Checklist of the Butterflies, Dragonflies and Damselflies of Carolina Sandhills NWR and vicinity.

Observer(s): _____

Date: _____

Time: _____

County: _____

Location: _____

Species total: _____

Papilionidae

Swallowtails (Papilioninae)

___Pipevine Swallowtail - *Battus philenor*
___Black Swallowtail - *Papilio polyxenes*
___Eastern Tiger Swallowtail - *Papilio glaucus*
___Spicebush Swallowtail - *Papilio troilus*
___Palamedes Swallowtail - *Papilio palamedes*
___Zebra Swallowtail - *Eurytides marcellus*

Pieridae

Whites (Pierinae)

___Cabbage White - *Pieris rapae*

Sulphurs (Coliadinae)

___Clouded Sulphur - *Colias philodice*
___Orange Sulphur - *Colias eurytheme*
___Southern Dogface - *Zerene cesonia*
___Cloudless Sulphur - *Phoebis sennae*
___Little Yellow - *Pyrisitia lisa*
___Sleepy Orange - *Abaeis nicippe*

Lycaenidae

Hairstreaks (Theclinae)

___Great Purple Hairstreak – *Atlides halesus*
___Red-banded Hairstreak - *Calycopis cecrops*
___Juniper Hairstreak - Callophrys grynea
___Brown Elfin - Callophrys augustinus
___Eastern Pine Elfin – Callophrys niphon
___Frosted Elfin - Callophrys irus
___Henry's Elfin - Callophrys henrici
___Gray Hairstreak - Strymon melinus

Blues (Polyommatinae)

___Eastern Tailed-Blue - *Cupido comyntas*
___Spring Azure - *Celastrina ladon*
___Summer Azure - Celastrina neglecta

Nymphalidae

Heliconians and Fritillaries (Heliconiinae)

___Gulf Fritillary - *Agraulis vanillae*
___Variegated Fritillary - *Euptoieta claudia*

True Brush-foots (Nymphalinae)

___Mourning Cloak – *Nymphalis antiopa*
___American Lady - *Vanessa virginiensis*
___Painted Lady - *Vanessa cardui*
___Red Admiral - *Vanessa atalanta*
___Common Buckeye - *Junonia coenia*
___Pearl Crescent - *Phyciodes tharos*

Admirals (Limenitidinae)

___Red-spotted Purple – *Limenitis arthemis astyanax*
___Viceroy – *Limenitis archippus*

Emperors (Apaturinae)

___Hackberry Emperor - *Asterocampa celtis*

Satyrs (Satyrinae)

___Southern Pearly-eye - *Lethe portlandia*
___Carolina Satyr - *Hermeuptychia sosybius*
___Little Wood-Satyr - *Megisto cymela*

Milkweed Butterflies (Danainae)

___Monarch - *Danaus plexippus*

Hesperiidae

Spread-wing Skippers (Pyrginae)

___Silver-spotted Skipper - *Epargyreus clarus*
___Long-tailed Skipper - *Urbanus proteus*
___Hoary Edge - *Achalarus lyciades*
___Southern Cloudywing - *Thorybes bathyllus*
___Northern Cloudywing – *Thorybes pylades*
___Confused Cloudywing - *Thorybes confusis*
___Sleepy Duskywing - *Erynnis brizo*

Gulf fritillary open wing view

Gulf fritillary closed wing view

Painted lady on Buttonbush

Palamedes swallowtail

Spicebush swallowtail on Butterfly weed

Zebra swallowtail on Butterfly weed

Tiger swallowtail on Joe-pye weed

Buckeye on Leadplant

photos: ©Will Stuart

Pipevine swallowtail

Monarch on Aster flower

___Juvenal's Duskywing - *Erynnis juvenalis*
___Horace's Duskywing - *Erynnis horatius*
___Zarucco Duskywing - *Erynnis zarucco*
___Wild Indigo Duskywing – *Erynnis baptisiae*
___Common Checkered-Skipper - *Pyrgus communis*

Grass Skippers (Hesperiinae)

___Swarthy Skipper - *Nastra lherminier*
___Clouded Skipper - *Lerema accius*
___Least Skipper - *Ancyloxypha numitor*
___Southern Skipperling - *Copaeodes minimus*
___Fiery Skipper - *Hylephila phyleus*
___Dotted Skipper - *Hesperia attalus*
___Meske's Skipper - *Hesperia meskei*
___Tawny-edged Skipper - *Polites themistocles*
___Crossline Skipper - *Polites origenes*
___Whirlabout - *Polites vibex*
___Southern Broken-Dash - *Wallengrenia otho*
___Northern Broken-Dash - *Wallengrenia egeremet*
___Sachem – *Atalopedes campestris*
___Yehl Skipper - *Poanes yehl*
___Dion Skipper - *Euphyes dion*
___Dun Skipper - *Euphyes vestris*
___Lace-winged Roadside-Skipper – *A. aesculapius*
___Reversed Roadside-Skipper - *Amblyscirtes reversa*
___Common Roadside-Skipper - *Amblyscirtes vialis*
___Eufala Skipper – *Lerodea eufala*
___Ocola Skipper - *Panoquina ocola*

