

Potentially Toxigenic (PTOX) Cyanobacteria Screen

Project: Lake Carroll Association

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<u>Sample ID</u>	<u>Site</u>	<u>Collected</u>
Lake Carroll	West Marina Open Water	10/25/17
Lake Carroll	East Marina Open Water	10/25/17
Lake Carroll	East Marina Scum	10/25/17

Method

One mL aliquots of the non-preserved samples were prepared using Sedgewick Rafter cells. Each sample was scanned at 100X for the presence of potentially toxigenic (PTOX) cyanobacteria using a Nikon Eclipse TS100 Inverted Microscope equipped with phase contrast optics. Higher magnification was used as necessary for identification and micrographs.

Results

Lake Carroll – W. Marina Open Water

Detritus and flagellated green algae (Chlorophyta) were observed. A single filament (per mL) of the PTOX cyanobacterium *Dolichospermum* sp. was observed.

Lake Carroll – E. Marina Open Water

Detritus and flagellated green algae (Chlorophyta) were observed. The PTOX cyanobacteria *Microcystis* sp., *Dolichospermum* sp., and *Aphanizomenon flos-aquae/lebahnii* were also observed.

Lake Carroll – E. Marina Scum

The sample was dominated by the PTOX cyanobacteria *Microcystis* spp. Other PTOX cyanobacteria observed were *Dolichospermum* spp. and *Aphanizomenon flos-aquae/lebahnii* at lower densities. The cyanobacterium *Limnorphis birgei* was also observed, however, is not currently a suspected toxin producer.

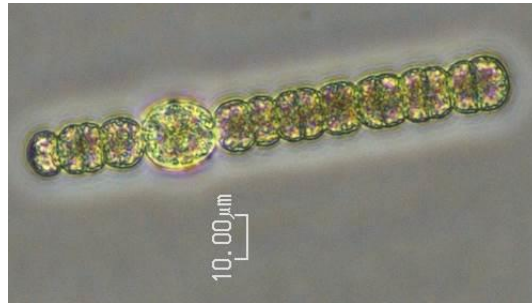
Potential toxin producing genera observed include:

Microcystins	Saxitoxins	Anatoxin-a	Cylindrospermopsin
<i>Microcystis</i>	<i>Dolichospermum</i>	<i>Dolichospermum</i>	<i>Dolichospermum</i>
<i>Dolichospermum</i>	<i>Aphanizomenon</i>	<i>Aphanizomenon</i>	<i>Aphanizomenon</i>

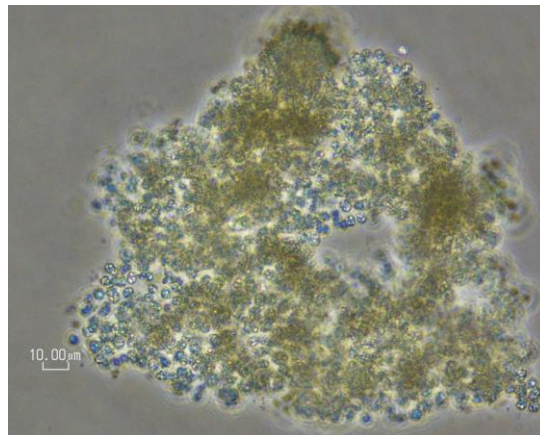
Recommendations:

Based on these observations and previous toxin data (MCs/NODs = ND to 575 ppb; STX/CYN/ANTX = ND from 9/20/17 collection date), toxin analysis for microcystins is currently recommended for all three samples.

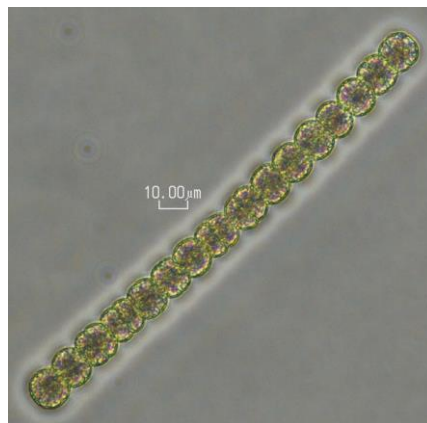
Micrographs



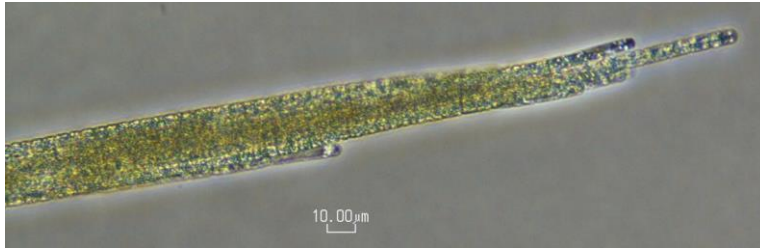
Dolichospermum sp. at 400X (W. Marina Open Water)



