5	11.7
16–17 Apr	8:22	6:25	0.00	18.2	31.1	36	81	8.2	15.1
17–18 Apr	8:23	6:24	0.00	16.9	30.9	27	88	4.7	15.8
23–24 Apr	8:28	6:16	0.00	17.6	30.6	38	95	5.0	12.9
24–25 Apr	8:29	6:15	0.25	17.1	23.6	89	100	3.2	14.0
14–15 May	8:45	5:55	0.00	18.9	32.6	54	100	4.2	8.9
15–16 May	8:46	5:54	0.00	20.4	34.4	41	99	6.8	9.3
11–12 Jun	9:04	5:43	0.00	21.4	34.7	61	100	0.0	6.6
12–13 Jun	9:05	5:43	0.00	25.0	36.0	62	100	4.8	11.3
25–26 Jun	9:08	5:45	0.00	22.9	33.1	84	100	0.0	12.6
26–27 Jun	9:08	5:46	0.00	24.1	33.9	79	100	0.0	7.1
15–16 Jul	9:04	5:56	0.00	23.1	33.2	90	100	2.6	7.4
16–17 Jul	9:04	5:57	0.00	25.7	33.9	69	100	4.0	11.7
13–14 Aug	8:40	6:18	0.76	23.8	35.8	74	100	3.1	16.7
14–15 Aug	8:38	6:19	0.03	24.8	30.4	91	100	0.0	10.3
30 Aug	8:18	6:31	0.00	23.6	32.6	53	100	4.5	9.0
6–7 Sep	8:08	6:36	0.00	19.8	33.7	47	100	2.3	9.3

Collection date	Civil twilight		Rain (cm)	Temperature		RH		Wind speed	
	End (pm day 1)	Begin (am day 2)		min (°C)	max (°C)	min (%)	max (%)	min (kph)	max (kph)
	8–9 Sep	8:06		6:38	0.00	22.7	34.5	66	100
16–17 Sep	7:54	6:44	0.00	20.1	32.9	42	97	6.8	11.7
17–18 Sep	7:53	6:44	0.00	20.7	35.0	55	100	2.3	13.0
21–22 Sep	7:47	6:47	0.00	20.3	35.4	43	100	2.4	11.9
29–30 Sep	7:36	6:53	0.51	19.9	21.5	98	100	7.7	13.0
7–8 Oct	7:25	6:59	0.00	10.6	28.2	29	100	0.0	9.7
12–13 Oct	7:19	7:02	0.00	15.9	30.5	49	100	3.5	12.4
15–16 Oct	7:15	7:05	0.00	6.4	24.9	30	100	3.2	14.2
16–17 Oct	7:14	7:05	0.00	4.8	24.1	36	100	0.0	8.2
20–21 Oct	7:09	7:09	0.00	10.1	24.3	62	100	2.3	6.0
25–26 Oct	7:04	7:13	0.25	16.1	18.8	100	100	2.9	9.8

Appendix 4. Moths collected from Congaree NP from November 2009 through October 2010. Number of individuals collected in each month is shown for each taxon as is the total number collected.

A. All specimens identified to species.

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Eriocraniidae																	
Eriocraniinae																	
		<i>Dyseriocrania</i>	<i>griseocapitella</i> (Walsingham)	070001					3								3
Heliozelidae																	
		Heliozelinae															
		<i>Antispila</i>	<i>nysaeifoliella</i> Clemens ^{A, D}	210078						1							1
Adelidae																	
		Adelinae															
		<i>Adela</i>	<i>caeruleella</i> Walker ^A	210117						3	1						4
Psychidae																	
		Psychinae															
		<i>Cryptothelea</i>	<i>gloverii</i> (Packard)	300012								9	11				20
		<i>Basycladus</i>	<i>tracyi</i> (Jones)	300020									1	1			2
Tineidae																	
		Acrolophinae															
		<i>Amydria</i>	<i>effrentella</i> Clemens	300046								1		2	1		4
		<i>Acrolophus</i>	<i>propinquus</i> (Walsingham)	300063								4			9		13
			<i>mycetophagus</i> Davis	300100							1			1			2
Nemapogoninae																	
		<i>Nemapogon</i>	<i>angulifasciella</i> (Dietz) ^A	300106											2		2
			<i>granella</i> (L.)	300112					1	2							3
			<i>variataella</i> (Clemens) ^A	300121						1							1

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
		<i>Isocorypha</i>	<i>mediostriatella</i> (Clemens)	300140											1		1
	Tineinae																
	<i>Tinea</i>		<i>apicimaculella</i> Chambers	300144											2	1	3
			<i>pellionella</i> (L.)	300157								1					1
	<i>Niditinea</i>		<i>fuscella</i> (L.)	300164												1	1
	<i>Monopis</i>		<i>dorsistrigella</i> (Clemens)	300171					1								1
	Clade A																
	<i>Hybroma</i>		<i>servulella</i> Clemens	300182								1					1
	<i>Mea</i>		<i>bipunctella</i> (Dietz) ^A	300186					2							1	3
			<i>skinnerella</i> (Dietz) ^A	300187								2					2
	Scardiinae																
	<i>Scardia</i>		<i>anatomella</i> (Grote)	300203											1		1
	Unplaced																
	<i>Pelecystola</i>		<i>nearctica</i> Davis & Davis ^A	300217								2		1			5
	<i>Philonome</i>		<i>clemensella</i> Chambers ^A	300220							3						3
	<i>Xylesthia</i>		<i>pruniramietella</i> Clemens	300223										7	1		8
	Bucculatricidae																
	Bucculatricinae																
	<i>Bucculatrix</i>		<i>coronatella</i> Clemens ^A	330079													4
	Gracillariidae																
	Gracillariinae																
	<i>Caloptilia</i>		<i>belfragella</i> (Chambers) ^A	330115											2		2
			<i>bimaculatella</i> (Ely)	330117											1		1
			<i>hypericella</i> (Braun) ^{A, D}	330130											3	1	4
			<i>packardella</i> (Chambers) ^{A, E}	330142											1		1
			<i>rhoifoliella</i> (Chambers) ^A	330152											4		4

Family Subfamily Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
	<i>stigmatella</i> (Fabricius)	330161											3		3
	<i>superbifrontella</i> (Clemens)	330164											4		4
<i>Povolnya</i>	<i>quercinigrella</i> (Ely)	330170					1								1
<i>Micrurapteryx</i>	<i>salicifoliella</i> (Chambers) ^{A, E}	330172											1		1
<i>Neurobathra</i>	<i>strigifinitella</i> (Clemens)	330187											2		2
<i>Acrocercops</i>	<i>astericola</i> (Frey & Boll) ^A	330218												1	1
Lithocolletinae															
<i>Cameraria</i>	<i>conglomeratella</i> (Zeller) ^A	330353						9							9
	<i>guttifinitella</i> (Clemens) ^{A, D}	330360											1		1
	<i>quercivorella</i> (Chambers)	330378								1			6	1	8
Yponomeutidae															
Yponomeutinae															
<i>Yponomeuta</i>	<i>multipunctella</i> Clemens	360017							1						1
<i>Zelleria</i>	<i>retiniella</i> Forbes	360026							5	1					6
Plutellidae															
Plutellinae															
<i>Plutella</i>	<i>xylostella</i> (L.) ^C	360083						3	1						4
Glyphipterigidae															
Glyphipteriginae															
<i>Drymoana</i>	<i>blanchardi</i> Heppner	360093											3		3
Attevidae															
Attevininae															
<i>Atteva</i>	<i>aurea</i> (Fitch)	360211						2		2	1	1	4	2	13
Autostichidae															
Symmocinae															
<i>Spinittbia</i>	<i>hodgesi</i> Lee & Brown ^A	420007												1	1

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
		<i>Gerdana</i>	<i>caritella</i> Busck	420008						1	1	1	1	4	4		6
	Glyphidocerinae																
		<i>Glyphidocera</i>	<i>jumperella</i> Adamski ^A	420020						1	1			7	1	1	10
			<i>lactiflosella</i> (Chambers)	420021							2	10					12
			<i>septentrionella</i> Busck	420024						1							1
	Oecophoridae																
	Oecophorinae																
		<i>Inga</i>	<i>sparsiciliella</i> (Clemens)	420029								15	8				23
		<i>Decantha</i>	<i>boreasella</i> (Chambers)	420037						8							8
		<i>Epicallima</i>	<i>argenticinctella</i> (Clemens)	420041							3	4					7
	Depressariidae																
	Peleopodinae																
		<i>Pseuderotis</i>	<i>obiterella</i> (Busck)	420222											1		1
		<i>Antaeotricha</i>	<i>schlaegeri</i> (Zeller)	420224						10		2	4	1	1		17
			<i>leucillana</i> Zeller	420227						2		1	1				4
			<i>osseella</i> (Walsingham)	420228							2	2	4	4	2		8
			<i>humilis</i> (Zeller)	420232							1	2	4	11	1	1	19
			<i>albulella</i> (Walker)	420237							5	6	10	5	9		35
		<i>Menesta</i>	<i>melanella</i> Murtfeldt	420250						1							1
	Unplaced																
		<i>Eupragia</i>	<i>hospita</i> Hodges	420255							2	4	14	4	4		24
		<i>Psilocorsis</i>	<i>quercicella</i> Clemens	420259						1	2	2		3	3		8
			<i>reflexella</i> Clemens	420261						1	4	2	16	2	2		25
	Cosmopterigidae																
	Chrysopeleinae																
		<i>Walshia</i>	<i>miscelorella</i> (Chambers) ^A	420321											10	2	12

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Cosmopteriginae																	
<i>Cosmopterix</i>																	
			<i>nitens</i> (Walsingham)	420352							1						1
			<i>gemmiferella</i> (Clemens)	420370						1							1
			<i>teligera</i> Meyrick	420381						7					1		8
<i>Melanocinlis</i>																	
			<i>lineigera</i> Hodges	420387						1					1		2
			<i>sparsa</i> Hodges ^{A, E}	420389						3							3
<i>Stagnatophora</i>																	
			<i>wyattella</i> Barnes & Busck ^{A, E}	420393						1					1		1
<i>Pyroderces</i>																	
			<i>badia</i> (Hodges)	420399						1							1
<i>Limnaecia</i>																	
			<i>phragmitella</i> Stainton ^{A, D}	420401						1							1
<i>Teladoma</i>																	
			<i>helianthi</i> Busck ^A	420402						2							2
<i>Triclonella</i>																	
			<i>pergandeella</i> Busck	420410						1		1			1		3
Gelechiidae																	
Anacampsinae																	
<i>Untomia</i>																	
			<i>albitrigella</i> (Chambers)	420464						1	1				1		3
<i>Battaristis</i>																	
			<i>concinusella</i> (Chambers) ^{A, E}	420466						1							1
			<i>nigratomella</i> (Clemens) ^A	420468						2							2
			<i>vittella</i> (Busck)	420470						2							2
<i>Anacampsis</i>																	
			<i>agrimoniella</i> (Clemens) ^A	420471						1	1	1					3
			<i>coverdalella</i> Kearfott	420476						3							3
<i>Holophysis</i>																	
			<i>emblemella</i> (Clemens) ^A	420499									3				3
Dichomeridinae																	
<i>Dichomeris</i>																	
			<i>ligulella</i> Hübner	420510					5						2	2	9
			<i>punctipennella</i> (Clemens)	420520					6		1	1			2		10
			<i>punctidiscella</i> (Clemens)	420521						3							3
			<i>siren</i> Hodges ^A	420528											1		1
			<i>kimballi</i> Hodges	420532					1								1
			<i>ventrella</i> (Fitch) ^A	420533						6	2						8