Developed by Brian G. Scholtens, PhD and Dennis M. Forsythe, PhD (2011)

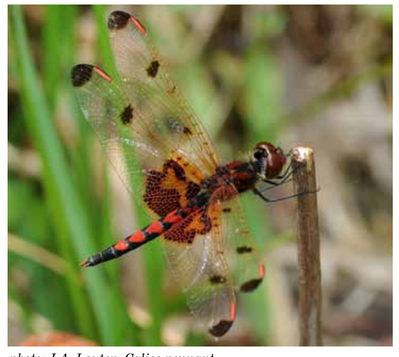

photo: J.A. Louten, Calico pennant

		Habitat
Dragonflies		
Aeshnidae - darners		
Anax junius	common green darner	**pond/lake**
Anax longipes	comet darner	**pond/lake**
Gomphidae - clubtails		
Gomphus lividus	ashy clubtail	**pond/lake**
Libellulidae - skimmers		
Celithemis amanda	amanda's pennant	**pond/lake**
Celithemis bertha	red-veined pennant	**pond/lake**
Celithemis elisa	calico pennant	**pond/lake**
Celithemis fasciata	banded pennant	**pond/lake**
Celithemis ornata	faded pennant	**pond/lake**
Erythemis simplicicollis	eastern pondhawk	**pond/lake**
Erythrodiplax miniscula	little blue dragonlet	**pond/lake**
Libellula auripennis	golden-winged skimmer	**pond/lake**
Libellula axilena	bar-winged skimmer	**pond/lake**
Libellula (Ladona) deplanata	blue corporal	**pond/lake**
Libellula incesta	slaty skimmer	**pond/lake**
Nannothemis bella	elfin skimmer	**pond/lake**
Pachydiplax longipennis	blue dasher	**pond/lake**
Tramea carolina	carolina saddlebags	**pond/lake**

		Habitat
Damselflies		
Calopterygidae - broad-winged damselflies		
Calopteryx dimidiata	sparkling jewelwing	**lg streams**
Calopteryx maculata	ebony jewelwing	**sm streams**
Coenagrionidae - pond damselflies		
Argia bipunctulata	seepage dancer	**sm streams**
Argia f. fumipennis	variable dancer	**streams/ponds**
Enallagma daeckii	attenuated bluet	**pond/lake**
Enallagma divagans?	tourquoise bluet	**pond/lake**
Enallagma doubledayi	atlantic bluet	**pond/lake**
Enallagma dubium	burgandy bluet	**pond/lake**
Enallagma geminatum	skimming bluet	**pond/lake**
Enallagma sp?		**pond/lake**
Enallagma traviatum	slender bluet	**pond/lake**
Ischnura hastata	citrine forktail	**pond/lake**
Ischnura posita	fragile forktail	**pond/lake**
Nehallenia integricollis	southern sprite	**pond/lake**
Lestidae - spreadwings		
Lestes vidua	carolina spreadwing	**pond/lake**

Developed by J.A. Louten and J.E. Louten (2011)

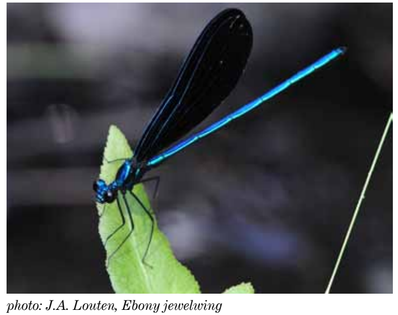

photo: J.A. Louten, Ebony jewelwing

photo: A. Askins, USFWS, Longleaf pine ecosystem

The longleaf pine and wiregrass ecosystem is the characteristic habitat of Carolina Sandhills National Wildlife Refuge. Established in 1939, the refuge sits astride one of the most remarkable sections of longleaf pine range: the Sandhills. The uneven topography is responsible for a diverse group of plant communities that developed in the Sandhills. Botanists have identified more than 750 species of plants on the refuge, including plants from the Piedmont, Sandhills and Coastal Plain. None of this remarkable diversity would exist without certain natural processes that drive the entire longleaf pine ecosystem, the most important of which is fire.

photo: D. M. Forsythe, Frosted Elfin

The plant diversity on the refuge supports an equally diverse collection of pollinators, including native bees, dragonflies, damselflies, birds and butterflies. In recent years, as numbers and species of pollinators worldwide declined, many scientists began to inventory and monitor these species as indicators of the overall health of ecosystems. On the refuge, scientists from universities, museums, and research agencies have developed lists of species, which previously had not been cataloged. For many species, this documentation represents a state record – the first time a species was recorded in the state. At the same time that scientists were beginning to look at pollinators, wildlife watchers began to enjoy searching for and watching colorful butterflies, dragonflies and damselflies as much as bird watching. Please feel free to stop by the Refuge Headquarters and show us your photographs or post your sightings in the guest register and sightings journal.

