How to Report Cladophora on Seneca Lake

Using the Survey123 Reporting Tool

Introduction

- Seneca Lake Pure Waters Association has received many calls about excess Cladophora along the lake shore in past years.
- The Great Lakes have also had excessive Cladophora.
  - The NYS Great Lakes Action Agenda goal 2 recognizes issues with nuisance algae such as Cladophora.
  - NYS DEC has a website with information NYS DEC Cladophora Website
- Pure Waters has adapted the DEC survey tool to Seneca Lake
  - Pure Waters Cladophora web page: https://senecalake.org/preserve-protect/monitoring-data-collection/cladophora/

Cladophora Research Project

- In addition to the monitoring survey Pure Waters is partnering with the Finger Lakes Institute (FLI) to conduct research related to excess Cladophora and cyanobacteria HABs
  - Weekly near-shore nutrient samples will be taken at 6 locations in the northern basin
  - Once a month, FLI will conduct surveys in the water near those locations to determine the extent of Cladophora growth on the substrate
  - These data will be correlated with weather and lake data to try and determine whether there a “hot spots” for Cladophora formation and where it washes up on shore

Preparing to Report Cladophora

- The survey is public and can be submitted either via a browser interface or through the Survey123 Field App
  - To use the browser, simply click on the link below (or on the website), select "*Open in browser*," and fill out the information
  - The Survey123 Field App is the same app used in the HAB Monitoring Program
    - If you wish to use the app and do not have it on your device yet, go to the Apple or Android App Store and download "*ArcGIS Survey123*"
    - The first time you want to fill out a report—USE A BROWSER ON YOUR DEVICE (i.e., phone) and click on the link below. Then select "*Open in the Survey123 field app*"—the form will download and the app will open. Fill out the information and send
    - Subsequent reports: open the Survey123 App, select "*continue without signing in*," then select the Seneca Lake Cladophora Survey 1 form
- Survey link: https://arcg.is/1rv4nD2

Location

- Location primarily uses your device GPS location
  - Press the map or location icon, the latitude and longitude should show in the windows
  - If the marker is not in the right location, manually move the map to the right location and hit the check mark
- Location is very important to get right and may be a little tricky at first
  - The Basin and Sector fields at the end of the report are automatically generated by the location coordinates

Extent of Cladophora on the Beach

- Four options that are somewhat subjective
  - None
  - Minimal
  - Moderate
  - Extensive
- We are gathering photos of examples of each with respect to Seneca Lake, the Lake Ontario pictures are not exactly what we see
  - See the website for more information as it becomes available

Condition of Cladophora on the Beach

- Four options
  - Fresh (green)
  - Dry or decaying (brown/black)
  - Cannot determine
  - Not Applicable (if none selected for extent)
- These are fairly self-explanitory

Strength of Odor

- Four options
  - None
  - Weak
  - Moderate
  - Strong
- Odor is an indication of decay and a common complaint
  - Subjective response is left to the reporter

Description of Cladophora in the Water

- Optional questions if the reporter has access into the wadable part of the lake
- Basically, the same response options as the beach questions

Photos

- We would like 2 photos, but there is an option for a third, if it would help
  - Photos allow us to review the bloom and make sure the data are consistent from report to report
- Photos can be taken while filling out the Survey123 field app or by selecting them from files
- Since photos are large, consider waiting until getting to WiFi before sending the report

Summary

- The Cladophora monitoring survey is based on the same methodology we have been using for years in the HABs Monitoring Program
- Both Cladophora and HABs rely on nutrients to form, and both likely depend on currents and wind direction to determine where they accumulate on shore
- This study is a first step to explore nutrient dynamics near shore and how that affects Cladophora and HAB growth