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>georgiella</i> (Walker)	420534					1						1		2
			<i>bipunctella</i> (Walsingham)	420536								3					3
			<i>aglaia</i> Hodges	420541											1		1
			<i>laetitia</i> Hodges ^A	420545											3		3
			<i>inserrata</i> (Walsingham)	420556					2								2
			<i>bolize</i> Hodges	420558								1					1
			<i>agonia</i> Hodges	420579											1		1
			<i>luteostrigella</i> Chambers	420594					1						4		5
Thiotrichinae																	
	Anomologinae																
	<i>Monochroa</i>		<i>quinquepunctella</i> (Busck) ^A	420631											3		3
	<i>Theisoa</i>		<i>constrictella</i> (Zeller) ^{A, D}	420635					2		1						3
	<i>Stereomita</i>		<i>andropogonis</i> Braun	420638											3		3
	<i>Aristotelia</i>		<i>putibundella</i> (Zeller) ^{A, D}	420667					3	1							4
			<i>roseosuffusella</i> (Clemens)	420670								5			6	4	15
			<i>rubidella</i> (Clemens)	420671					5			1			1		7
Gelechiinae																	
	<i>Agnippe</i>		<i>prunifoliella</i> (Chambers)	420698								1					1
	<i>Coleotechnites</i>		<i>canusella</i> (Freeman) ^{A, D}	420716							1						1
			<i>condignella</i> (Busck) ^A	420720							2						2
			<i>quercivorella</i> (Chambers) ^{A, D}	420747					1	9							10
			<i>variella</i> (Chambers) ^A	420753							4						4
	<i>Sinoe</i>		<i>robinella</i> (Fitch)	420754					5								5
	<i>Exoteleia</i>		<i>chillcotti</i> Freeman ^{A, D}	420759							4						4
	<i>Arogalea</i>		<i>crisifasciella</i> (Chambers)	420765					5	3		1			2		11
	<i>Pseudotelphusa</i>		<i>quercinigracella</i> (Chambers) ^A	420787											1		1
	<i>Pseudochelaria</i>		<i>walsinghami</i> Dietz ^A	420805							4						4

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total		
Chionodes			<i>formosella</i> (Murtfeldt) ^A	420887							1						1		
			<i>fuscomaculella</i> (Chambers)	420889									2						2
			<i>rabula</i> Hodges	420898							1			1					4
			<i>thoraceochrella</i> (Chambers)	420959								1		2			8	1	11
			<i>obscurusella</i> (Chambers) ^A	420964											9		4		13
			<i>mediofuscella</i> (Clemens)	420971							2			4			4		10
			<i>sevir</i> Hodges	420976									5						5
			<i>discoocellella</i> (Chambers)	421006													3		3
			<i>serotinella</i> (Busck) ^{A, D}	421125									5				2	1	8
			<i>argutiola</i> Hodges ^{A, D}	421137							3		4	1			2		10
Aroga			<i>compositella</i> (Walker)	421140								2			1		3		
			<i>bosqueella</i> (Chambers)	421168												3		3	
Coleophoridae																			
Coleophorinae																			
Coleophora			<i>cratipennella</i> Clemens ^A	421622						6							6		
Batrachedridae																			
Batrachedrinae																			
Homaledra			<i>sabalella</i> (Chambers) ^A	421687					1								1		
Blastobasidae																			
Holcocerinae																			
Calosima			<i>dianella</i> Dietz ^A	421758						1	1						2		
Blastobasinae																			
Blastobasis			<i>glandulella</i> (Riley)	421766					3								3		
Momphidae																			
Momphinae																			
Mompha			<i>circumscriptella</i> (Zeller)	421823							1	1					2		

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>eloisella</i> (Clemens)	421833							1						1
			<i>passerella</i> (Busck)	421844											1		1
Pterophoridae	Pterophorinae	<i>Stenoptilodes</i>	<i>brevipennis</i> (Zeller)	460016	1										2		3
			<i>taprobanes</i> (Felder & Rogenhofer)	460018												1	1
	<i>Geina</i>		<i>sheppardi</i> Landry	460063						3							3
	<i>Hellinsia</i>		<i>balanotes</i> (Meyrick)	460110									1	1			2
			<i>kellicotti</i> (Fish)	460112						1			1				2
			<i>glenni</i> (Cashatt)	460115						1							1
			<i>habecki</i> Matthews ^A	460132						3	1						4
	<i>Emmelina</i>		<i>monodactyla</i> (L.)	460150					2								2
	<i>Adaina</i>		<i>ambrosiae</i> (Murtfeldt)	460157										1			1
Carposinidae	Carposinae	<i>Carposina</i>	<i>sasakii</i> Matsumura	480006									1		3	1	5
			<i>biloba</i> Davis ^A	480009											2	1	3
Urodidae	Urodinae	<i>Urodus</i>	<i>parvula</i> (Edwards)	540001					2	2	5	4	5		14	4	36
Tortricidae	Tortricinae	<i>Acleris</i>	<i>subnivana</i> (Walker) ^A	620016					1								1
			<i>semiannula</i> (Robinson) ^{A, E}	620020		1											1
			<i>schalleriana</i> (L.) ^A	620027						2							2

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>chalybeana</i> (Fernald) ^A	620039					3								3
			<i>maculidorsana</i> (Clemens)	620044					1		1	2					4
	<i>Carolella</i>		<i>sartana</i> (Hübner)	620152							1	3	7	1	1		12
	<i>Henricus</i>		<i>edwardsiana</i> (Walsingham)	620158					6								6
	<i>Phtheochroa</i>		<i>modestana</i> (Busck) ^{A, E}	620183					4		1						1
	<i>Pandemis</i>		<i>lamprosana</i> (Robinson)	620248										11			15
			<i>limitata</i> (Robinson)	620249										1			1
	<i>Argyrotaenia</i>		<i>velutinana</i> (Walker)	620255	1						8	2	2				13
			<i>hodgesi</i> Heppner	620257						6				1			7
			<i>kimballi</i> Obratzsov	620259						4	1			1	1		7
			<i>tabulana</i> Freeman	620262					2	2	2	1		4			11
			<i>quercifoliata</i> (Fitch)	620282						2	5						7
	<i>Choristoneura</i>		<i>obsoletana</i> (Walker)	620296					2	2							2
			<i>fractivittana</i> (Clemens) ^B	620297					9								9
			<i>parallela</i> (Robinson)	620298							1						1
			<i>rosaceana</i> (Harris)	620300					2	13	18	16	11	15	4		79
			<i>pinus</i> Freeman	620308						9							9
	<i>Archips</i>		<i>argyrosipila</i> (Walker)	620323						1							1
			<i>georgiana</i> (Walker) ^A	620331						1							1
			<i>grisea</i> (Robinson)	620333							5						5
	<i>Clepsis</i>		<i>peritana</i> (Clemens)	620364					1	2	1	2	4	4	3	1	10
	<i>Coelostathma</i>		<i>discopunctana</i> Clemens	620379								4					8
	<i>Sparganothis</i>		<i>sulfureana</i> (Clemens)	620390					1								1
			<i>bistriata</i> Kearfott	620393							5			2			7
			<i>umbrana</i> Barnes & Busck ^{A, E}	620410							1						1
			<i>distincta</i> (Walsingham)	620412									1	2			3
	<i>Cenopsis</i>		<i>pettitana</i> (Robinson)	620417					4								4
			<i>niveana</i> Walsingham ^A	620418					13		1						14

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>reticulatana</i> (Clemens)	620419								1	1				2
			<i>diliticostana</i> Walsingham	620423							1						1
			<i>directana</i> (Walker)	620425							1	2					3
			<i>chambersana</i> Kearfott	620432							1						1
		<i>Platynota</i>	<i>idaeusalis</i> (Walker) ^B	620433						3	2	9	7	4	2	1	28
			<i>exasperatana</i> (Zeller)	620434							5		3	1			9
			<i>semiustana</i> Walsingham	620435							1		2				3
			<i>rostrana</i> (Walker)	620436								3	4	2	3		3
			<i>flavedana</i> Clemens	620443						3	3	4	6	2	9	2	29
			<i>stultana</i> Walsingham ^A	620449											6		6
			<i>hebesana</i> (Walker)	620466											3		3
			<i>verutana</i> Zeller	620478								1	6		7		14
			<i>argutana</i> (Clemens) ^B	620485						1	2	3			3		9
		<i>Paralobesia</i>	<i>sambuci</i> (Clarke) ^{A, E}	620496						1							1
			<i>cyclopiana</i> (Heinrich) ^A	620509						2							2
		<i>Eumarozia</i>	<i>malachitana</i> (Zeller)	620517								2			3		5
		<i>Zomaria</i>	<i>interruptioneana</i> (Fernald)	620518						5					4		9
		<i>Phaecasiophora</i>	<i>confixana</i> (Walker) ^A	620540								1			1		2
			<i>niveiguttana</i> Grote	620541							1						1
			<i>furfuranum</i> (McDunnough) ^A	620545						1	2	1	1		9		14
		<i>Olethreutes</i>	<i>atrodentana</i> (Fernald) ^{A, D}	620554								1					1
			<i>brunneopurpurata</i> (Heinrich) ^A	620575											1		1
			<i>permundana</i> (Clemens) ^A	620585							1	1					2
			<i>fasciatana</i> (Clemens)	620591						4							4
			<i>exaeresimum</i> (Heinrich) ^{A, E}	620593									1	1			2
			<i>lacunatum</i> (Freeman)	620594						5	4	4	2		4	1	16
			<i>griseoalbana</i> (Walsingham)	620596						1			1	1			3

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>osmundana</i> (Fernald)	620597							1				2		3
			<i>auricapitana</i> (Walsingham) ^{A, D}	620598							1						1
	<i>Celypha</i>		<i>cespitana</i> (Hübner)	620629						2		3			1		6
	<i>Pristerognatha</i>		<i>fuligana</i> (Denis & Schiffmüller) ^A	620630							1						1
	<i>Hedya</i>		<i>separatana</i> (Kearfott) ^A	620634							1						1
	<i>Ancylis</i>		<i>spiraefoliana</i> (Clemens)	620653						6							6
			<i>platanana</i> (Clemens)	620658						2							2
			<i>floridana</i> (Zeller)	620662						5	1				7		13
			<i>divisana</i> (Walker)	620663						2					1		3
	<i>Rhyacionia</i>		<i>rigidana</i> (Fernald)	620695				11									11
			<i>frustrana</i> (Comstock)	620710				2		2							4
			<i>aktita</i> Miller ^A	620713			6	5									11
	<i>Retinia</i>		<i>albicapitana</i> (Busck) ^{A, E}	620722								2					2
			<i>gemistrigulana</i> (Kearfott)	620727						4	7						11
	<i>Eucosma</i>		<i>floridana</i> Kearfott ^A	620743											1		1
			<i>sombreana</i> Kearfott	620752											4		4
			<i>umbrastriana</i> (Kearfott)	620764						4		1					5
			<i>ambodaidaleia</i> (Miller)	620790					2								2
			<i>argutipunctana</i> (Blanchard & Knudson) ^A	620795											1		1
			<i>parmatana</i> (Clemens)	620832											2		2
			<i>raracana</i> (Kearfott) ^A	620837										1	6		7
	Unplaced		<i>gomonana</i> Kearfott ^A	620880													2
	<i>Pelochrista</i>		<i>cataclystiana</i> (Walker)	620909						2		4			3		7
			<i>derelecta</i> (Heinrich)	620926											12		12
			<i>quinquemaculana</i> (Robinson)	621015											2		2
			<i>robinsonana</i> (Grote)	621021						3		3					6

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total				
<i>Eucopeia</i>	<i>Epiblema</i>		<i>womonana</i> (Kearfott) ^A	621050										1	1		2				
			<i>cocana</i> (Kearfott)	621059						1									1		
			<i>strenuana</i> (Walker)	621065									2							2	
			<i>abruptana</i> (Walsingham) ^A	621066								2	7				2			11	
			<i>luctuosissima</i> Blanchard ^{A, E}	621068													3	1		4	
			<i>tripartitana</i> (Zeller)	621078							1		3							4	
			<i>scudderiana</i> (Clemens)	621082						5										5	
			<i>discreivana</i> (Heinrich) ^A	621083								1								1	
			<i>desertana</i> (Zeller)	621085								1								1	
			<i>carolinana</i> (Walsingham) ^A	621087								2								2	
<i>Notocelia</i>	<i>Sonia</i>		<i>otiosana</i> (Clemens)	621098					1	5					4			10			
			<i>illotana</i> (Walsingham) ^{A, E}	621108										1		1			1		
<i>Proteoteras</i>	<i>Pseudexentera</i>		<i>constrictana</i> (Zeller)	621116									1		2			3			
			<i>paraplesiana</i> Blanchard & Knudson ^A	621117									1		3				4		
			<i>divaricata</i> Miller ^{A, E}	621122												1				1	
			<i>aesculana</i> Riley	621133							2		4	1		3				10	
			<i>faracana</i> (Kearfott) ^{A, D}	621151						7										7	
			<i>hodsoni</i> Miller ^{A, D}	621153						4										4	
			<i>spoliana</i> (Clemens)	621157						7										7	
			<i>vaccinii</i> Miller ^{A, E}	621162						3										3	
			<i>costomaculana</i> (Clemens) ^A	621165							1										1
		<i>Gretchena</i>			<i>concupitana</i> Heinrich ^A	621168							1								1
	<i>bolliana</i> (Slingerland)			621171								1								1	
	<i>delicatana</i> Heinrich ^{A, D}			621173							2									2	
	<i>conciatricana</i> (Heinrich) ^A			621177						2										2	
<i>Chimoptesis</i>			<i>gerulae</i> (Heinrich)	621180					3										3		
			<i>pennsylvaniana</i> (Kearfott)	621181																7	

