

Collector(s): Estuarine Monitoring Team (WaRO)

Locations and Date: Dances Bay on Little River, 7/2/2019

Reason Collected: Discolored water/suspected bloom

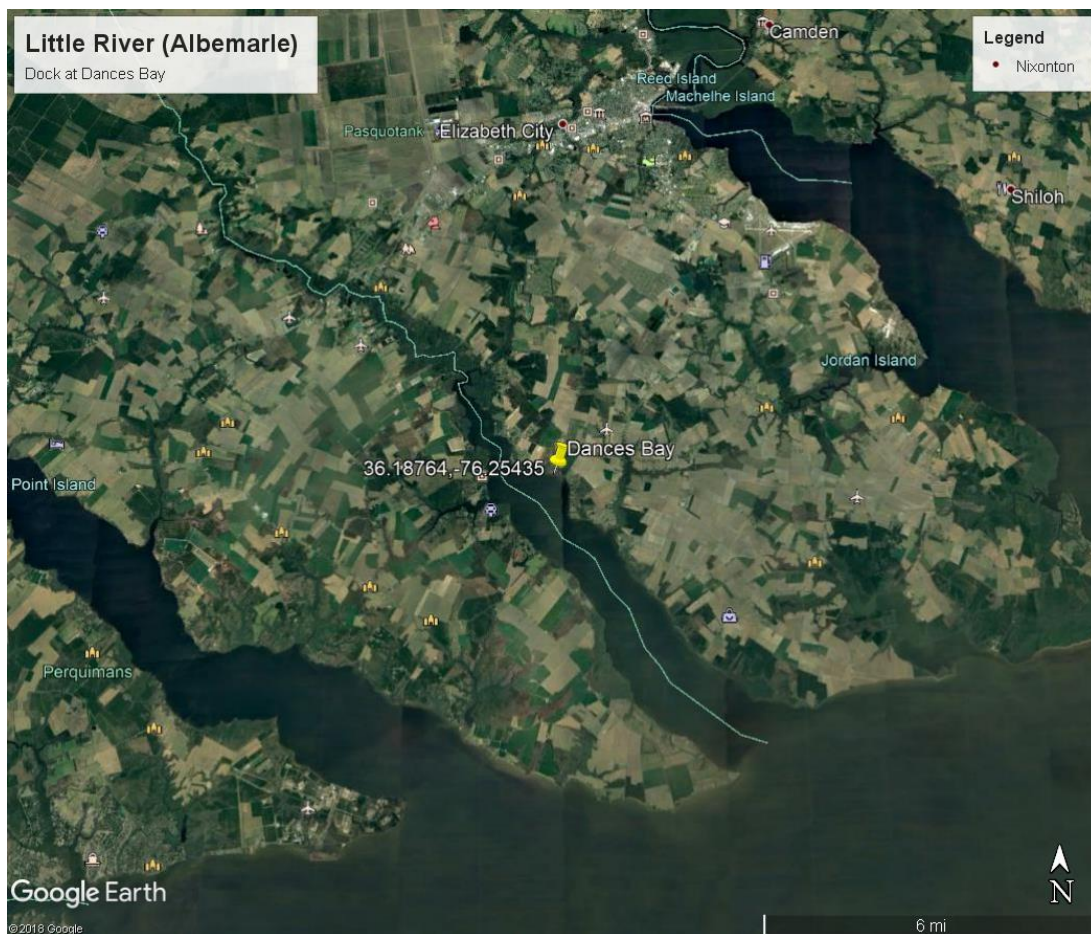


Figure 1: Dances Bay on Little River

Sample Information: The Estuarine Monitoring Team investigated an algal bloom in progress after receiving reports of green water at Dances Bay on the Little River (Figures 1 and 2).

Results of Analysis: This was a bloom of filamentous cyanobacteria including *Dolichospermum*, *Cylindrospermopsis*, and *Pseudanabaena* (Figures 3-5).

Physical data and algal results from the site can be found in Tables 1 and 2. DWR definitions of an algal bloom include dissolved oxygen concentrations at or above 9 mg/L (110% saturation), pH higher than 8. Additional DWR definitions of algal blooms include algal concentrations at or above 10,000 units/ml (unit density) or 5,000 mm³/m³ (biovolume). Physical and algal data confirmed the presence of an algal bloom (Tables 1 and 2).

Ecological Significance: The Chowan River and Albemarle Sound experienced cyanobacteria blooms during the summers of 2015-2018. *Dolichospermum*, *Cylindrospermopsis*, and *Pseudanabaena*, like most cyanobacteria, can grow quickly in summer when the daylight is more intense and temperatures are higher. Cyanobacteria are known to form blooms that discolor water and may cause taste and odor problems. Some cyanobacteria, such as *Dolichospermum* and *Cylindrospermopsis*, may produce cyanotoxins. These blooms are commonly referred to as harmful algal blooms (HABs) and can cause illnesses in humans and have been attributed to the death of pets and livestock. Fortunately, no human or animal illnesses have been attributed to HABs in NC.

Table 1: Physical parameters

Location	Time	Cond (μS/cm)	Temp (C°)	DO (mg/L)	pH (su)	Salinity (ppt)
Dances Bay	12:05 PM	341	30.5	16 (215%)	9.9	0.16

Table 1: Algal concentrations

Location	Dominant Algae	Cell density (cells/ml)	Unit density (units/ml)	Biovolume (mm ³ /m ³)
Dances Bay	<i>Dolichospermum</i> <i>Cylindrospermopsis</i>	1,587,339	124,894	45,324



Figure 2: Little River on July 2nd (courtesy R. Johnson)



Figures 3, 4, 5: *Dolichospermum*, *Cylindrospermopsis*, *Pseudanabaena*

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