

Collector(s): DWR Estuarine Monitoring Team (EMT)

Locations and Date: Bess Landing on Chowan River near Colerain

Reason Collected: Discolored water/suspected bloom

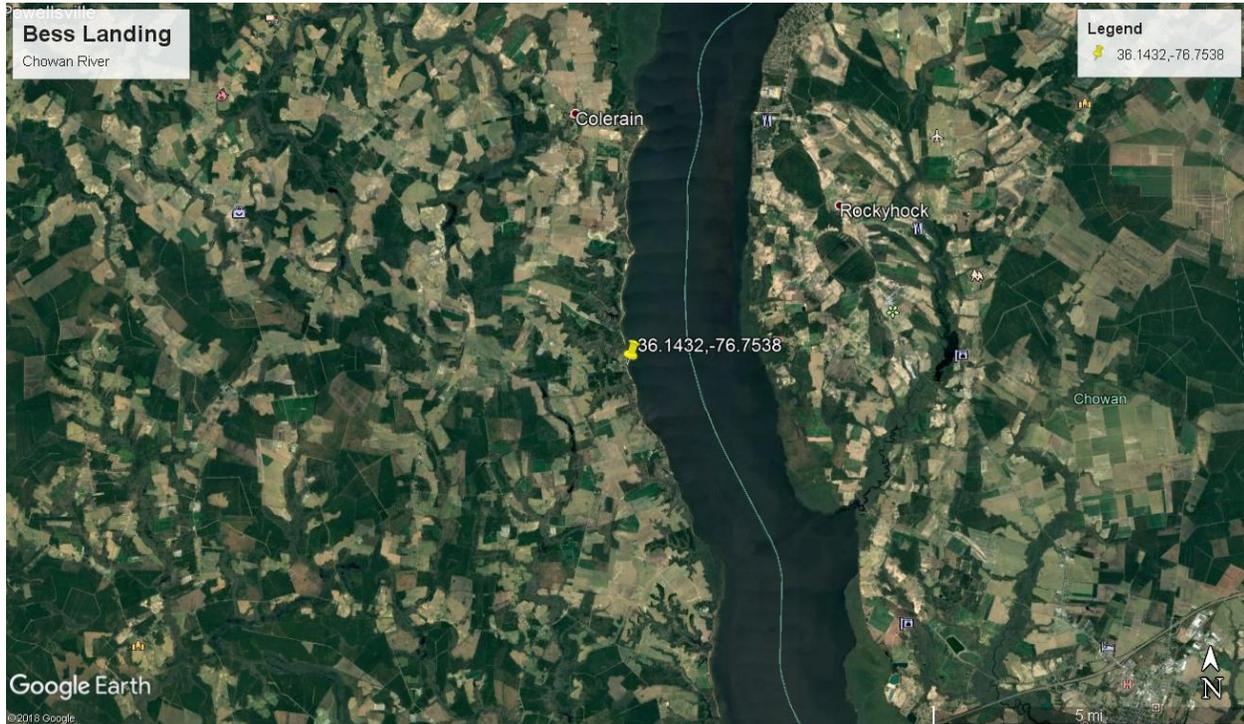


Figure 1: Bess Landing on Chowan River

Sample Information: The Estuarine Monitoring Team investigated an area with green flecks at Bess Landing on the Chowan River (Figure 1). While the bloom was not too noticeable during the investigation, it became very noticeable later (Figure 2).

Results of Analysis: This was a bloom of the cyanobacteria *Dolichospermum*, *Pseudanabaena*, and *Microcystis* (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 did not confirm the presence of a bloom during the time of the investigation, but an algal bloom did occur at the site (Figure 2).

Ecological Significance: The Chowan River and Albemarle Sound experienced cyanobacteria blooms during the summers of 2015-2018. Cyanobacteria and other types of algae 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 *Microcystis*, 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. No illnesses have been attributed to this bloom.

Table 1: Physical parameters

Location	Time	Cond (µS/cm)	Temp (C°)	DO (mg/L)	pH (su)	Salinity (ppt)
Bess Landing	12:30 PM	91	28	6.3 (79%)	6.5	0.04

Table 2: Algal concentrations

Location	Dominant Algae	Cell density (cells/ml)	Unit density (units/ml)	Biovolume (mm ³ /m ³)
Bess Landing	<i>Dolichospermum</i>	61,100	5,100	2,600



Figure 2: Bess Landing shortly after bloom sample collected (courtesy: K. Johnson)

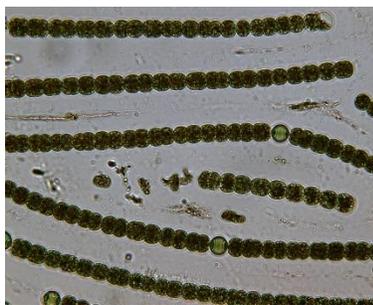


Figure 3: *Dolichospermum*

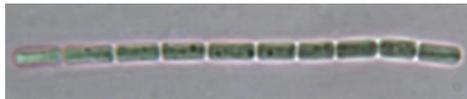


Figure 4: *Pseudanabaena*

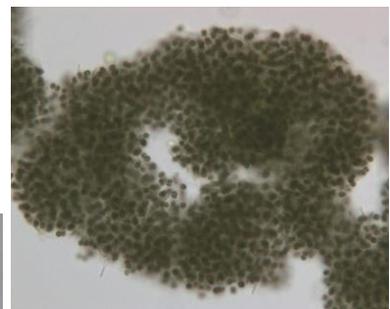


Figure 5: *Microcystis*

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