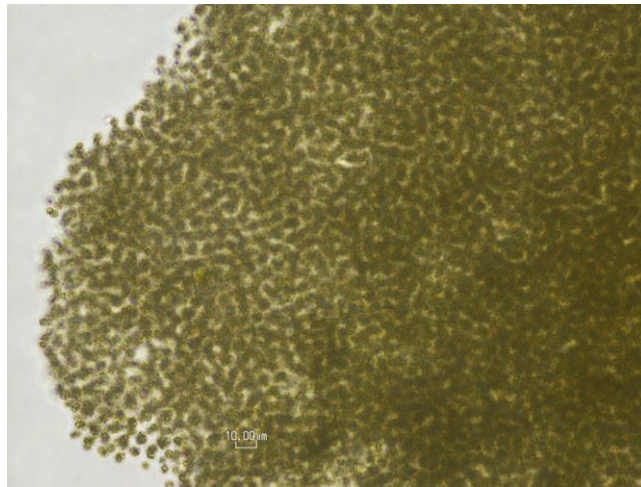
Microcystis sp. at 400X (E. Marina Open Water)



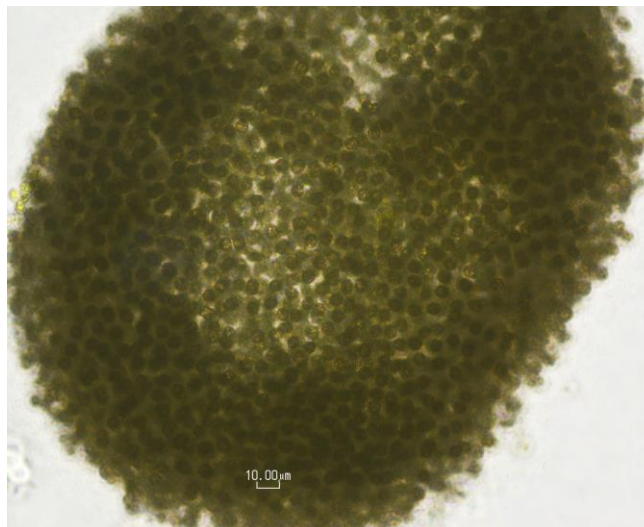
Dolichospermum sp. at 400X (E. Marina Open Water)



Aphanizomenon flos-aquae/lebahnii at 400X (E. Marina Open Water)



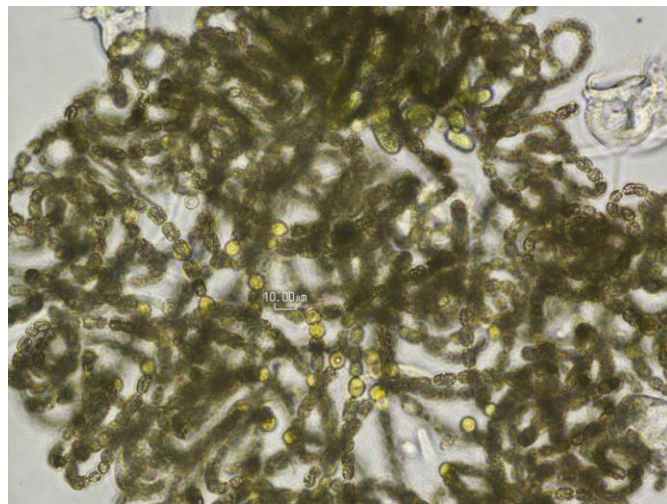
Microcystis sp. at 400X (E. Marina Scum)



Microcystis sp. at 400X (E. Marina Scum)



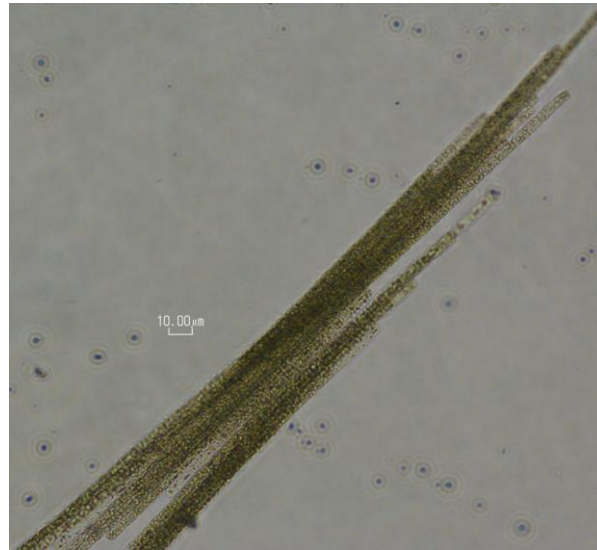
Microcystis wesenbergii at 400X (E. Marina Scum)



Dolichospermum sp. at 400X (E. Marina Scum)



Dolichospermum sp. at 400X (E. Marina Scum)



Aphanizomenon flos-aquae/lebahnii at 400X (E. Marina Scum)



Limnoraphis birgei at 400X (E. Marina Scum)

Submitted by:

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Date:

10/26/17

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