

Garden Club of America Coastal Wetlands Scholarship Interim Report  
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Project: Taxonomy, population genetics, and status assessment of *Nuphar sagittifolia*

It was a busy summer in both the field and the lab for my project studying the taxonomy and population genetics of *Nuphar sagittifolia*. I visited 18 *Nuphar* populations in the Atlantic Coastal Plain to collect voucher specimens, photographs for morphological analysis, and leaf tissue for DNA extraction. My technician and I visited hundreds of bridge crossings and water bodies across North Carolina and South Carolina and documented 41 previously reported and 29 new *N. sagittifolia* occurrences. We also surveyed 7 segments of the Northeast Cape Fear, Black, Lumber, and Waccamaw Rivers to search for and map *N. sagittifolia*. The survey data collected this field season will serve as a baseline observation of the location, abundance, and health of *Nuphar sagittifolia* populations and enable future monitoring of this species, which is a candidate for federal listing.

In the lab, I screened microsatellite markers previously developed in *Nuphar japonica* to determine which could be used successfully in the *Nuphar sagittifolia* complex. Currently, six markers are amplifying well and I will continue to screen for additional loci. The fall semester will be focused on extracting DNA from tissue collected this summer and determining the genotype of all individuals. I will use the full dataset of genetic, morphological, and geographic observations to draw connections between genetic and morphological similarity, determine which populations should be considered true *Nuphar sagittifolia*, and assess the genetic diversity of *N. sagittifolia* populations to inform conservation decisions.