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total		
<i>Rhopota</i>	<i>Epinotia</i>	<i>Larisa</i>	<i>dietziana</i> (Kearfott)	621189					4	4			3				11		
			<i>finitimana</i> (Heinrich) ^{A, D}	621190						1									1
			<i>celtisana</i> (Riley) ^A	621201						6									6
			<i>xandana</i> (Kearfott) ^{A, E}	621207						2									2
			<i>nonana</i> (Kearfott) ^{A, E}	621243								1							1
			<i>subsolana</i> Miller ^A	621302						6									6
			<i>tautana</i> (Clemens) ^A	621304						4									4
			<i>packardi</i> (Zeller)	621307							1						1		2
			<i>prunivora</i> (Walsh) ^{A, E}	621308													1		1
			<i>fana</i> (Kearfott) ^{A, E}	621313							1								1
			<i>laricana</i> (Busck) ^{A, D}	621337							1								1
			<i>rana</i> (Forbes)	621338							1								1
			<i>Cydia</i>	<i>Gymnandrosoma</i>	<i>andana</i> (Forbes) ^{A, E}	621355						1	1						
<i>caryana</i> (Fitch)	621357								1								1		
<i>toreuta</i> (Grote)	621372										1							1	
<i>latiferreana</i> (Walsingham)	621383													1	12			13	
<i>punctidiscanum</i> Dyar	621385										1							2	
<i>insitiana</i> Zeller	621387									1					1			2	
<i>mana</i> (Kearfott) ^{A, D}	621388								4	1	1	2	2					10	
<i>inimicella</i> (Zeller)	621391									1	1	1	1	2	1			5	
<i>Cossidae</i>	<i>Hypoptinae</i>	<i>Givira</i>			<i>anna</i> (Dyar)	640016					2				1				3
					<i>francesca</i> (Dyar)	640019											1		
<i>Cossinae</i>	<i>Prionoxystus</i>	<i>robinae</i> (Peck) ^B				640029					2	6	1						9

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Dudgeoneidae	Cossulinae	<i>Cossula</i>	<i>magnifica</i> (Strecker) ^B	640047								4					4
Sesiidae																	
	Sesiinae	<i>Synanthedon</i>	<i>acerni</i> (Clemens)	640095						1	1						2
			<i>rubrofascia</i> (Edwards)	640109								1					1
Limacodidae	Limacodinae	<i>Tortricidia</i>	<i>testacea</i> Packard	660010						7							7
			<i>pallida</i> (Herrich-Schäffer)	660011							2						2
		<i>Heterogenea</i>	<i>shurtleffi</i> Packard	660015						1	1	2	1		3		8
		<i>Lithacodes</i>	<i>fasciola</i> (Herrich-Schäffer) ^B	660023						1	9	5	12	11	6		43
		<i>Apoda</i>	<i>γ-inversum</i> (Packard)	660025						2	2						2
			<i>biguttata</i> (Packard) ^B	660027						1	1	6	3	1			11
			<i>badia</i> (Hübner) ^B	660029						3	3	3	1	1			8
		<i>Prolimacodes</i>	<i>beutenmuelleri</i> (Edwards)	660033								7	24	5	8		44
		<i>Isochaetes</i>	<i>pithecium</i> (Smith)	660035						1	1						2
		<i>Phobetron</i>	<i>nasoni</i> (Grote) ^B	660037							15	15	1		2		18
		<i>Natada</i>	<i>textula</i> (Herrich-Schäffer)	660039							8	4	4	2	2		16
		<i>Isa</i>	<i>spinuloides</i> (Herrich-Schäffer)	660043							6		3	8			17
		<i>Adoneta</i>	<i>semifascia</i> (Walker)	660047									2				2
		<i>Euclea</i>	<i>delphinii</i> (Boisduval) ^B	660051								1	5	2	2		10
			<i>nanina</i> Dyar	660052										1			1
		<i>Parasa</i>	<i>chloris</i> (Herrich-Schäffer)	660053								2		3			5
			<i>indeterminata</i> (Boisduval)	660054									1				1
		<i>Acharia</i>	<i>stimulea</i> (Clemens)	660055								3	1				4

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Megalopygidae	Megalopyginae	<i>Megalopyge</i>	<i>lacyi</i> (Barnes & McDunnough) ^A	660060							1						1
			<i>crispata</i> (Packard)	660061		1	5	3									9
			<i>opercularis</i> (Smith) ^B	660063			19	8					1				28
Zygaenidae	Procridinae	<i>Harrisina</i>	<i>americana</i> (Guérin-Méneville)	660092		1											2
Pyralidae	Galleriinae	<i>Galleria</i>	<i>mellonella</i> (L.)	800001									2				2
		<i>Omphalocera</i>	<i>cariosa</i> Lederer	800004			3	1									4
		<i>Aphomia</i>	<i>terrenella</i> Zeller	800009			4	3			4		2	1			10
			<i>fulminalis</i> (Zeller) ^{A, D}	800010			1	1			1		1				4
		<i>Cacotherapia</i>	<i>unicoloralis</i> (Barnes & McDunnough) ^A	800019			1										1
			<i>unipuncta</i> (Dyar)	800020											4		4
Chrysauginae	<i>Parachma</i>		<i>ochracealis</i> Walker	800033								14	1				15
	<i>Basacallis</i>		<i>tarachodes</i> (Dyar)	800034											3	1	4
	<i>Galasa</i>		<i>nigrinodis</i> (Zeller)	800048								2	2		5		9
	<i>Tosale</i>		<i>oviplagalis</i> (Walker)	800052							4	1	5		2		12
	<i>Clydonopteron</i>		<i>sacculana</i> (Bosc)	800059		6					1	4	3	1	5	2	22
	<i>Arta</i>		<i>statialis</i> Grote	800062							2		16	1	1		20

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>olivalis</i> Grote	800064									8	4			12
	Pyrulinae	<i>AglOSSa</i>	<i>costiferalis</i> (Walker)	800074											1		1
			<i>disciferalis</i> (Dyar)	800075							5	7	1	3	1		17
			<i>cuprina</i> Zeller	800080							4	13	6	2	3		28
			<i>oculalis</i> Hampson ^{A, D}	800085							4	1					1
			<i>intermedialis</i> (Walker)	800088							4	1			2		6
			<i>binodulalis</i> (Zeller)	800092							1	1			6		8
			<i>olinalis</i> (Guenée)	800094							7	9		2	6		24
	Epipaschiinae	<i>Macalla</i>	<i>zelleri</i> (Grote)	800100									1				1
			<i>superatalis</i> Clemens	800102						4	7	5	8	4			28
			<i>lunulalis</i> (Hulst)	800112							3		2	1	3		9
			<i>atrifascialis</i> (Hulst)	800116							1	1			11		13
			<i>robustella</i> (Zeller)	800122							1	8	5	5	11		29
			<i>scorteaalis</i> (Lederer)	800123							7	1					8
			<i>melanogrammos</i> (Zeller)	800124							1	3	3	1	11		19
			<i>militella</i> (Zeller)	800131							4				1		5
			<i>aplastella</i> (Hulst)	800132							2		1				3
			<i>asperatella</i> (Clemens)	800133							1	5	4	1			11
	Phycitinae	<i>Acrobasis</i>	<i>vaccinii</i> Riley	800150						2	4	3					9
			<i>indigenella</i> (Zeller)	800152							8						8
			<i>caryae</i> Grote	800156							1						1
			<i>nuxvorella</i> Neunzig ^A	800160											1		1
			<i>stigmella</i> Dyar	800163							3						4
			<i>exsulella</i> (Zeller)	800165							1		1				1

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>caryivorella</i> Ragonot	800173									3				3
			<i>cirroferella</i> Hulst	800176									1				1
			<i>minimella</i> Ragonot	800177							3						3
			<i>rubrifasciella</i> Packard ^A	800178										2			2
			<i>carpinivorella</i> Neunzig ^A	800182							1						1
	<i>Euzophera</i>		<i>semifuneralis</i> (Walker)	800215					10		1	22	13	4	13		63
			<i>ostricolorella</i> Hulst	800220					2						6	4	12
	<i>Eulegia</i>		<i>ochrifrontella</i> (Zeller)	800222					3		3	2			6		11
	<i>Ephesiodes</i>		<i>infimella</i> Ragonot	800225					4		1	3			1		9
	<i>Moodna</i>		<i>ostrinella</i> (Clemens)	800232					1		1				1		3
			<i>pallidostrinella</i> Neunzig	800233											1		1
	<i>Caudellia</i>		<i>apyrella</i> Dyar ^A	800235										7	12	19	19
	<i>Vitula</i>		<i>edmandsii</i> (Packard)	800239								1	2		4	3	10
	<i>Ephestia</i>		<i>columbiella</i> Neunzig	800261					4		1				1		6
	<i>Wakulla</i>		<i>carneella</i> (Barnes & McDunnough)	800268							1						1
	<i>Tampa</i>		<i>dimediatella</i> Ragonot	800269					1		2	2			5	1	11
	<i>Varneria</i>		<i>postremella</i> Dyar	800270					4								4
			<i>atrifasciella</i> Barnes & McDunnough	800271								5			1		6
	<i>Oreana</i>		<i>unicolorella</i> (Hulst) ^A	800301													3
	<i>Salebriaria</i>		<i>turpidella</i> (Ragonot)	800306											2		8
			<i>engeli</i> (Dyar)	800310								1	1	1			3
			<i>rufimaculatella</i> Neunzig ^A	800313								1					1
			<i>squamopalpiella</i> Neunzig	800321					3		5	1			3		12
			<i>floridana</i> Neunzig ^{A, E}	800322					1		1						1
			<i>bella</i> Neunzig ^{A, E}	800326					1								1
			<i>fergusonella</i> (Blanchard & Knudson) ^{A, E}	800327					2								2

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total				
<i>Quasisalebria</i>		<i>atrata</i> (Blanchard & Knudson)		800333						1	1						2				
			<i>Sciota</i>	<i>crassifasciella</i> (Ragonot) ^A	800350							4		1	1		2			7	
				<i>quasisubfuscella</i> Neunzig ^{A, E}	800352							1									1
				<i>celidella</i> (Hulst) ^A	800370	13	17	13	18	1	1	6									68
			<i>Tulsa</i>	<i>subfuscella</i> (Ragonot)	800371									2	2	2					6
				<i>winella</i> (Ragonot)	800372	1	9	2	2			17									31
				<i>finitella</i> (Walker) ^A	800375								3								3
				<i>nyssaeocollella</i> (Dyar)	800383	1	2	1													4
			<i>Actrix</i>	<i>dissimulatrix</i> Heinrich ^{A, E}	800384								3			4	34				41
				<i>clarioralis</i> (Walker)	800428	1											1				2
<i>Dioryctria</i>		<i>taedivorella</i> Neunzig & Leidy	800434											13				13			
		<i>amatella</i> (Hulst)	800435												1	7	3		19		
<i>Canarsia</i>		<i>pygmaeella</i> Ragonot	800447											1				6			
		<i>ulmiarrosorella</i> (Clemens)	800479																8		
		<i>petrella</i> (Zeller)	800482	1	1	1													3		
		<i>endonephele</i> (Hampson)	800506											1	7				8		
		<i>groteii</i> Ragonot	800528																1		
		<i>feriella</i> Hulst ^{A, E}	800529									2							2		
		<i>mellinella</i> Grote ^{A, D}	800545									1							1		
		<i>coccidivora</i> (Comstock) ^A	800557													1			1		
		<i>myersella</i> Dyar	800562													5	2		7		
		<i>fiskella</i> Dyar	800563	3												12			15		
<i>Baphala</i>		<i>pallida</i> (Comstock)	800577													1		2			
		<i>electella</i> (Hulst)	800626								1				2				3		
<i>Homoeosoma</i>		<i>deceptorium</i> Heinrich ^A	800641									4						4			
		<i>reliquellum</i> (Dyar)	800651	2							6	6	1		19	6			40		