Butterfly Watching

Butterflies are like "flying wildflowers" from April through October. Butterfly watching is similar to birding. The refuge has several trails and areas that offer wildflower-viewing opportunities and thus, good butterfly viewing. Items that you may find helpful to bring with you on your excursion include a hand lens, notebook and pencil, camera, and wildflower guide. Please remember that all plants and butterflies on the refuge are protected. Good areas to explore include woodland trails, wetlands or ponds, and the fields of the Oxpen area.

photo: Irvin Pitts, Dotted skipper

Binoculars allow viewing from a distance. Binoculars most suitable for butterflies are able to focus closely - 15 feet or less. Another good technique is to slowly approach butterflies until you get very close. Most people are amazed at how close you can get - just inches away! You can photographically "collect" a butterfly with a 35mm camera and macro lens. Macro photography allows you to see a butterfly in stunning detail. The best type of macro lens has a 100mm focal length and focuses to "life-size" without an adaptor.

Field Guides

As in birding, a field guide is useful in learning the species of butterflies regularly found in South Carolina. Once you have learned to recognize butterflies, you may want to keep a "life list." For the East Coast, the field guide *Butterflies through Binoculars* by Jeffrey Glassberg is a good choice.

Habitats

As with real estate, the key to finding butterflies is location, location, location! What type of habitat are you in and what time of year is it? To see a variety of butterflies, visit varied habitats in different parts of the state during the wildflower-growing season, typically April through October on the refuge.

Butterfly Behaviors

Butterfly watchers can observe a wealth of behavior as well as splendid color patterns. Often a pair will spiral upwards in a courtship "whirlabout." You will see butterfly aggression, defense of territory, migration, mating, nectaring at flowers, basking in sunshine, socializing at puddles, predator evasion, egg laying, patrolling, and more.

Butterfly Life Cycle

Nearly everyone is familiar with one of nature's most striking transformations: the metamorphosis of caterpillar to butterfly. The life cycle of butterflies and moths is marked by four very distinct-looking stages: egg, larva, pupa (or chrysalis), and adult. Together, these four stages constitute a single generation, which may last anywhere from three weeks to two years. The number of generations produced each year varies from species to species and even within species according to the lengths of regional growing seasons.

Butterfly - Host Plant Relationships

Among the many rewards of studying butterflies is the opportunity to observe the direct ecological relationship between insect and plant. Butterflies, like many other insects, interact closely with plants throughout their life cycle, beginning with the adult female's selection of a host plant on which to place her eggs. This is a crucial choice since the hungry caterpillars, upon hatching, will immediately begin devouring the food plant. This will continue until they are fully-grown and ready to pupate.

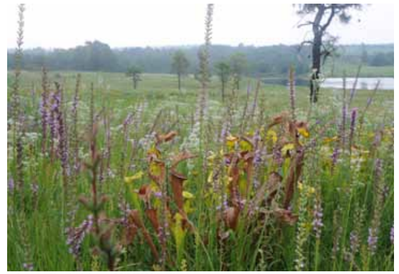

photo: R. Askins, USFWS, Oxpen seepage bog

photo: USFWS, Red-spotted purple among summer wildflowers

Most butterflies have strong larval food plant preferences. Some species feed on just one species of plant. More often, a species' caterpillars will eat a few closely related plant species and in some cases, large taxonomic groups of butterflies feed almost exclusively on a single plant family. A small proportion of butterflies will eat a broad range of plants from unrelated families. A dramatic example is the wide-ranging painted lady, for which more than 100 host plants from various families, including the asters, legumes, and mallows, have been recorded.

Dragonfly Watching

Dragonflies have been referred to as "the birders insect". This is because so many people who birdwatch have become dragonfly watchers. Dragonflies come in all shapes, sizes, colors, and color patterns. Only recently have people begun to observe them, give them common names, and learn their habits and habitats. Viewing dragonflies can be done with the naked eye, but a pair of close focusing binoculars will make the job easier. Dragonflies can be seen perched, either for long or short periods. Most perch close to water, hanging on twigs or floating vegetation, or flat on the ground or rocks. Others will soar to great heights or patrol rapidly over the water and are almost impossible to observe. Each species tends to have its own unique set of behaviors. Dragonflies are very aware of movement. They have the ability to see in many directions at the same time due to their large compound eyes. However, their ability to see behind them is limited. If you need to approach one, you should approach from the rear. Your quiet presence will usually not disturb the dragonfly's normal behavior.

U.S. Fish and Wildlife Service

Carolina Sandhills
National Wildlife Refuge
Butterflies and Dragonflies

Carolina Sandhills
National Wildlife Refuge
23734 U.S. Highway 1
McBee, South Carolina 29101
http://www.fws.gov/carolinasandhills/

http://www.fws.gov/refuges

1800/344 WILD

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photo: ©Will Stuart, Tiger swallowtail