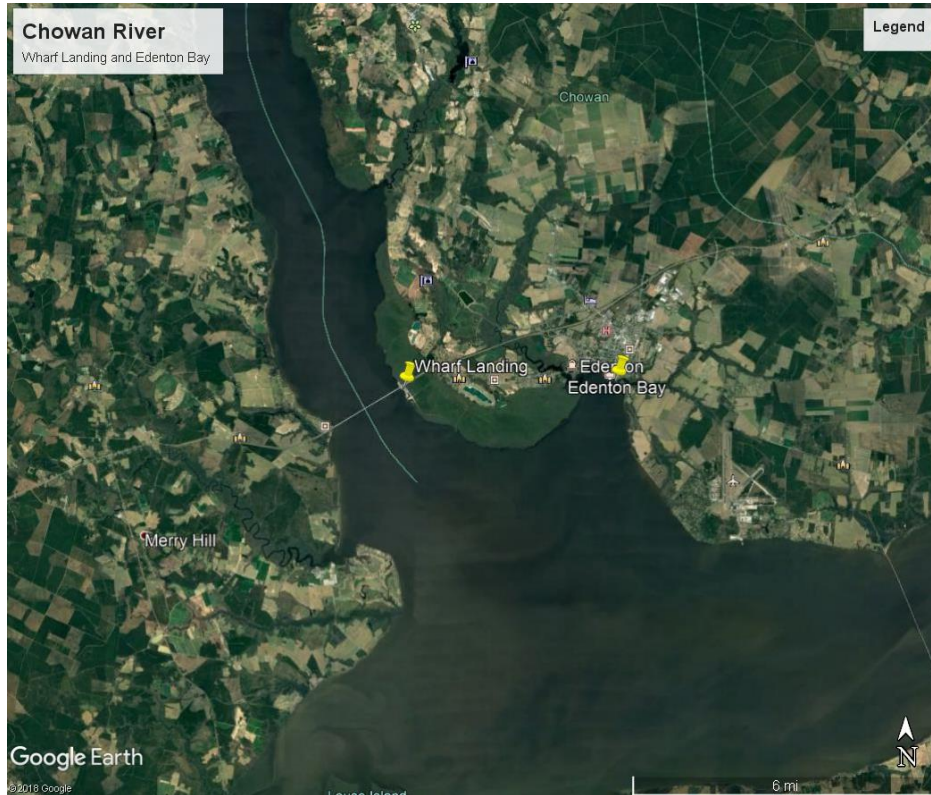


**Collector(s):** Estuarine Monitoring Team (WaRO)

**Locations and Date:** Chowan River at Wharf Landing and Edenton Bay, 8/7/2018

**Reason Collected:** Discolored water/suspected blooms



**Figure 1:** Location of blooms at Wharf Landing and Edenton Bay

**Sample Information:** The Estuarine Monitoring Team investigated two sites on the Chowan River on August 7<sup>th</sup> after receiving reports of suspected algal blooms (Figure 2).

**Results of Analysis:** The dominant alga in the samples was *Dolichospermum spiroides* (Figure 3) which has been blooming on the Chowan since June 20<sup>th</sup>. *Dolichospermum* frequently bloomed on the Chowan last summer.

Physical data and algal results from the sites 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 mm<sup>3</sup>/m<sup>3</sup> (biovolume). Physical data and algal results at the site investigated by the EMT confirm a bloom was in progress (Tables 1 and 2).

**Ecological Significance:** The Chowan River and Albemarle Sound experienced cyanobacteria blooms during the summers of 2015-2017. *Dolichospermum*, like most filamentous 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 on Chowan River

Location	Time	Cond ( $\mu\text{S}/\text{cm}$ )	Temp ( $^{\circ}\text{C}$ )	DO (mg/L)	pH (su)
Wharf Landing	10:48AM	242	32	9.4 (128%)	8.7
Edenton Bay	12:11 PM	305	32	10 (136%)	8.8

**Table 2.** Algal densities and biovolume on Chowan River

Location	Dominant Algae	Cell density (cells/ml)	Unit density (units/ml)	Biovolume ( $\text{mm}^3/\text{m}^3$ )
Wharf Landing	<i>Dolichospermum</i>	917,800	24,800	60,500
Edenton Bay	<i>Dolichospermum</i>	167,100	7,400	11,000



Figure 2: Bloom at Wharf Landing on August 7<sup>th</sup>



Figure 3: *Dolichospermum spiroides*

**Report prepared by:**

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