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total				
Crambidae	<i>Cabnia</i>	<i>myronella</i> Dyar		800652						3	3						6				
				800659									5			4		9			
	<i>Peoria</i>	<i>roseotinctella</i> (Ragonot)		800666								7	4	2		8		21			
				800670									2	3	1	1		7	7		
	<i>Atascosa</i>	<i>glareosella</i> (Zeller)		800685								2	1			7		7			
				800687															3		
	<i>Homosassa</i>	<i>ella</i> (Hulst)		800687								2	1					3			
				800691										2		1		3			
	Crambidae	<i>Schoenobiinae</i>	<i>Donacula</i>		800707								3						3		
					800710								1							1	
				800713										1	1				2		
				800715									5	1					6		
				800719										1					1		
				800724											3	2				8	
				800725									1	3	2			2		2	
				800726													2			2	
				800727										1	11	7	3	4	19	1	46
				800728											2			1		3	
Acentropinae	<i>Elophila</i>		800729									7	2	1	13	1		28			
			800734									3	3	12	2	1		21			
			800735										2						2		
			800738										1	2	1				4		
			800739										10	3	3	2			18		
			800743									1						1	2		
			800744											1				1	2		
			800724																8		
			800725																2		
			800726																2		
Parapoynx	<i>Parapoynx</i>		800727															46			
			800728															3			
			800729																28		
			800734																21		
			800735																2		
			800738																4		
			800739																18		
			800743																2		
			800744																2		

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
<i>Eopargyractis</i>			<i>irroratalis</i> (Dyar)	800766							1				5		6
			<i>plevie</i> (Dyar) ^A	800768							5	1	1		7		14
	Crambinae	<i>Xubida</i>	<i>panalope</i> (Dyar)	800788							11	8	6	6	9		34
			<i>relovae</i> Klots ^{A, B}	800789										1			1
	<i>Haimbachia</i>		<i>squamulella</i> (Zeller)	800795							1	2					3
			<i>placidella</i> (Haimbach)	800802							1						1
	<i>Eoreuma</i>		<i>densella</i> (Zeller)	800805							13	1	3				17
	<i>Argyria</i>		<i>lacteella</i> (Fabricius)	800815							1	1	1	2			6
			<i>auratella</i> (Clemens)	800819							1						1
			<i>critica</i> Forbes	800820									2	1			3
	<i>Urola</i>		<i>nivalis</i> (Drury)	800821							5	1		4			10
	<i>Chilo</i>		<i>erianthalis</i> Capps	800832							1						1
	<i>Diatraea</i>		<i>evanescens</i> Dyar	800838							2			2			4
			<i>lisetta</i> (Dyar)	800841							1						1
	<i>Fissicrambus</i>		<i>mutabilis</i> (Clemens)	800870						1		2					3
	<i>Microcrambus</i>		<i>biguttellus</i> (Forbes)	800874							8			7			15
			<i>elegans</i> (Clemens)	800875							7	3	1	5	1		17
			<i>kimballi</i> Klots	800879							1			2			3
	<i>Neodactria</i>		<i>luteolellus</i> (Clemens)	800887								2					2
	<i>Parapediasia</i>		<i>caliginosellus</i> (Clemens)	800889							4	1		2			7
			<i>decorellus</i> (Zincken)	800906							1						1
			<i>teterrellus</i> (Zincken)	800907									1	1			2
	<i>Raphiptera</i>		<i>argillaceellus</i> (Packard)	800913						2	2	1	1	8		1	15
	<i>Agriphila</i>		<i>vulgivagellus</i> (Clemens)	800922												2	2
	<i>Crambus</i>		<i>praefectellus</i> (Zincken)	800943						1	1						2
			<i>agitatellus</i> Clemens	800950								15	25	7			47
			<i>multinellus</i> Fernald	800952							7	2					9

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>satrapellus</i> (Zincken)	800960							3	1		2	3		9
			<i>laqueatellus</i> Clemens	800966						4							4
Scopariinae																	
	<i>Scoparia</i>		<i>dominicki</i> Munroe	800986							3				1		4
	<i>Eudonia</i>		<i>strigalis</i> (Dyar)	801004						5	4	1	5		4		19
			<i>heterosalis</i> (McDunnough)	801005						1	2	1			7	1	12
Glaphyriinae																	
	<i>Glaphyria</i>		<i>glaphyralis</i> (Guenée)	801023									1				1
			<i>sequistrialis</i> Hübner	801024								1					1
	<i>Aethiophysa</i>		<i>invisalis</i> (Guenée)	801032									1				1
	<i>Xanthophysa</i>		<i>psychialis</i> (Hulst)	801035							1						1
	<i>Stegia</i>		<i>eripalis</i> (Grote)	801044								1					1
	<i>Lipocosma</i>		<i>adelalis</i> (Kearfott) ^A	801057									6				6
	<i>Lipocosmodes</i>		<i>fuliginosalis</i> (Fernald)	801062									6				6
	<i>Dicymolomia</i>		<i>julianalis</i> (Walker)	801063								1			2		3
Spilomelinae																	
	<i>Framinghamia</i>		<i>helvalis</i> (Walker)	801173						1							1
	<i>Lygropia</i>		<i>tripunctata</i> (Fabricius)	801174											1		1
			<i>rivulalis</i> Hampson	801177										1			1
	<i>Pleuroptya</i>		<i>silicalis</i> (Guenée)	801188								1	1	14	7	1	24
	<i>Herpetogramma</i>		<i>aeglealis</i> (Walker)	801191							2	1	1		6		10
			<i>bipunctalis</i> (Fabricius)	801193													1
			<i>centrostrigalis</i> (Stephens) ^{A, E}	801194							1						1
			<i>fluctuosalis</i> (Lederer)	801195							5	2	2	14	2		23
			<i>phaeopteralis</i> (Guenée)	801196											1	1	2
			<i>pertextalis</i> (Lederer)	801197							4	4	11	6	10		35
			<i>thestealis</i> (Walker)	801199								1	2				3

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
		<i>Udea</i>	<i>rubigalis</i> (Guenée) ^B	801230	2		1		3	5	1	4			15	13	44
		<i>Anageshna</i>	<i>primordialis</i> (Dyar)	801254					6	7	3	3	19	9	6	5	55
		<i>Apogeshna</i>	<i>stenialis</i> (Guenée)	801255						13	1	1	8	1	2		25
		<i>Blepharomastix</i>	<i>ranalis</i> (Guenée)	801256						7							7
		<i>Desmia</i>	<i>funeralis</i> (Hübner) ^B	801262					9	12	4	4	21	15	7		68
			<i>maculalis</i> Westwood	801263					6	10	3	3	5	6	4		34
			<i>subdivisalis</i> Grote ^{A, D}	801264							1						1
		<i>Diasemiodes</i>	<i>janassialis</i> (Walker)	801272					1	7	8	4	4	4	14		38
			<i>nigralis</i> (Fernald)	801273								1					1
		<i>Diathrausta</i>	<i>reconditalis</i> (Walker)	801276						1					2		3
		<i>Hymenia</i>	<i>perspectalis</i> (Hübner)	801279											7	1	8
		<i>Spoladea</i>	<i>recurvalis</i> (Fabricius)	801280											2		2
		<i>Colomychus</i>	<i>talis</i> (Grote)	801292					1	2	3	1	1	5	7		19
		<i>Diaphania</i>	<i>costata</i> (Fabricius)	801302											1		1
		<i>Palpita</i>	<i>freemanalis</i> Munroe ^A	801324					1						1		2
			<i>magniferalis</i> (Walker)	801325						11	1	21	15	26	15		89
		<i>Eulepte</i>	<i>anticostalis</i> (Grote)	801344							1						1
		<i>Diacme</i>	<i>adipaloides</i> (Grote & Robinson)	801350					1	1	10	3	1	1	15	6	38
		<i>Epipagis</i>	<i>fenestralis</i> (Hübner)	801354										2	1		3
		<i>Nomophila</i>	<i>nearctica</i> Munroe	801365						1					12	1	14
		<i>Psara</i>	<i>obscuralis</i> (Lederer)	801373									1				1
		<i>Cnaphalocrocis</i>	<i>cochrusalis</i> (Walker)	801381							2						2
		Pyraustinae															
		<i>Saucrobotrys</i>	<i>futilalis</i> (Lederer)	801407					1								1
		<i>Nascia</i>	<i>acutellus</i> (Walker)	801409					2	1	3	1	1	3			10
		<i>Crocidophora</i>	<i>pustuliferalis</i> Lederer	801417					8				10		10		28
			<i>serrattissimalis</i> Zeller	801418					1		2						3

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total		
Ostrinia			<i>tuberculalis</i> Lederer	801419						11	16	8	24	15	1		75		
			<i>penitalis</i> (Grote)	801420							4								4
			<i>obumbratalis</i> (Lederer)	801421							1								1
			<i>nubilalis</i> (Hübner) ^C	801423											1				1
			<i>fumalis</i> (Guenée)	801424								1		1	1	6			6
			<i>caeculalis</i> Zeller	801425								1		1	1	2			5
			<i>plectilis</i> (Grote & Robinson) ^{A, E}	801428												2			2
			<i>marculenta</i> (Grote & Robinson)	801439									1						1
			<i>neomarculenta</i> (Capps) ^A	801440											1				1
			<i>manalis</i> (Lederer)	801444									1						1
Achyra	Pyrausta		<i>rantalalis</i> (Guenée)	801452										3	2		5		
			<i>bicoloralis</i> (Guenée)	801519							1	1	1	2	1	4		9	
			<i>phoenicealis</i> (Hübner)	801529											1				1
			<i>insequalis</i> (Guenée)	801540									1			2			3
			<i>acrionalis</i> (Walker)	801552													1		1
Mimallonidae	Mimalloninae	<i>Lacosoma</i>	<i>chiridota</i> Grote	830001										1			9		
Drepanidae	Thyatirinae	<i>Pseudothyatira</i>	<i>cymatophoroides</i> (Guenée)	850005						1					2		3		
			<i>arcuata</i> Walker	850019												1		1	
			<i>rosea</i> (Walker)	850023									1		1	3		5	

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Lasiocampidae	Lasiocampinae																
		<i>Phylloidesma</i>	<i>americana</i> (Harris)	870003					1								1
		<i>Malacosoma</i>	<i>disstria</i> Hübner ^C	870014						11							11
			<i>americana</i> (Fabricius)	870017						5							5
Macromphalinae																	
		<i>Toype</i>	<i>velleda</i> (Stoll)	870021											1		1
		<i>Artace</i>	<i>notialis</i> Franclemont	870025											1		1
			<i>cribrarius</i> (Ljungh)	870036	1										3		4
Apatelodidae	Apatelodinae																
		<i>Apatelodes</i>	<i>torrefacta</i> (Smith)	890001						3	1	4	4	3			11
Saturniidae	Ceratocampinae																
		<i>Eacles</i>	<i>imperialis</i> (Drury) ^B	890012							4	4	4		1		9
		<i>Anisota</i>	<i>stigma</i> (Fabricius)	890014							1	3	4				8
			<i>virginiensis</i> (Drury) ^B	890017						2	1	2	2				5
		<i>Dryocampa</i>	<i>rubicunda</i> (Fabricius) ^B	890022						5	6	6	8	6	3		34
Hemileucinae																	
		<i>Automeris</i>	<i>io</i> (Fabricius)	890055						7	1	1		5			13
Saturniinae																	
		<i>Antheraea</i>	<i>polyphemus</i> (Cramer)	890070						4	2	1	1	1	4		12
		<i>Actias</i>	<i>luna</i> (L.) ^B	890072						9	1	1			7		17
		<i>Callosamia</i>	<i>angulifera</i> (Walker)	890080						1	2		1		1		5
		<i>Hyalophora</i>	<i>cecropia</i> (L.)	890082					5								5

