

**A Report on the Spiders and Other Arthropods of
Pine Island Audubon Sanctuary
Currituck County, North Carolina**

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Photo: stable dune barrens, B. Bockhahn

ABSTRACT

From May 31, 2025 to June 04, 2025 a survey of spiders and other arthropods was conducted at the 2,600-acre Pine Island Audubon Sanctuary, in the barrier island portion of Currituck County, North Carolina.

The habitat in this diverse area includes extensive Freshwater Marshes, Maritime Forest, Stable Dune Barrens, Ponds (shallow, rain filled), Old Fields, Lawns or mowed fields, Human Structures/houses, Maritime Evergreen Forest, Maritime Swamp Forest, Maritime Shrub, Maritime Wet Grassland and Maritime Shrub Swamp. (M. Schafale, NCHP site survey)

Methods in each above habitat included day-time visual surveys, sweep netting, litter sifting, beat sheets, vacuum, nighttime visual surveys with headlamp and nighttime visual surveys with UV light.

A total of 89 species of spiders were detected, which is a robust number for any one site in a short window of surveys in one season. Each habitat had a diversity and abundance of arthropods. Many habitat specialists were present, and some families were represented with species adapted to their habitats to the exclusion of others.

The presence of habitat specialists and overall diversity of arthropods and predatory arthropods, would indicate the habitat here is pristine and a keystone to biodiversity in coastal habitats.

The vast majority of sightings were new records for this under surveyed county. Very little work has been done in this portion of the state and historic records are obscure on which county or state where collections have occurred.

All records have been submitted to the North Carolina Biodiversity Project (NCBP) databases, including the Arachnids of North Carolina, Butterflies of North Carolina, Odonates of North Carolina, Beetles of North Carolina and Moths of North Carolina.

Several voucher specimens were obtained and will be stored at the NCSU Entomology Laboratory, GUID numbers will be attached to vouchers and added to the database records on the NCBP. Photograph based identifications were made for common species and are subject to errors involved with the methodology.

Many photos were also submitted to inaturalist: [Observations · iNaturalist](#)

SPIDER OBSERVATIONS/NOTES, BY FAMILY

Agelenidae – Grass/Funnel Web Spiders: 2 species were detected in low numbers, owing to the early season for the group. *Barranopsis texana* which occupy edge habitats and man-made structures, sign posts etc. *Agelenopsis utahana* was present in modest numbers in moist areas of Maritime Forest and the edge of Freshwater Marsh.

Anyphaenidae – Ghost Spiders: 4 species in low numbers, owing to the early season. **Arachosia cubana** was found in the Freshwater Marsh, one of the few North Carolina records for this uncommon species which specializes in freshwater marshes and bog habitat that retains shrubs. *Hibana gracilis* was present inside and outside of houses and enclosed structures. *Wulfila saltabundus* can sometimes be the most abundant spider in eastern forests underneath leaves on low shrubs. Decent numbers were detected in Maritime Evergreen Forest and Maritime Wet Grassland.



Arachosia cubana



Metazygia wittfeldae

Araneidae – Orb Weavers: 13 species were detected. **Metazygia wittfeldae**, an uncommon orb weaver with no common name, was abundant on houses and structures near Freshwater Marshes. The first overlook on the nature trail was covered in these nocturnal orb web builders. Two of the most abundant spiders were *Neoscona arabesca* which occurred in most habitats, and *Eustala anastera* which was numerous in the Maritime Forest. Several of the common small orbweavers were found in Old Fields and Maritime Forest, and late summer/fall should abound in numbers. *Hypsosinga rubens* was detected in Pond habitat, this tiny spider is rarely found though its range is most of the state. *Argiope aurantia*, the Black & Yellow Argiope (writing spider, zigzag spider, writing spider, cross spider) was detected in moist habitats.

Cheiricanthiidae – Long-legged Sac Spiders: 1 species was detected. The widespread and abundant *Cheiricanthium inclusum* was found in Pond and Freshwater Marsh habitats, although in the rest of the state it occupies a variety of habitats including bogs.

Clubionidae – Sac spiders: 2 species detected. ***Clubiona nicholsi*** occurs only in dry xeric habitats along the coast and was found in the Stable Dune Barrens habitat for one of few records in the state. The common and abundant *Elaver excepta* was found in the Maritime Evergreen Forest.



