

Collector(s): Estuarine Monitoring Team (WaRO)

Locations and Date: Chowan River at Channel Marker 7 at Colerain (D8950000), 5/29/2019

Reason Collected: Discolored water/suspected bloom



Figure 1: Station D8950000

Sample Information: Green surface flecks were observed on the Chowan River at Station D8950000 (Figure 1) on May 29th during regular monitoring by the Estuarine Monitoring Team (EMT).

Results of Analysis: The dominant alga in the sample was *Dolichospermum spiroides* (Figure 2). *Dolichospermum* frequently bloomed on the Chowan during past summers.

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 data at the site investigated by the EMT confirm a bloom was in progress, but algal results did not quite meet the concentrations indicative of a bloom (Tables 1 and 2).

Ecological Significance: The Chowan River and Albemarle Sound experienced cyanobacteria blooms during the summers of 2015-2018. *Dolichospermum*, 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*, 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 at D8950000

Location	Time	Cond ($\mu\text{S/cm}$)	Temp ($^{\circ}\text{C}$)	DO (mg/L)	pH (su)
D8950000	12:10 PM	87	28.4	9.2 (119%)	8.5

Table 2. Algal densities and biovolume at D8950000

Location	Dominant Algae	Cell density (cells/ml)	Unit density (units/ml)	Biovolume (mm^3/m^3)
D8950000	<i>Dolichospermum</i>	65,800	4,900	4,800



Figure 2: *Dolichospermum spiroides*

Report prepared by:

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