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Sphingidae	Sphinginae	<i>Manduca</i>	<i>jasminearum</i> (Guérin-Méneville)	890096							1						1
		<i>Dolba</i>	<i>hyloeus</i> (Drury)	890100							2	1	1	1			5
		<i>Ceratonia</i>	<i>amyntor</i> (Geyer)	890102					2								2
			<i>undulosa</i> (Walker)	890103	1				4					2			7
		<i>Isoparcé</i>	<i>cupressi</i> (Boisduval)	890108										1	8		9
		<i>Paratreia</i>	<i>plebeja</i> (Fabricius)	890110											1		1
		<i>Sphinx</i>	<i>kalmiae</i> Smith	890118							1				1		2
		<i>Lapara</i>	<i>coniferarum</i> (Smith)	890135							1	7	2	1	9		20
		Smerinthinae															
		<i>Paonias</i>	<i>excaecatus</i> (Smith)	890144							1	1	1	5	7		15
			<i>myops</i> (Smith)	890145							1						1
		Macroglossinae															
		<i>Deidamia</i>	<i>inscripta</i> (Harris)	890193					1	3							4
		<i>Darapsa</i>	<i>myron</i> (Cramer)	890207							7	1	2	1			11
		Uraniidae															
		Epipleminae															
		<i>Calledapteryx</i>	<i>dryopterata</i> Grote	910006											1		1
		Geometridae															
		Larentiinae															
		<i>Eulithis</i>	<i>diversilineata</i> (Hübner)	910031							23						23
			<i>gracilineata</i> (Guenée)	910032							11	1	11	2	6	4	35
		<i>Gandaritis</i>	<i>atricolorata</i> (Grote & Robinson)	910050							8						8

Family Subfamily Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
<i>Hydriomena</i>	<i>pluviata</i> (Guenée)	910077					8	1							9
<i>Xanthorhoe</i>	<i>lacustrata</i> (Guenée)	910234									1		1		2
<i>Orthonama</i>	<i>obstepata</i> (Fabricius)	910258	3		2		6	5	6		1		5		28
<i>Costaconvexa</i>	<i>centrostrigaria</i> (Wollaston) ^B	910260					2	4	4	10	3	1	5	3	32
<i>Disclisiprocta</i>	<i>stellata</i> (Guenée)	910261										1	4	1	6
<i>Eubaphe</i>	<i>mendica</i> (Walker)	910286						1	4	1	3	2	5	2	18
	<i>meridiana</i> (Slosson)	910287					1								1
<i>Horisme</i>	<i>intestinata</i> (Guenée)	910292					1		2	2			2	1	8
<i>Eupithecia</i>	<i>matheri</i> Rindge	910307					1								1
	<i>miserulata</i> Grote	910324				1	1	6	20	10	3		9	3	53
	<i>jejunata</i> McDunnough ^A	910334					4								4
	<i>swettii</i> Grossbeck	910371					1								1
<i>Cladara</i>	<i>limitaria</i> (Walker)	910478				3	13								16
<i>Heterophleps</i>	<i>triguttaria</i> Herrich-Schäffer	910488						3	7	2	6	9	11		38
<i>Dyspteris</i>	<i>abortivaria</i> (Herrich-Schäffer)	910489						10	8	3	1	2			24
Sterrhinae															
<i>Lobocleta</i>	<i>ossularia</i> (Geyer)	910500							2			2			4
<i>Idaea</i>	<i>scintillularia</i> (Hulst)	910511							7	5	5	3	3		20
	<i>productata</i> (Packard) ^A	910521					1								1
	<i>demissaria</i> (Hübner)	910523						2	3				1		6
	<i>eremiata</i> (Hulst)	910524						5	1						6
	<i>violacearia</i> (Walker)	910529						1							1
	<i>tacturata</i> (Walker)	910531							1				5		6
	<i>obfusaria</i> (Walker)	910532							5						5
	<i>retractaria</i> (Walker) ^A	910533									1				1
<i>Pleuroprucha</i>	<i>insulsaria</i> (Guenée)	910540						3	1	2	2	3	12	3	26
<i>Cyclophora</i>	<i>packardi</i> (Prout)	910544						1	7	1	1	4	4	5	23
<i>Scopula</i>	<i>limboundata</i> (Haworth)	910567													

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total		
<i>Leptostales</i>	<i>Lophosis</i>		<i>inductata</i> (Guenée)	910578					2								2		
			<i>pannaria</i> (Guenée)	910583													1	1	
			<i>labeculata</i> (Hulst)	910591							8			9	1	17	1	36	
Geometrinae	<i>Nemoria</i>		<i>elfa</i> Ferguson	910609					4	13	5	2	3	4	11		42		
			<i>lixaria</i> (Guenée)	910613	2	1			1	4	4	4	3	3	1	2	7	28	
			<i>saturiba</i> Ferguson	910614					10	10	1	3	3	2	4	14		44	
			<i>bistriaria</i> Hübner	910627					1			1						2	
			<i>iridaria</i> (Guenée)	910634						8	8	1	1	1	1	1		11	
			<i>frondaria</i> Guenée	910640									2	1	1	3	2	6	
			<i>chloroleucaria</i> (Guenée)	910654						3	3			2				5	
			<i>tepperaria</i> (Hulst)	910658									2	2	2	3	2		9
			<i>pistasciaria</i> (Guenée)	910667						4									4
		Ennominae	<i>Alsophila</i>		<i>pometaria</i> (Harris)	910672			5	3									8
					<i>resistaria</i> (Herrich-Schäffer)	910676							13	9					
	<i>xanthometata</i> (Walker)			910691										3				3	
	<i>pustularia</i> (Guenée)			910735								13	1					14	
	<i>aemulataria</i> Walker			910750						15	7	4	5	15	6	37	3	85	
	<i>aequiferaria</i> Walker			910755			1		13	7	4	4	12	5	22	34	8	106	
	<i>bicolorata</i> (Fabricius)			910758						4	4	13	6	12	3	5		43	
	<i>transitaria</i> Walker			910761						6	6	4	3	2	1	6	1	23	
	<i>distribuaria</i> (Hübner)			910762								4			1	1		6	
	<i>gnophosaria</i> (Guenée)			910822						1	1	2	4	2	3	10		22	
<i>Digrammia</i>	<i>Hypomecis</i>				<i>umbrosaria</i> (Hübner)	910853					4	4	3		3	6			16
			<i>gnopharia</i> (Guenée)	910854							2	2		2	1			5	
<i>Glenoides</i>			<i>texanaria</i> (Hulst)	910858	3				1	13	13	1	1	10	12	33	73		

Family Subfamily Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
<i>Glenn</i>	<i>cribrataria</i> (Guenée)	910864					10			1		2			13
<i>Exelis</i>	<i>pyrolaria</i> Guenée	910893							4	4					8
<i>Tornos</i>	<i>scolopacinaria</i> (Guenée)	910898					1								1
<i>Iridopsis</i>	<i>pergracilis</i> (Hulst)	910998				17	2		3	4	4	10	10	1	47
	<i>vellivolata</i> (Hulst)	911000				1	9		6	1	4	1			22
	<i>humaria</i> (Guenée)	911002							1					1	2
	<i>defectaria</i> (Guenée)	911004		2	5	1	4		4	8	7	25	11		67
<i>Anavitrinella</i>	<i>pampinaria</i> (Guenée)	911009				17	2		23	5	6	19			72
<i>Cleora</i>	<i>sublunaria</i> (Guenée)	911013				11									11
<i>Ectropis</i>	<i>crepuscularia</i> (Denis & Shiffermüller)	911016				1	9	3	3	9	9	9	18		52
	<i>porcelaria</i> (Guenée)	911017					5		4		3			8	20
<i>Protoboarmia</i>	<i>hortaria</i> (Fabricius) ^B	911018					3	2		5	9	1			20
<i>Epimecis</i>	<i>canadaria</i> (Guenée) ^B	911059				3	28	6	15	13	23	27		2	117
<i>Melanolophia</i>	<i>ypsilon</i> (Forbes)	911073					2								2
<i>Lycia</i>	<i>unipunctata</i> (Haworth) ^B	911075						30	9	11	55	23	57		185
<i>Hypagyrtis</i>	<i>esther</i> (Barnes)	911076						3	12	2	8	4	14		43
	<i>titea</i> (Cramer)	911079													1
<i>Phigalia</i>	<i>denticulata</i> Hulst	911080		4	32	2	5								43
	<i>strigataria</i> (Minot)	911081				1	11								12
	<i>vernata</i> (Peck) ^A	911083				1	3								4
<i>Palaearcta</i>	<i>merriccata</i> Dyar	911084		13	2	1	4								20
	<i>tilitaria</i> (Harris)	911086		1											1
<i>Erannis</i>	<i>vestaliata</i> (Guenée)	911089					13				2	3			18
<i>Lomographa</i>	<i>quadrifasciaria</i> (Packard)	911101							1						1
<i>Cabera</i>	<i>cruentaria</i> (Hübner)	911126							1	8	2				11
<i>Erastria</i>	<i>intractata</i> (Walker)	911132		2			2	8	1	2	1	15	9		40
<i>Ilexia</i>	<i>solitaria</i> (Walker)	911137					3								3
<i>Episemasia</i>	<i>unitaria</i> (Herrich-Schäffer)	911145							9						9
<i>Lytrosis</i>															9

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
<i>Euchlaena</i>			<i>sinuosa</i> Rindge	911146						1							1
			<i>muzaria</i> (Walker) ^A	911150					1			1	1			1	3
			<i>deplanaria</i> (Walker)	911157								1	1				1
<i>Xanthotype</i>			<i>amoenaria</i> (Guenée)	911158					7	10	2	7	9	19	3	3	57
			<i>marginaria</i> (Minot)	911159					8								8
			<i>sospeta</i> (Drury)	911168											2		2
			<i>attenuaria</i> Swett ^A	911169						1	1	3	2	5	4		16
			<i>approximaria</i> Hübner	911170	7					7			1			14	21
			<i>ancetaria</i> (Hübner)	911179													
<i>Pero</i>			<i>quernaria</i> (Smith)	911191				1	1								2
<i>Phaeoura</i>			<i>subsignaria</i> (Hübner)	911229						3							3
<i>Ennomos</i>			<i>divisata</i> Hübner	911235					2								2
<i>Petrophora</i>			<i>zalissaria</i> Walker	911237				1	2								3
<i>Tacparia</i>			<i>duaria</i> (Guenée)	911254				1	1								2
<i>Metarranthis</i>			<i>homuraria</i> (Grote & Robinson)	911261					9	8	1	7	9				34
<i>Cepphis</i>			<i>obfirmaria</i> (Hübner)	911265					3								3
			<i>armataria</i> (Herrich-Schäffer) ^A	911268								3	1				4
<i>Probole</i>			<i>alienaria</i> Herrich-Schäffer	911269								1					1
<i>Plagodis</i>			<i>amicaria</i> (Herrich-Schäffer)	911270					1		3	1	1	1			6
			<i>fervidaria</i> (Herrich-Schäffer)	911276				1	1	3	1	1	4				7
<i>Besma</i>			<i>quercivoraria</i> (Guenée)	911324				1	3	2				3			9
<i>Lambdina</i>			<i>fiscellaria</i> (Guenée)	911327										1			1
			<i>pellucidaria</i> (Grote & Robinson)	911331					20								20
			<i>fervidaria athasaria</i> (Walker)	911333				3				2					5

