

# Harmful Algal Bloom Sample Collection Protocol for Virginia

## SITE INSPECTION:

- Record observations for each sample taken (location in body of water, color of bloom, presence of odor, scum, dead fish, proximity to culverts, docks, recreational beaches, ect.) Photos of conditions at the site are useful.
- Record environmental parameters including water temperature, water color, salinity, pH, dissolved oxygen, conductivity, and secchi depth).
- Record site name, latitude and longitude of sample location, and position of sample taken (ie: scum layer, sub surface layer (-.3 m), bottom).
- Record HAB Report Number if known.
- For each event, take two sub surface (-.3 m) samples (one untreated (live) and one preserved with Lugol's) from the area of the bloom. When there is a scum present, take a second collection by skimming the water's surface. The cells present at the surface exposed to air and sun are often degraded and not well suited for taxonomic enumeration, but can be informative to describe the bloom stage and conditions on site.

## PHYTOPLANKTON WATER SAMPLE COLLECTION:

*Preserved samples are for taxonomic enumerations. Untreated samples are for toxin analysis and are useful for further taxonomic inquiries.*

- For the preserved sample, collect 500 mL in a plastic bottle or cubitainer and administer Lugol's iodine solution at a ratio of 1:100. To achieve a ratio of 1:100, add approximately 1 mL of Lugol's to 100 mL of sample (5 mL for a 500 mL bottle) so that the final preserved sample color resembles weak tea.
- For the untreated sample, collect 250 mL in an Amber glass bottle. *Do not* add fixative.
- In tidal/shellfish waters or the mainstem, two 500mL cubitainers may take the place of the bottles described above, one untreated (live) and one fixed with Lugol's.
- Label each bottle clearly with location name, sampling site (ie: boat landing, scum or dock, -0.3m), date, treatment (ie: preserved or live).

## PHYTOPLANKTON SCUM:

*Some planktonic algae blooms form visible scums on the water surface.*

- For the scum sample, collect one 500 mL (preserved) in a plastic bottle or cubitainer and administer Lugol's iodine solution at a ratio of 1:100 and one 250mL (untreated/live) Amber glass bottle from the air-water interface. These samples should be accompanied by phytoplankton water samples collected at or nearby the same location.
- Label each sample clearly.

## SHIPPING:

*Shipping containers should be packed to prevent leakage or breakage and expedited overnight for delivery within 24 hours of sampling.*

- Samples should be kept cool with freezer packs, and the bottles protected from freezing by wrapping in newspaper or another barrier.
- All shipping containers should be lined with a garbage bag to avoid leakage and packed to avoid breakage.
- Include field data sheets or chain of custody forms in the shipping container protected from moisture or send a digital copy of the forms to [phytolab@odu.edu](mailto:phytolab@odu.edu).

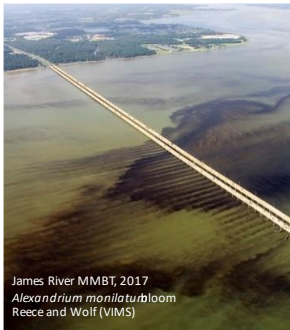


Woodstock Pond, 2017  
*Microcystis* bloom  
Frenz (DCR)

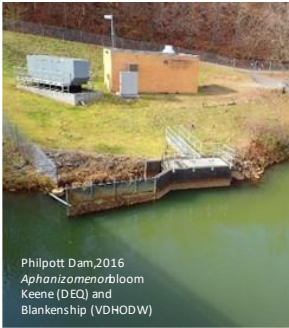


**ALGAE BLOOMS IN VA**

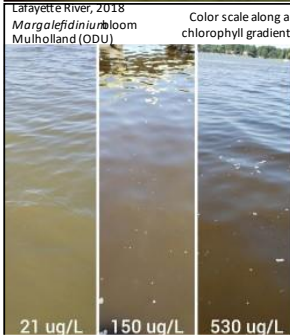
Lake Matthews, 2017  
*Anabaena/Dolichospermum*  
Harlan (DEQ)



James River MMBT, 2017  
*Alexandrium monilatum* bloom  
Reece and Wolf (VIMS)

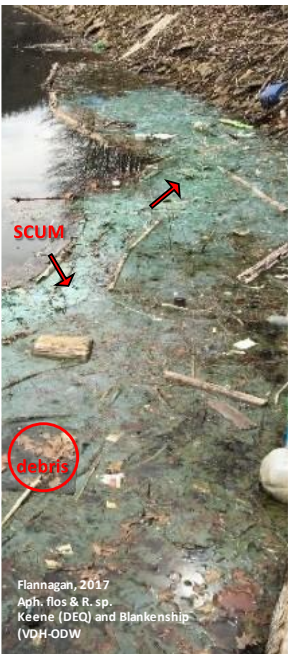


Philpott Dam, 2016  
*Aphanizomenon* bloom  
Keene (DEQ) and Blankenship (VDHODW)



Larayette River, 2018  
*Margalefidinium* bloom  
Mulholland (ODU)

21 ug/L    150 ug/L    530 ug/L



Flannagan, 2017  
*Aph. flos & R. sp.*  
Keene (DEQ) and Blankenship (VDH-ODW)



Lake Gaston, 2020  
*Microcystis*  
Baumen (NCext)



Twin Lakes SP, 2019  
*Dolichospermum*  
Frenz (DCR)

**SHIPPING ADDRESS**

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