Clubiona nicholsi

Castianeira gertschi

Dolomedes albineus

Corrinadae – Ant-mimic and Ground Sac Spiders: 1 species detected. A single immature ***Castianeira gertschi*** was found in Pond habitat. Though widespread across the state and the east, it's rarely encountered with only a handful of records for each state.

Dolomedidae – Fishing Spiders: 2 species detected. ***Dolomedes albineus*** was present on tree trunks in Maritime Evergreen Forest habitats and occur on most tree trunks near water statewide. *Dolomedes triton* was present in similar habitats, but more commonly seen lower on the water on edges of ponds and freshwater marshes.

Gnaphosidae – Ground Spiders: 3 species detected. *Callilepis pluto* occurs in the drier portions of the maritime forest, a wide-ranging but uncommon species. *Cesonia bilineata* occurs in similar habitat but is more often encountered, though fast and hard to photograph.

Linyphiidae – Dwarf and Sheetweb spiders: only 5 species in modest numbers. Most of these mature in the winter, so not as many numbers or diversity in this very large group of very tiny spiders. ***Tapinopa bilineata*** was found using the spider vacuum in dry maritime forest, representing only the 3rd record for North Carolina. The Maritime Forest leaf litter had a lot of immature and few adult *Tenuiphantes sabulosus*, a widespread but not often encountered species. The Freshwater Marsh contained numerous *Bathyphantes pallidus*, widespread and rarely encountered as well. *Ceraticelus fissiceps* were found in all ages in all habitats.



Tapinopa bilineata



Geolycosa pikei



Rabidosa hentzi

Lycosidae – Wolf Spiders: 14 species and abundant, this family represents many habitat specialists. The stable dune barrens contained two specialists in good numbers. *Arctosa littoralis*, shoreline wolf spider, which also occurs on the coastal beach strand. And the S3 S4 ranked ***Geolycosa pikei***, burrowing wolf spider. Several females were found inside their burrows and nocturnal surveys revealed a lot of movement and the documentation of a female with young on her back, that quickly went around to her belly when the head lamp beam got close. This is a common occurrence in this family, but for this author that's the first time I've seen this species carrying young. *Hogna antelucana* was abundant in Maritime Forest habitats. *Pardosa milvina* was abundant along Pond shorelines. A few *Pirata* were found on the edge of the Freshwater marsh and the Maritime Wet Grassland. The genus *Rabidosa* was represented with two species, with *rabida* being encountered in all habitats, and one lone ***hentzi*** found in dry Maritime Forest. *Schizocosa crassipes* was abundant in Maritime Forest habitat. *Tigrosa annexa* was abundant in mowed lawn habitats, while *Tigrosa georgicola* was very common in Maritime Forest. *Varacosa* were detected in the Maritime Shrub Swamp and Freshwater Marsh edge, with adults of *V. avara* confirmed, likely some immature *V. shenandoa* but they mature in winter.

Mimetidae – Pirate Spiders: 1 species and just two detections. *Mimetus puritanus* are more common in late summer and fall, but singles were detected in Maritime Shrub Swamp and Old Field habitat.

Nephilidae: 1 species, the Golden Silk Orbweaver. Numerous immatures were found in leaf litter of Maritime Forest, Stable Dune Barrens, and the base of grass clumps in the Freshwater Marsh. No adults were found with webs, as the young are still maturing and, in the fall, will climb into trees to build webs as adults.

Philodromidae – Running Crab Spiders: 6 species and uncommon. Detected in low numbers but do seem to suggest some habitat specialization at this site. **Philodromus cespitum** in the Freshwater Marsh, **P. floridensis** in Maritime Forest, **P. imbecillus** in Old Field, *P. marxi* in Maritime Shrub Swamp and Maritime Forest, *P. undarum* in Stable Dune Barrens, *Tibellus oblongus* in the Maritime Shrub Swamp near the Freshwater Marsh.



Philodromus cespitum



Philodromus floridensis



Philodromus imbecillus

Pholcidae – Cellar Spiders: 2 species and abundant. Two species *Pholcus phalangioides* and *Pholcus manueli*, were abundant inside houses and structures. Neither are historically found in the United States but occur within feet of each other in dwellings.