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total			
<i>Eusarca</i>	<i>Tetracis</i>	<i>Prochoerodes</i>	<i>confusaria</i> Hübner	911384						1	1	1		5	3	3	10			
			<i>crocallata</i> Guenée	911400						1		3							4	
			<i>clemataria</i> (Smith) ^B	911414		9	10					11	5	15						50
			<i>lineola</i> (Goeze)	911432							19	6	25	4	18	9	9		81	
Notodontidae	Pygaerinae	<i>Clostera</i>	<i>inclusa</i> (Hübner)	930004					7			3	1				11			
Notodontinae	<i>Hyperaeschra</i>	<i>georgica</i> (Herrich-Schäffer)	930010					1									1			
<i>Nerice</i>	<i>bidentata</i> Walker	930018						3				1	2				6			
<i>Gluphisia</i>	<i>septentrionis</i> Walker	930019							2		1	1	2				6			
<i>Furcula</i>	<i>cinerea</i> (Walker)	930025									2		1				3			
Phalerinae	<i>Datana</i>	<i>ministra</i> (Drury)	930033								3	1					4			
		<i>drexelii</i> Edwards	930035							1	4	1	4	1				11		
		<i>major</i> Grote & Robinson	930036								3	5	5					13		
		<i>contracta</i> Walker	930037										1					1		
		<i>integerrima</i> Grote & Robinson	930038								2	3	7					12		
		<i>robusta</i> Strecker	930040												1			1		
<i>Nadata</i>		<i>gibbosa</i> (Smith)	930046						1	1	6	7	12	20				47		
<i>Peridea</i>		<i>angulosa</i> (Smith)	930049								1	1	21	1	21	1		25		
Heterocampinae	<i>Misogada</i>	<i>unicolor</i> (Packard)	930066								2	1	2	2				7		
<i>Macrurocampa</i>		<i>marthesia</i> (Cramer)	930067								1							1		
<i>Heterocampa</i>		<i>varia</i> Walker	930074									15	11	16	10	1		53		
		<i>obliqua</i> Packard	930075																	

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>subrotata</i> Harvey	930077						1		2	3	4	7		17
			<i>umbrata</i> Walker	930082						2	5		1		7		15
			<i>guttivitta</i> (Walker)	930086						17	1	4	3	7	8	1	41
			<i>biundata</i> Walker	930087						4	1	4	2	7	2		20
		<i>Lochmaeus</i>	<i>manteo</i> Doubleday	930090										2	10		12
			<i>bilineata</i> (Packard)	930091						4	6	9	13	23	28		83
		<i>Schizura</i>	<i>ipomaeae</i> Doubleday	930098							4	4	2	4	9	1	20
			<i>unicornis</i> (Smith)	930100						3	2	1	1	1	4		11
			<i>leptinoides</i> (Grote)	930104									1	3			4
		<i>Oligocentria</i>	<i>semirufescens</i> (Walker)	930105							1				4		5
			<i>lignicolor</i> (Walker)	930110							1	1			3		5
		<i>Hyparpax</i>	<i>aurora</i> (Smith)	930115										2			2
		Nystaleinae															
		<i>Symmerista</i>	<i>albifrons</i> (Smith)	930127					4								4
Erebidae																	
	Lymantriinae																
		<i>Dasychira</i>	<i>tephra</i> Hübner	930144							10	3	2	14	8		37
			<i>basiflava</i> (Packard)	930148							13	7	3	9	5		37
			<i>atrivenosa</i> (Palm)	930151							1			1	4		6
			<i>dominickaria</i> Ferguson	930155											3		3
			<i>manto</i> (Strecker)	930159											1		1
		<i>Orgyia</i>	<i>definita</i> Packard	930166							2	2				5	7
			<i>leucostigma</i> (Smith)	930168						1	1	1	6	7	16	16	47
		Arctiinae															
		<i>Cisthene</i>	<i>kentuckiensis</i> (Dyar)	930178											2		2
			<i>plumbea</i> Stretch	930184							8	1	5	1	4	4	23
			<i>packardii</i> (Grote)	930189							7		5	7	7		19

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total	
Hypoprepia			<i>miniata</i> (Kirby)	930204							2	8			15		25	
			<i>fucosa</i> Hübner	930205								10	10		13	22		
Clemensia			<i>albata</i> Packard ^B	930215	3				8	9		8	10	6	24	9		77
			<i>lithosioides</i> Dyar	930218								12	1	3		10	7	
Crambida			<i>pallida</i> Packard	930219							1	7	1	3	8	10		30
			<i>uniformis</i> Dyar	930220								2						
Grammia			<i>parthenice</i> (Kirby)	930246											1	3		4
			<i>vittata</i> (Fabricius)	930279						3	3	2	5	1	3	4	1	1
Apantesis			<i>nais</i> (Drury)	930280					2	2	3	1	1	1	4	4		16
			<i>laeta</i> (Guérin-Méneville)	930294						1	1	2			1	8		
Virbia			<i>opella</i> (Grote)	930297					3	3	8		5	1	24	6		47
			<i>aurantiaca</i> (Hübner)	930299								1						
Spilosoma			<i>immaculata</i> (Reakirt) ^A	930307								5			2			7
			<i>congrua</i> Walker	930309						1	11	3	4	2	6	2	2	
Hyphantria			<i>virginica</i> (Fabricius)	930316					3	3	4		2	3	2			14
			<i>cunea</i> (Drury) ^B	930319						1	20	2	1		8	5		
Hypercompe			<i>scribonia</i> (Stoll) ^B	930323					1	1		1						3
			<i>isabella</i> (Smith)	930335							1							
Pyrrharctia			<i>clymene</i> (Brown)	930341											2			2
			<i>tessellaris</i> (Smith) ^B	930360						3	6	7	6	7	6	19	11	
Leucanopsis			<i>longa</i> (Grote)	930376											4	4		9
			<i>egle</i> (Drury)	930412								1						
Cisseps			<i>fulvicollis</i> (Hübner)	930440	1							3	1	1	2			8
Herminiinae			<i>americana</i> (Guenée)	930469					9		5	13	6	17	36	5		91
			<i>majoralis</i> (Smith)	930470								1						
			<i>aemula</i> Hübner ^B	930471		1					4	2	7	4	5	1		24
			<i>rotundalis</i> (Walker)	930474								2	8	8	8	8	21	5

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>julia</i> (Barnes & McDunnough)	930476							6			1	3	1	11
			<i>diminuendis</i> (Barnes & McDunnough)	930477											3		3
			<i>lubricalis</i> (Geyer)	930482							1	6	1	1	1		10
		<i>Phalaenophana</i>	<i>pyramusalis</i> (Walker)	930487					1						1		2
		<i>Zanclognatha</i>	<i>lituralis</i> (Hübner)	930489					5			2	2		1	2	12
			<i>thalis</i> (Walker)	930490							15	1	12	1	7		36
			<i>atrilineella</i> (Grote)	930493							2		1	1	6	2	12
			<i>obscuripennis</i> (Grote)	930494							8	4	7	1	9		29
			<i>protumusalis</i> (Walker) ^B	930496							5		1		5	3	9
			<i>cruralis</i> (Guenée)	930498							5				2		7
		<i>Chytolita</i>	<i>morbidalis</i> (Guenée)	930502					1		3	2	16	3	7	2	34
		<i>Macrochilo</i>	<i>absortialis</i> (Walker) ^A	930508							3						3
			<i>hypocritalis</i> Ferguson	930509							5	4	3		7		19
			<i>litophora</i> (Grote)	930510							17		22	1	5		45
			<i>orciferalis</i> (Walker)	930511									1				1
		<i>Phalaenostola</i>	<i>eumelusalis</i> (Walker) ^A	930513							7	3	18	2			30
			<i>larentioides</i> Grote	930514							3		3	1	5		12
		<i>Tetanolita</i>	<i>mynesalis</i> (Walker)	930516						5		7	1	1	4	2	20
			<i>floridana</i> Smith	930518						5	1	6	2	3	4	1	22
		<i>Bleptina</i>	<i>caradrinalis</i> Guenée	930520						1			1				2
			<i>inferior</i> Grote	930522									6	1	4	1	12
		<i>Renia</i>	<i>factiosalis</i> (Walker)	930530											1		1
			<i>nemorialis</i> Barnes & McDunnough	930531									1		1		2
			<i>discoloralis</i> Guenée	930532						1							1
			<i>flavipunctalis</i> (Geyer)	930536											1	1	2

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>fraternalis</i> Smith	930537						2							2
			<i>adspergillus</i> (Bosc)	930538						3	2		11	1	1	2	20
			<i>sobrialis</i> (Walker)	930539								3			2		5
	<i>Lascoria</i>		<i>ambigualis</i> (Walker)	930547						4	1	3	12		5	1	26
	<i>Palthis</i>		<i>angulalis</i> (Hübner) ^B	930551						6		2	1	1	4		14
			<i>asopialis</i> (Guenée)	930552						1	3	5	9	5	7	4	34
	<i>Redectis</i>		<i>pygmaea</i> (Grote)	930554							2	2	8		4		16
			<i>vitrea</i> (Grote)	930555							3			1	4	1	9
	Pangraptinae																
	<i>Pangrapta</i>		<i>decoralis</i> Hübner	930559						2	7	5	9	8	4		35
	<i>Ledaea</i>		<i>perditalis</i> (Walker)	930560						7	1	2	1	12	3		26
	Hypeninae																
	<i>Hypena</i>		<i>manalis</i> Walker	930561						3	6	1		11	4	2	27
			<i>baltimoralis</i> Guenée	930562						3			1	1	16	2	23
			<i>bijugalis</i> Walker	930564						4					1		5
			<i>palparia</i> Walker	930565						2	1				4	2	9
			<i>abalienalis</i> Walker	930566							1				3		4
			<i>madefactalis</i> Guenée	930568										1			1
			<i>scabra</i> (Fabricius)	930588	3	6			6		2	2		2	12	2	35
			<i>eductalis</i> Walker	930589								1					1
	<i>Colobochoyla</i>		<i>interpuncta</i> (Grote)	930590						4		3	1				8
	<i>Melanomma</i>		<i>auricinctaria</i> Grote	930591							2						2
	Rivulinae																
	<i>Rivula</i>		<i>propinqualis</i> Guenée	930592						2	2	6	10	3	3		24
			<i>stephensi</i> Sullivan ^A	930593									1		2		3
	Calpinae																
	<i>Plusiodonta</i>		<i>compressipalpis</i> Guenée	930622						2		3	1	3	9	1	19

Family Subfamily Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Hypocaulinae <i>Hypsoropha</i>	<i>monilis</i> (Fabricius)	930628					9								9
	<i>hormos</i> Hübner ^B	930629					6	2	4	4		1			13
Scolecocampinae <i>Arugisa</i>	<i>lutea</i> (Smith)	930634						2			2	3	3	1	8
	<i>laticollis</i> (Walker)	930635					4	8	8	1		5	5		18
	<i>liburna</i> (Geyer)	930637					5	4	4	3	18	5	5		35
	<i>brimleyana</i> (Dyar)	930651										2	2		2
	<i>formosalis</i> Walker	930655					2	7	1	1	2	8	8		21
	<i>brauneata</i> (Swett)	930657					5		3	8		4	4		20
	<i>penumbrata</i> Hulst	930658								1					1
Hypenodinae <i>Hypenodes</i>	<i>caducus</i> (Dyar) ^A	930661						2	1			3	3		6
	<i>franclemontii</i> Ferguson ^A	930665										2	2		2
	<i>macula</i> (Druce)	930668					1		4	17	2	16	6	6	46
	<i>puncticosta</i> (Smith) ^A	930670						1	1	3	3	2	2	1	8
Boletobiinae <i>Metalectra</i>	<i>discalis</i> (Grote)	930679						3	2				3		8
	<i>quadrignata</i> (Walker)	930680							1	5	2	2			8
	<i>tanillus</i> (Grote)	930682							1			1	1		2
	<i>richardsi</i> Brower	930685							6	2	2	4	4		12
	<i>albocostaliata</i> (Packard)	930692.5										1			1
	<i>minima</i> (Guenée)	930693					2		3	1		5	4		15
	<i>scopulepes</i> (Haworth)	930700					10			4					14
	<i>habitilis</i> (Walker)	930704							1						1
	<i>rhodarialis</i> (Walker)	930717					5	6	6	1	4	1	1		23
	<i>latipalpis</i> (Walker)	930724										1	1		2

