NORTH CAROLINA BIODIVERSITY PROJECT

Spring 2021 Newsletter

SPRING FUNDRAISER

Can you spare $5 or $10 to help update the NC Biodiversity Project website? Please check out our Go Fund Me page and mention it to your friends!

North Carolina Biodiversity Project Go Fund Me

NEW SEDGE FOR NC

At this stage of data input, NATIVE plants new to NC are hard to come by. Here's one that came from tracking down a report by Alan Weakley in his newly revised 2020 Flora of the Southeastern United States (available for download HERE).

Schoenoplectiella smithii, long known as *Scirpus smithii*, Smith's Bulrush, is a northern and easily overlooked sedge. Weakley's Flora indicated a possible record in NC. Bruce Sorrie searched the Southeastern Regional Network of Expertise and Collections (SERNEC) Data Portal, which makes available botanical specimens - and label data - from literally millions of Southeastern herbarium collections, and confirmed a collection in Macon County in 1944. The specimen has been seen and it had been annotated previously by a sedge expert. A second collection, from Polk County in 1953, lacks annotation and needs to be double-checked.

Although the plant hasn't been found in many years, Bruce is fairly optimistic when it comes to re-discovering long-lost plants. As long as the habitat is still intact, there is a good chance that the plant still survives.


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FRESHWATER FISHES OF NC WEBSITE (link)

The checklist of freshwater fishes was updated to follow Tracy, B.H., F.C. Rohde, and G.M. Hogue. 2020. *An Annotated Atlas of the Freshwater Fishes of North Carolina*. Southeastern Fishes Council Proceedings: No. 60. For the database we were able to obtain the 276,000+ records compiled for that publication. Each record had GPS coordinates, but lacked a county attribute. John Amoroso, DPR GIS Analyst, calculated the county and river basin for each record. He was also able to determine which records (3,024) came from a NC State Park. We are now able to map every NC freshwater fish (All taxa: 257 Native taxa: 235) to one or more of North Carolina's 21 river basins, status in each basin, and county of occurrence.

BEETLES OF NC (link)

With the addition of a new family (LAMPYRIDAE) and a new subfamily [Trechinae] to the CARABIDAE, we have changed the site name from Tiger Beetles to Beetles. Thanks to Clyde Sorenson for developing the species list for the Fireflies. Steve Hall is working on adding taxa in the genus *Trechus* in the Trechinae. As far as he knows, this one genus has more narrowly endemic species than any other North American genus, plant or animal, and a large number of them are located in the mountains of North Carolina.

Beetles as a group are extremely diverse, so the Beetles website will be a work in progress for quite some time.

Cicindela ancocisconensis recorded by Giff Beaton in Haywood County

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LICHEN WEBSITE (link)

The lichen website is now online, and all those taxa that are literature-based have their proper citations. Currently, the checklist stands at over 1,400 taxa, with 1494 taxa, of which 927 are literature-based. About 22% species pages have images, and Tom Howard has created interactive maps for the lichen site - thanks Tom!

ORTHOPTERA OF NC (link)

A total of 305 records were submitted to the website in 2020. No new species were added to the state checklist but some of the records represented noteworthy range extensions. The Melodius Ground Cricket was previously known only from two sites in the Coastal Plain, but Ken Kneidel documented a population at Lake James, located at the foot of the Blue Ridge. Fulton's Ground Cricket, likewise previously known from only two sites in the Lower Coastal Plain, was documented at several sites in the Sandhills and in Durham County in the eastern Piedmont. Other noteworthy records include several that have not been recorded for over twenty years: Allard's Ground Cricket, Ambitious Ground Cricket, Sphagnum Ground Cricket, and the Slow-chirp Scaly Cricket.

Ninety of the submitted records were based on the songs of crickets and katydids, with many submitted as either MP3 recordings or as sound spectrograms. Records made using these methods by Ken Kneidel and Jim Petranka provided data for several sites in the Mountains and Piedmont that have been previously undersampled for these groups. On one trip to the Sandhills Game Land, Hall and Sullivan documented 27 species based on their songs (some were also photographed or observed). For many of these species, sound surveys represent the most effective way of documenting their presence. Many call from under shelter or from up in the trees and are very hard to discover visually. A few, moreover, are most easily identified by their songs, e.g., Fulton's Ground Cricket or the Melodius Ground Cricket.

Using just a moderately priced digital recorder and shotgun mic, a large amount of survey data can be collected quickly and easily. This is also a fun activity and we hope that more people will give it a try.

Fast-Calling Tree Cricket (*Oecanthus celerinictus*) singing male recorded by Steve Hall and Bo Sullivan in Moore County

CHENIA, A MOSS NEW FOR NORTH CAROLINA

Currently just short of 700 species of bryophytes (mosses, liverworts and hornworts) are recognized in North Carolina. One additional species of moss, *Chenia leptophylla*, recently has been added to our North Carolina Biodiversity Program list for the state.

During early spring of 2020, Jame Amoroso, NC Natural Heritage Program, Dr. Blanka Aguero, Curator of the Duke University Bryophyte Herbarium and David DuMond, retired biologist, undertook a bryophyte foray in Harnett County. We called this outing our 'Spring *Pleuridium* Foray' to honor a rare moss species, *Pleuridium sullivantii*, first reported from North Carolina in Harnett County by the late bryologist, Dr. Lewis Anderson, of Duke University. We had hoped to encounter this *Pleuridium*during the foray. Alas, we did not. The search for tiny spring ephemeral mosses will continue in the future.

While a variety of species were collected during the foray, one unfamiliar to us for the area, was also collected. *Chenia leptophylla* (which carries a substantial accumulation of nomenclatural baggage) has been called a mundivagant, or world traveler, and is known from most continents, but until now has not been seen in North Carolina. *Chenia*, like many mosses, bears no local common name, which is something of an artifact of the relative invisibility of bryophytes, but it has previously been reported from Alabama, Louisiana, California and New Mexico in the continental US. It has been found in Hawaii. It is likely to be found elsewhere in this country.

Chenia gets about with the help of several vegetative reproductive aids. Virtually every major structure associated with the species can be transported as an individual propagule. Leaves (about 2 mm in length) develop rhizoids (or tiny root-like structures) along their leaf midribs (also called costae) that can also give rise to plants, more leaves and more rhizoids. Just to make sure, so to speak, the rhizoids can reproduce asexually by producing tiny round balls of cells (called brood bodies) that can be easily transported and grow into additional plants miles from their origins. Think…trucks, ships, feet, paws and shovels. And, so it goes.

In addition to asexual or vegetative reproduction, many bryophytes, especially mosses also reproduce sexually. However, *Chenia* is not known to reproduce sexually in North America.

In our area this new guy on the block seems to associate with open areas where coarse sand and fine gravel or fill material composed of these particle sizes.

https://nc-biodiversity.com