Phrurolithidae – Guardstone Spiders: only one species of this diverse family was detected. *Phrurotimpus borealis* was found in leaf litter in dry Maritime Forest, a widespread and common species. Several other habitat specialists in this family were surprisingly not detected.

Pisauridae – Nursery Web Spiders: 2 species and infrequent. *Pisaurina mira* is one of the most widespread spiders in the eastern U.S., this edge loving species will be more numerous later in the year. A single *Pisaurina undulata* was found in Old Field habitat.

Salticidae – Jumping Spiders: 14 species and numerous in all habitats. ***Admestina tibialis*** was found in the Maritime Wet Grassland, appropriate for this bog and wetland specialist. Several immature *Neon nelli* were found in a few different habitats, this tiny jumper is often overlooked. ***Peckhamia americana*** is an ant mimic jumping spider with only a few records in North Carolina, one found in the Maritime Shrub Swamp was a nice surprise. Another rarely encountered species with few records in the state, *Zygoballus nervosus* was found in Pond habitat. The genus *Phidippus* includes the big and showy jumpers, with *P. clarus* found in Old Field habitat, *P. princeps* in Maritime Wet Grassland, *P. putnami* and *whitmani* found in Maritime Forest. Several other common species were present in multiple habitats.



Peckhamia americana



Admestina tibialis

Tetragnathidae – Long-jawed Orbweavers: 4 species in good numbers. *Leucage argyrobapta* is one of the most abundant web builders in the Maritime Forest, with its horizontal web build low in shrubs and tree trunks. The genus *Tetragnatha* was found in low numbers but with some suggestions of habitat specialization. *T. elongata* found in old fields, *T. laboriosa* in Maritime Shrub Swamp and *T. straminea* in Freshwater Marsh.

Theridiosomatidae – Ray Spiders: 1 species and common. The minute *Theridiosomma gemmosum* was found in Maritime Forest and Stable Dune Barrens where they build small orb webs near the ground along logs or branches.

Theridiidae – Cobwebs Spiders: 6 species and common. Only one Northern Black Widow, *Latrodectus variolus*, a male was found in the Maritime Shrub Swamp. *Parasteatoda tepidariorum*, the Common House Spider, was abundant on the side of man-made structures. *Theridion differens* and *murarium* was found together in good numbers in all Maritime Forest habitats. A single *Tidarren sisypoides* was found in dry Maritime Forest, representing the first record for northeastern North Carolina.

Thomisidae – Crab Spiders: 3 species and common. The widespread *Synema parvulum* was vacuumed out of lawn habitat in decent numbers. The larger bark mimicking *Xysticus* were represented by two species, with *X. ferox* found in all habitats except the maritime forest, where a single *X. funestus* was detected.

OTHER ARTHROPOD NOTES/OBSERVATIONS, BY ORDER

Lepidoptera – Butterflies: 13 species. Though much of the survey work was done at night or early morning, a few butterflies were detected including the maritime forest specialty Eastern Giant Swallowtail, a White-M Hairstreak, numerous Little-Wood Satyr and Common Wood-Nymph and a single Monarch, likely second brood and still pushing north to Canada.

Lepidoptera – Moths: 43 species, all of which were new county records. A UV light was used on the lodge porch every night. *Catocala micronympha* and *C. similis* are maritime dune, sand ridge specialist feeding on oaks. Several *Prionapteryx achatina*, a xeric specialist, were found representing only the fourth record for NC for this Grass moth, with records from Fort Macon and the sandhills. Just the 5th state record was a single *Argyrotaenia ivana*, a species that occurs at xeric sites near brackish wetlands. *Apogeshna stenialis* is another xeric sandhills, coastal sandhills specialist. *Parapoynx maculalis*, Polymorphic Pondweed Moth was a new record for northeastern NC, limited to its host plants of water lilies and pond lilies. A single *Martyringa xeraula*, Himalayan Grain Moth was found representing the first record for northeastern North Carolina. This introduced species is native to India and Asia.