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total		
<i>Hyperstrotia</i>			<i>nana</i> (Hübner)	930727					1	10	4	4	13	4	10		42		
			<i>aethera</i> (Grote)	930728							1	1		1			2		
			<i>flaviguttata</i> (Grote)	930731					1	3	7	4	3	4	3			18	
			<i>secta</i> (Grote)	930732						4		1		1		1		6	
			<i>tenuis</i> (Grote)	930734						2	2	2	2	2	2	6		14	
<i>Erebinae</i>	<i>Catocala</i>		<i>piatrix</i> Grote	930762									2				2		
			<i>epione</i> (Drury)	930764							1							1	
			<i>ilia</i> (Cramer)	930792							2		1						3
			<i>marmorata</i> Edwards	930796	1														1
			<i>gracilis</i> Edwards	930833							2								2
			<i>andromedae</i> (Guenée)	930835							2								2
			<i>ultronia</i> (Hübner)	930841								3							3
			<i>miranda</i> Edwards	930842							1								1
			<i>mira</i> Grote	930844							7								12
			<i>grynea</i> (Cramer)	930845								9							9
			<i>crataegi</i> Saunders	930846							1								1
			<i>lincolniana</i> Brower	930850							6	1							7
			<i>clintonii</i> Grote	930853							1								1
			<i>amica</i> (Hübner)	930859								8	6	1					15
		<i>Phoberia</i>		<i>atomaris</i> Hübner	930862				2	7	2								11
	<i>spadix</i> (Cramer)		930864						1									1	
<i>Ptychodis</i>		<i>herbarum</i> (Guenée)	930932						11					5	16	1	42		
		<i>bistrigata</i> Hübner	930934						1									1	
<i>Caenurgia</i>		<i>chloropha</i> (Hübner)	930938	1					6	1	10	5	4	4	4	5	36		
<i>Celiptera</i>		<i>frustulum</i> Guenée	930940						2				1	8	1		12		
		<i>texana</i> (Morrison)	930944						3	3	3	1	5	1			16		
<i>Mocis</i>		<i>disseverans</i> (Walker)	930945													1	1		

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total						
<i>Argyrostrota</i>			<i>flavistriaria</i> (Hübner)	930951					1	1		1	1	2	1	1	8						
			<i>sylyvarum</i> (Guenée)	930952									1	1	1			2	5				
			<i>erasa</i> (Guenée)	930953									1						1	1			
			<i>anilis</i> (Drury)	930956							2			2					4	4			
			<i>smithii</i> (Guenée)	930959							1									1	1		
			<i>bistriaris</i> Hübner	930961							1	3	1	4	4	7	10			26	26		
			<i>elonympha</i> (Hübner) ^B	930962							2	6	5	7	7	11	8			39	39		
			<i>albopunctella</i> Walker	930963							7		2	2	2					11	11		
			<i>distincta</i> (Grote)	930964							5			6	4	5	2			22	22		
			<i>aluticolor</i> Pogue & Ferguson	930965							10		1	5	6	6	12			34	34		
<i>Lesmone</i>			<i>arcuata</i> Pogue & Ferguson	930966					6	6	2	9	3	10				30	30				
			<i>detrehens</i> (Walker)	930970						12	10	4	2	2	2	4			34	34			
			<i>amella</i> (Guenée)	930992							2									2	2		
			<i>lunata</i> (Drury) ^B	931023	2			1			1		1	2	2	2	3	2		14	14		
			<i>galbanata</i> (Morrison)	931026							3		2	4	3	5	24			41	41		
			<i>aeruginosa</i> (Guenée)	931029							5			2	2	1				8	8		
			<i>minerea</i> (Guenée)	931032							6				2					8	8		
			<i>obliqua</i> (Guenée)	931034							8				3	8				19	19		
			<i>squamularis</i> (Drury)	931035							6									6	6		
			<i>Amolita</i>			<i>submediana</i> Strand	931037					2	2								4	4	
<i>curema</i> (Smith)	931044										3								3	3			
<i>lunifera</i> (Hübner)	931048														1	1	1			2	2		
<i>horrida</i> Hübner	931053																			1	1		
<i>fessa</i> Grote	931060																			1	1		
<i>obliqua</i> Smith	931061											3				2				5	5		
<i>Eulepidotinae</i>	<i>Panopoda</i>					<i>rufimargo</i> (Hübner)	931089							5	9	2	3	1			20	20	
						<i>carneicosta</i> Guenée	931090								1		2	2	1	2		6	6

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
		<i>Phyrosopus</i>	<i>callitrichoides</i> Grote	931101						3	3	1			6		13
Euteliidae	Euteliinae																
		<i>Marathyssa</i>	<i>inficita</i> (Walker)	931103							2	4	3	1			10
			<i>basalis</i> Walker	931104					2	6							8
		<i>Paectes</i>	<i>oculatrix</i> (Guenée)	931106						2		2	1	1	1		7
			<i>abrostoloides</i> (Guenée) ^B	931111						2		4	6	12	7		29
		<i>Eutelia</i>	<i>pulcherrimus</i> (Grote)	931118						1							1
Nolidae	Diphtherinae																
		<i>Diphthera</i>	<i>festiva</i> (Fabricius)	931120.5											2		2
Nolinae	<i>Meganola</i>																
			<i>phylla</i> (Dyar)	931122						5		2	4	2			13
			<i>spodia</i> Franclemont	931123					5		7						12
		<i>Nola</i>	<i>pustulata</i> (Walker)	931129						1	1						2
			<i>cereella</i> (Bosc)	931131						1	3	1	1	1			6
			<i>ovilla</i> Grote	931135					1					1			2
Chloephorinae	<i>Nycteola</i>																
			<i>metaspillella</i> (Walker) ^A	931145							1						1
Risobinae	<i>Batleya</i>																
			<i>ophthalmica</i> (Guenée) ^B	931149				1	1	12	7	18	4	13			55
			<i>dormitans</i> (Guenée)	931150						4	2	9	3	1			19
			<i>levitians</i> (Smith)	931152						1							1
			<i>australis</i> (Grote)	931154								3	1	4			8

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Noctuidae																	
	Plusiinae																
		<i>Ctenoplusia</i>	<i>oxygramma</i> (Geyer)	931169										1			1
		<i>Chrysoideixis</i>	<i>includens</i> (Walker)	931170								2			1		3
		<i>Rachiplusia</i>	<i>ou</i> (Guenée)	931176						1							1
		<i>Allagrapha</i>	<i>aerea</i> (Hübner)	931177							1						1
	Eustrotiinae																
		<i>Tripudia</i>	<i>rectangula</i> Pogue	931261						1							1
			<i>balteata</i> Smith ^{A, D}	931264						2	2			4			8
			<i>versutus</i> (Edwards) ^{A, E}	931269									1	1			2
		<i>Marimatha</i>	<i>nigrofimbria</i> (Guenée) ^B	931284						2	8	8	15	10	12		55
		<i>Protodeltote</i>	<i>muscosula</i> (Guenée) ^B	931290						1	12	7	21	6	13		60
		<i>Lithacodia</i>	<i>musta</i> (Grote & Robinson)	931292							1		2	2			5
		<i>Argillophora</i>	<i>furcilla</i> Grote ^A	931299							8	6	9	9	2		34
		<i>Ozarba</i>	<i>aeria</i> (Grote)	931302						1		3	6	8	1	1	20
	Acontiinae																
		<i>Ponometa</i>	<i>semiflava</i> (Guenée)	931308							3	3		1			7
			<i>candefacta</i> (Hübner)	931314						1		2					3
		<i>Spragueia</i>	<i>dama</i> (Guenée)	931382											3		3
			<i>leo</i> (Guenée)	931387							1	6					7
	Pantheinae																
		<i>Panthea</i>	<i>furcilla</i> (Packard)	931396		2											5
		<i>Charadra</i>	<i>deridens</i> (Guenée)	931406						1				1			2
	Raphiinae																
		<i>Raphia</i>	<i>frater abrupta</i> Grote	931412						6			2				8
	Balsinae																
		<i>Balsa</i>	<i>malana</i> (Fitch)	931417						6	1				1		8

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Amphipyridae	<i>Amphipyra</i>	<i>pyramioides</i>	Guenée	931544						16	2	1	3				22
	<i>Psaphida</i>	<i>resumens</i>	Walker	931548					1								1
		<i>rolandi</i>	(Grote)	931550			1		2								3
	<i>Copivaleria</i>	<i>grotei</i>	(Morrison)	931557					8	4							12
	<i>Feralia</i>	<i>major</i>	Smith	931563	2	8											10
	<i>Emarginea</i>	<i>percara</i>	(Morrison)	931606							1						1
	<i>Basilodes</i>	<i>pepita</i>	Guenée	931676						6	4	3	2				1
	<i>Azenia</i>	<i>obtusata</i>	(Herrich-Schäffer)	931724													15
Agaristinae	<i>Eudryas</i>	<i>unio</i>	(Hübner)	931964					1	1	1						3
		<i>grata</i>	(Fabricius)	931966						2	1	2					5
Condicinae	<i>Perigea</i>	<i>xanthioides</i>	Guenée	931986						1	2						3
	<i>Condica</i>	<i>videns</i>	(Guenée)	931989					5	2	6	3	3	10			29
		<i>mobilis</i>	(Walker)	931992											1		1
		<i>vecors</i>	(Guenée)	931995						1	2				2		5
		<i>sutor</i>	(Guenée)	931998						2					2		4
		<i>confederata</i>	(Grote)	932015									1				1
		<i>cinereola</i>	(Guenée) ^B	932018						3	3	2					8
	<i>Ogdoconta</i>	<i>apicosa</i>	(Haworth)	932025					1		4	2	3	1			11
Heliothinae	<i>Helicoverpa</i>	<i>zea</i>	(Boddie)	932045					1	1	1	11	5	2			20
	<i>Chloridea</i>	<i>virescens</i>	(Fabricius)	932054									1				1
	<i>Schinia</i>	<i>rivulosa</i>	(Guenée)	932091									2				2
		<i>trifascia</i>	Hübner	932096									4	1			5
		<i>sordidus</i>	Smith	932116											1		1
		<i>nubila</i>	(Strecker)	932117											1		1

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>lynx</i> (Guenée)	932120										2			2
			<i>arcigera</i> (Guenée)	932134											5		5
			<i>saturata</i> (Grote)	932135											3		3
			<i>nundina</i> (Drury)	932156											1		1
Eriopinae			<i>mollissima</i> (Guenée)	932192					1	1	1	2	4	4	1		9
<i>Calloptistria</i>			<i>granitosa</i> (Guenée)	932193								3	1	1			1
			<i>cordata</i> (Ljungh)	932194													4
Noctuinae			<i>turbulenta</i> Hübner	932208						6			1				7
<i>Phosphila</i>			<i>miselioides</i> (Guenée)	932209						2	1		2		4		9
<i>Spodoptera</i>			<i>frugiperda</i> (Smith)	932216										3	28	6	37
			<i>ornithogalli</i> (Guenée)	932219									1	5	6	1	13
			<i>latifascia</i> (Walker)	932220								1		2	2		5
			<i>eridania</i> (Stoll)	932223													1
<i>Elaphria</i>			<i>versicolor</i> (Grote) ^B	932228						3	1	3			4		11
			<i>chalconia</i> (Hübner)	932230								2					2
			<i>georgei</i> (Moore & Rawson)	932232						5							5
			<i>festivoides</i> (Guenée)	932233						1				1			2
			<i>grata</i> Hübner	932238						1		2			1		4
<i>Galgula</i>			<i>partita</i> Guenée	932249							1	4	2	2	7		18
<i>Chytonix</i>			<i>palliatricula</i> (Guenée)	932249.5					2	14	4	2	2	1	17	1	41
			<i>sensilis</i> Grote	932249.6											1		1
<i>Athetis</i>			<i>tarda</i> (Guenée)	932269						11					1		12
<i>Nedra</i>			<i>ramosula</i> (Guenée)	932284						2					1		3
<i>Iodopepla</i>			<i>u-album</i> (Guenée)	932287					1	1	1			1	2	2	8
<i>Apamea</i>			<i>quinteri</i> Mikkola & Lafontaine ^A	932301								1					1

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
			<i>indocilis</i> (Walker) ^A	932310											1		1
	<i>Oligia</i>		<i>modica</i> (Guenée)	932378											2		2
	<i>Acrapex</i>		<i>relicta</i> (Ferguson)	932431								7					7
	<i>Parapamea</i>		<i>buffaloensis</i> (Grote)	932464								1		1			8
	<i>Papaipema</i>		<i>furcata</i> (Smith)	932468											3		3
			<i>marginidens</i> (Guenée)	932472												1	1
			<i>inquaesita</i> (Grote & Robinson)	932476											2		2
			<i>lysimachiae</i> Bird ^A	932487											2		2
			<i>polymniae</i> Bird	932490											1		1
	<i>Lithophane</i>		<i>patefacta</i> (Walker)	932532			2										2
			<i>signosa</i> (Walker)	932542						1							1
			<i>viridipallens</i> Grote	932552	1		1										2
			<i>unimoda</i> (Lintner)	932582				1									1
	<i>Eupsilia</i>		<i>sidus</i> (Guenée) ^A	932588			2										2
			<i>cirripalea</i> Franclemont ^A	932589													1
			<i>tristigmata</i> (Grote) ^A	932590			1										1
	<i>Sericaglaea</i>		<i>signata</i> (French)	932595			3	8	18								29
	<i>Xystoceplus</i>		<i>rufago</i> (Hübner)	932596					1								1
	<i>Metaxaglaea</i>		<i>viatica</i> (Grote)	932598	2	1	6	2	1							1	13
			<i>semitaria</i> Franclemont	932599		1											1
	<i>Chaetoglaea</i>		<i>violacea</i> Schweitzer	932601		5	10	7	2								24
	<i>Sunira</i>		<i>sericea</i> (Morrison)	932607	1	9	1										11
	<i>Orthosia</i>		<i>bicolorago</i> (Guenée)	932616	5	7									5		17
			<i>alurina</i> (Smith)	932774													13
			<i>hibisci</i> (Guenée)	932778			1	12									7
	<i>Himella</i>		<i>fidelis</i> Grote	932785												1	1
	<i>Egira</i>		<i>alternans</i> (Walker)	932799			1	23									24
	<i>Achatia</i>		<i>distincta</i> Hübner	932800												1	1

Family	Subfamily	Genus	Species ^{A, B, C, D, E}	P3 No.	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total			
<i>Morrisonia</i>			<i>confusa</i> (Hübner)	932803					4								4			
			<i>triangula</i> Sullivan & Adams	932804					1										1	
			<i>unipuncta</i> (Haworth) ^C	932935	1					1	3	3	4						13	
<i>Mythimna</i>			<i>extincta</i> Guenée ^A	932937							1						1			
			<i>linda</i> Franclemont	932944						2									2	
<i>Leucania</i>			<i>scirpicola</i> Guenée	932957					1									1		
			<i>adjuta</i> (Grote)	932960					3	2	2	11	5						29	
			<i>calidior</i> (Forbes)	932964												3	1		4	
			<i>ursula</i> (Forbes)	932965																1
			<i>culea</i> (Guenée)	933118							1									1
			<i>majuscula</i> Herrich-Schäffer	933136							1	1	2	1					2	7
			<i>infecta</i> (Ochsenheimer)	933212							1	1	2				10			14
			<i>lubricans</i> (Guenée)	933214							3	1	1	1						5
			<i>fimbriaris</i> (Guenée)	933257															2	2
			<i>venerabilis</i> Walker	933516															1	1
<i>Agrotis</i>			<i>ipsilon</i> (Hufnagel)	933528	2	1			3	1			1	6	10		24			
			<i>tenebrifera</i> (Walker)	933536					2	7									9	
<i>Cerastis</i>			<i>fungorum</i> Grote & Robinson	933543	1												1			
<i>Choephora</i>			<i>pronuba</i> (L.) ^C	933551													1			
<i>Noctua</i>			<i>elimata</i> (Guenée)	933583											5	6	11			
<i>Xestia</i>			<i>dilucida</i> (Morrison)	933586	1											17	18			
<i>Abagrotis</i>			<i>alternata</i> (Grote)	933680						3	1	1					5			
Totals					49	64	81	48	447	1240	1483	1479	1455	1153	2536	489	10,524			

^ASpecies not previously reported from SC.
^BSpecies recorded in Congaree NP prior to November 2009.
^CNon-native species.
^DSpecies has not been reported to occur in the adjacent states of GA or NC.
^ESpecies has not been reported to occur in GA, NC, AL, FL, TN, or VA.

B. All specimens identified only to genus.

Family Subfamily Genus	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Nepticulidae														
Nepticulinae														
<i>Stigmella</i> sp.	160003.1						2	3						5
<i>Ectoedemia</i> sp.	160060.1						3							3
Tischeriidae														
Tischeriinae														
<i>Coptotriche</i> sp.	230018.1											1		1
Tineidae														
Clade B														
<i>Homosetia</i> sp.	300125.1											1	1	2
Gracillariidae														
Gracillariinae														
<i>Parornix</i> sp.	330190.1												1	1
<i>Marmara</i> sp.	330230.1						1	1						2
Lithocolletinae														
<i>Phyllonorycter</i> sp.	330256.1											1		1
Phyllocnistinae														
<i>Phyllocnistis</i> sp.	330394.1						1	1						2
Argyresthiidae														
Argyresthiinae														
<i>Argyresthia</i> sp.	360139.1						1	8						9
Cosmopterigidae														
Chrysopeleinae														
<i>Perimede</i> sp.	420329.1						2					2	1	5

Family Subfamily Genus	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Gelechiidae														
Anacampsisinae														
<i>Battaristis</i> new sp.	420470.1						2	4				4		10
Gelechiinae														
<i>Recurvaria</i> sp.	420711.1						1							1
<i>Chionodes</i> sp.	420887.1							1	2					3
<i>Filatima</i> sp.	421076.1					1								1
Elachistidae														
Elachistinae														
<i>Elachista</i> sp.	421362.1							1						1
Coleophoridae														
Coleophorinae														
<i>Coleophora</i> sp.	421509.1						8	8	6			16	2	40
Blastobasidae														
Holcocerinae														
<i>Holcocera/Asaphocrita</i> sp.	421757.1											1		1
<i>Calosima/Hypatopa</i> sp.	421757.2											4		4
Blastobasinae														
<i>Blastobasis</i> sp.	421763.1							1		2		4	2	9
<i>Pigritia</i> sp.	421801.1								1			2	1	4
Momphidae														
Momphinae														
<i>Mompha</i> sp.	421812.1											1		1
Tortricidae														
Tortricinae														
<i>Aethes</i> sp.	620089.1						2	1	2	1		4		10

Family	Subfamily	Genus	P3 number	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
		<i>Cochylis</i> sp.	620124.1											2		2
		<i>Thyraylia</i> sp.	620206.1											5		5
	Olethreutinae															
		<i>Notocelia</i> sp.	621109.1											1		1
		<i>Epinotia</i> sp.	621191.1				1							1		2
		<i>Dichrorampha</i> sp.	621275.1							1						1
	Crambidae															
	Schoenobiinae									1						1
		<i>Donacula</i> new sp.	800707.1													
	Notodontidae															
	Heterocampinae												1			1
		<i>Litodonta</i> new sp.	930060.1													
	Erebidae															
	Hypenodinae															
		<i>Dyspyralis</i> sp.	930669.1							1				1		2
	Noctuidae															
	Noctuinae															
		<i>Paramea</i> new sp.	932511.1												2	2
		new sp.	932511.2												1	1
	Totals			0	0	0	0	2	23	30	13	3	1	51	11	134
	Grand totals			49	64	81	48	449	1263	1513	1492	1458	1154	2587	500	10,658

SOUTHEASTERN NATURALIST

Co-sponsors: Association of Southeastern Biologists

Eagle Hill Institute

Board of Editors

Roger D. Applegate, Tennessee Wildlife Resources Agency, Ellington Agricultural Center, Nashville, TN

Richard E. Baird, Dept. of Entomology and Plant Pathology, Mississippi State University, Mississippi State, MS

Wylie C. Barrow, Jr., National Wetlands Research Center, US Geological Survey, Lafayette, LA

Richard L. Brown, Mississippi Entomological Museum, Mississippi State University, Starkville, MS

Robert Carter, Biology Department, Jacksonville State University, Jacksonville, FL

Brian D. Carver, Biology Department, Tennessee Tech University, Cookeville, TN

Kristen Cecala, Department of Biology, Sewanee: The University of the South, Sewanee, TN

L. Michael Conner, J.W. Jones Ecological Research Center, Newton, GA

Michael V. Cove, Smithsonian Conservation Biology Institute, Front Royal, VA

Jason R. Cryan, North Carolina Museum of Natural Sciences, Raleigh, NC

Barbara E. Curry, Conservation Biology Program, University of Central Florida, Orlando, FL

Jason Davis, Ecophysiology, Radford University, Radford, VA

Alvin R. Diamond, Department of Biological and Environmental Sciences, Troy University, Troy, AL

Nathan Dorn, Department of Biological Sciences, Florida Atlantic University, Davie, FL

John J. Dilustro, Biology Department, Chowan University, Murfreesboro, NC

Andrew Edelman, Biology Department, University of West Georgia, Carrollton, GA

Nathan R. Franssen, US Fish and Wildlife Service, Albuquerque, NM

Brad Glorioso, USGS, National Wetlands Research Center, Lafayette, LA

Keith Goldfarb, GoldRush Science Services, Steuben, ME ... **Editor-in-Chief**

Cathryn Greenberg, Southern Research Stn, Brent Creek Experimental Forest, US Forest Service, Asheville, NC

Justin L. Hart, Department of Geography, University of Alabama, Tuscaloosa, AL

Matthew Heard, Department of Biology, Belmont University, Nashville, TN

JoVonn Hill, Dept. of Entomology and Plant Pathology, Mississippi State University, Mississippi State, MS

David Jachowski, Department of Forestry and Environmental Conservation, Clemson University, Clemson, SC

Robert M. Jetton, Dept. of Forestry & Environmental Resources, North Carolina State University, Raleigh, NC

Benjamin P. Keck, Division of Biology, University of Tennessee, Knoxville, TN

John C. Kilgo, Southern Research Station, USDA Forest Service - Savannah River, New Ellenton, SC

David Kremetz, Department of Biological Sciences, University of Arkansas, Fayetteville, AR

Robert "Trip" Krenz, Geosciences & Natural Resources Depart., Western Carolina University, Cullowhee, NC

Marcus Lashley, Wildlife, Fisheries, and Aquaculture, Mississippi State University, Starkville, MS

Paul Leberg, Department of Biology, University of Louisiana Lafayette, Lafayette, LA

Foster (Frosty) Levy, Department of Biological Sciences, East Tennessee State University, Johnson City, TN

Joerg-Henner Lotze, Eagle Hill Institute, Steuben, ME ... **Publisher**

Scott Markwith, Department of Geosciences, Florida Atlantic University, Boca Raton, FL

Hayden Mattingly, Department of Biology, Tennessee Tech University, Cookeville, TN

Douglas B. McNair, Wellfleet, MA

Karl E. Miller, Fish & Wildlife Research Institute, Florida Fish & Wildlife Conservation Comm., Gainesville, FL

Glen H. Mittelhauser, Maine Natural History Observatory, Gouldsboro, ME ... **Managing Editor**

Frank R. Moore, Dept. of Biological Sciences, University of Southern Mississippi, Hattiesburg, MS

Max A. Nickerson, Florida Museum of Natural History, University of Florida, Gainesville, FL

Roger W. Perry, Southern Research Station, US Forest Service, Hot Springs, AR

Karen E. Powers, Biology Department, Radford University, Radford, VA

John J. Riggins, Department of Entomology, Mississippi State University, Mississippi State, MS

Paul M. Stewart, Department of Biological and Environmental Sciences, Troy University, Troy, AL

R. Eugene Turner, Dept. of Oceanography & Coastal Sciences, Louisiana State University, Baton Rouge, LA

Jill Weber, Eagle Hill Institute, Steuben, ME ... **Production Editor**

Bronwyn W. Williams, North Carolina Museum of Natural Sciences, Raleigh, NC

Kirsten Work, biology Department, Stetson University, Deland, FL

The *Southeastern Naturalist* (ISSN 1528-7092 [print], ISSN 1938-5412 [online]) is a collaborative publishing effort that is based at the Eagle Hill Institute, PO Box 9, 59 Eagle Hill Road, Steuben, ME 04680-0009. Phone 207-546-2821, FAX 207-546-3042. E-mail: office@eaglehill.us. Webpage: www.eaglehill.us/sena. Copyright © 2018, all rights reserved. Periodical postage paid in Steuben, ME and additional mailing offices. Published quarterly. **Special issue and monograph proposals are welcome.** Printed by Allen Press, Lawrence, KS. On-line secure subscription ordering: rate per year for individuals at US addresses - \$60 (students, \$48); organizations at US addresses \$250; Canadian addresses, add \$25; other non-US addresses, add \$55. **Postmaster:** Please send address changes to the above address. **Authors:** Submission considerations and formatting guidelines are available at www.eaglehill.us/sena. The Eagle Hill Institute is a tax exempt 501(c)(3) nonprofit corporation of the State of Maine (Federal ID # 010379899).