Catocala similis

Prionapteryx achatina

Argyrotaenia ivana

Odonata – Dragonflies and Damselflies: 10 species, common. Not much daytime focused effort, but some coastal specialties like **Needhams Skimmer** and **Big Bluet** were observed in good numbers.



Coleoptera – Beetles. Stable Dune Barrens were searched for tiger beetles, the common *Cicindella punctulata*, Punctured Tiger Beetle adults were observed. Not found was the State Rare G3/G4, S1 ***Ellipsoptera lepida***, Ghost Tiger Beetle. Previously, it was only known from the living dunes at Jockeys Ridge in Dare County. Off site, the living dunes north of Corolla provided a new county record for this rare beetle on 2025, June 4 Currituck County (Luark/Penny Hill). After dusk over the pond, single flashes of a *Photuris* firely was observed and individual collected and photographed. Habitat, flash pattern and coloration seem to match for ***Photuris frontinalis***, the “Snappy Single Sync” Firefly.



Ellipsoptera lepida



Photuris frontinalis

Other arthropod groups. Several bark lice were found, a county record planthopper *Xenoliarus placitus* was found in multiple habitats. The Stable Dune Barrens produced some of the habitat specialist species known from Jockeys Ridge, *Trimerotropis maritima*, the Seaside Grasshopper; *Stichopogon trifasciatus*, Three-banded Robber Fly; *Proctacanthus brevipennis*, a Robber Fly; and an abundance of *Myrmeleon immaculatis*, The Immaculate Antlion. Adult Antlions were observed, one larva was obtained from its pit with the spider vacuum.



Trimerotropis maritima



Myrmeleon immaculatis



ARTHROPODS EXPECTED BUT NOT DETECTED

Some of the species not observed but part of the dune barrens/marsh community include: *Micaria longipes*, ant-mic dune spider; Dukes Skipper; *Diceroprocta viridifascia*, Atlantic Saltmarsh Cicada; *Laphystia litoralis*, Dune Robber Fly; *Microbembex monodonta*, Sand Wasp; *Megachile montivaga*, Silver-tailed Petalcutter Bee; *Dasymutilla bioculata*, A Velvet Ant; Minute Dune Scarab Beetle, Scarab sp.; *Pyroctomena lucifera*, Marsh Imp Firefly.

TABLE 1. SPIDER HABITAT SPECIALISTS

Freshwater Marsh	<i>Arachosia cubana</i>
	<i>Metazygia wittfeldae</i>
	<i>Dolomedes triton</i>
	<i>Bathyphantes pallidus</i>
	<i>Philodromus cespitum</i>
	<i>Tetragnatha straminea</i>
Stable Dune Barrens	<i>Clubiona nicholsi</i>
	<i>Arctosa littoralis</i>
	<i>Geolycosa pikei</i>
	<i>Philodromus undarum</i>
Maritime Evergreen Forest	<i>Dolomedes albineus</i>
	<i>Tapinopa bilineata</i>
	<i>Tenuiphantes sabulosus</i>
	<i>Hogna antelucana</i>
	<i>Rabidosa hentzi</i>
	<i>Philodromus floridadensis</i>
	<i>Phrurotimpus borealis</i>
	<i>Phidippus putnami</i>
	<i>Phidippus whitmani</i>
	<i>Leucage argyrobapta</i>
	<i>Xysticus funestus</i>
Ponds	<i>Hypsosinga rubens</i>
	<i>Castianeira gertschi</i>
	<i>Dolomedes triton</i>
Maritime Wet Grassland	<i>Admestina tibialis</i>
	<i>Phidippus princeps</i>
Maritime Shrub Swamp	<i>Philodromus marxi</i>
	<i>Tibellus oblongus</i>
	<i>Peckhamia americana</i>
	<i>Tetragnatha laboriosa</i>
House/Human structures	<i>Pholcus phalangioides</i>
	<i>Pholcus manueli</i>
	<i>Parasteatoda tepidariorum</i>

Old Field	<i>Philodromus imbecillus</i>
	<i>Pisaurina undulata</i>
	<i>Phidippus clarus</i>
	<i>Tetragnatha elongata</i>

OTHER ARTHROPODS		5/30 HU-N	5/31 FM-I	5/31 LW-I	5/31 OF-I	6/1 MF-D	6/1 HU - N	6/2 SBD-I	6/2 PO-D	6/2 MWG	6/3 MSS-I	6/3 MSS-N	6/4 OF-N	6/4 SBD-N
Family	Species													
BUTTERFLIES - 13 species														
Lepidoptera	Palamedes Swallowtail						1							
Lepidoptera	Eastern Tiger Swallowtail							1						
Lepidoptera	Giant Swallowtail							1						
Lepidoptera	Gray Hairstreak					1		2						
Lepidoptera	White M Hairstreak							1						
Lepidoptera	Red-banded Hairstreak												1	
Lepidoptera	Little Wood Satyr					4		8			5			
Lepidoptera	Pearl Crescent		1											
Lepidoptera	Common Wood Nymph		3			2		2						
Lepidoptera	Eastern Comma										1			
Lepidoptera	American Snout		1											
Lepidoptera	Monarch					1								
Lepidoptera	Horace's Duskywing										1			
MOTHS - 43 Species														
Lepidoptera	Eumarozia malachitina							1						
Lepidoptera	Catocala micronympha							1						
Lepidoptera	Catocala similis							8						
Lepidoptera	Bleptina inferior							1						
Lepidoptera	Hypena baltimoralis					1								
Lepidoptera	Prionapteryx achatina (4th NC)					1	4							
Lepidoptera	Rhyacionia frustrana												1	
Lepidoptera	Desmia maculalis											1		
Lepidoptera	Apogeshna stenialis										1			
Lepidoptera	Udia rubigalis					1								
Lepidoptera	Paectes abrostoloides					1								
Lepidoptera	Acrolophus sp					1								
Lepidoptera	Idia rotundalis					1								
Lepidoptera	Hypsopyge olinalis					1								
Lepidoptera	Parapediasia tetterellus					1								
Lepidoptera	Phycitinae sp					1								
Lepidoptera	Eupethicea miserulata					4								
Lepidoptera	Parapoynx maculalis					1								
Lepidoptera	Elaphria grata					1								
Lepidoptera	Tolype velleda					1								
Lepidoptera	Nemoria bifilata					1								
Lepidoptera	Apantesis phalerata					1								
Lepidoptera	Homophoberia apicosa					1								
Lepidoptera	Macurocampa marthesia					2								
Lepidoptera	Mythimna unipuncta					1								
Lepidoptera	Microcrambus elegans					1								
Lepidoptera	Elophila oblitalis					1								
Lepidoptera	Crambidia pallida					2								
Lepidoptera	Spargnothis sulfereana					5								
Lepidoptera	Aglossa disciferalis					1								
Lepidoptera	Costaconvexa centrostrigaria					1								
Lepidoptera	Argyrotaenia ivana					1								
Lepidoptera	Tortricidae sp					1								
Lepidoptera	Eulithus diversilineata					1								
Lepidoptera	Hypoprepia fucosa					1								
Lepidoptera	Galgula partita					2								
Lepidoptera	Donacula sp					2								
Lepidoptera	Iridopsis defectaria					1								
Lepidoptera	Acherdoa ferraria					1								
Lepidoptera	Idia aemula					1								
Lepidoptera	Megalopyge opercularis					1								
Lepidoptera	Spilosoma					1								
Lepidoptera	Martyringa xeraula					1								
Dragonflies and Damselflies - 10 species														
Odonata	Common Green Darner					1								
Odonata	Needham's Skimmer		12											
Odonata	Carolina Saddlebags							1						
Odonata	Great Blue Skimmer					1		2						
Odonata	Little Blue Dragonlet							2						
Odonata	Blue Dasher					2								
Odonata	Eastern Pondhawk		1											
Odonata	Big Bluet		1			6		10						
Odonata	Citrine Forktail													1
Odonata	Ramburs Forktail		1											
Coleoptera	Photuris frontalis	Single low flashes over pond after dusk												
Coleoptera	Cicindella punctulata							1						
Hemiptera	Xenoliarus placitus							2						
Neuroptera	Myrmelson immaculatis							60						
Orthoptera	Trimerotropis maritima							30						
Diptera	Stichopogon trifasciatus							3						
Diptera	Proctacanthus brevipennis							1						