

Basis for the NJDEP 2020 HAB Alert Levels

NJDEP held a Microsoft Teams meeting on May 21 to explain the new HAB Alert Levels. Ernie Hofer and I attended that May 21 NJDEP meeting, which was by invite only. The session was simultaneous with NJDEP issuing a press release of the new HAB alert levels. By now most of you have likely seen the below NJDEP table for 2020 HAB Alert Tiers, which was published in many newspapers.

In 2019 there was some confusion about what level of precaution lake users should take when HAB is present. For example, NJDEP criteria deferred from NYSDEC criteria, which caused some confusion at Greenwood Lake as the lake is in both New Jersey and New York. Also, there were instances where different New Jersey state entities were working to different criteria resulting in conflicting communications.

NJDEP developed the 2020 HAB Alert Tiers, which is intended to standardize definitions and address the fact that the level of precaution to be taken should vary based upon the concentration of the toxin. The short version of the difference between the 2019 HAB tiers and the 2020 HAB tiers are as below:

1. In 2019, NJDEP had only two HAB tiers which were based upon:
 - a. Cell count threshold >20,000 cells/mL, and
 - b. Toxins Microcystins >3 µg/L, Cylindrospermopsin >8 µg/L or Anatoxin >27 µg/L.

The two tiers generated notices of 'Warning' (Suspected) or 'Danger' (Confirmed).

2. The 2020 HAB Alert Tiers establishes five separate alert tiers. NJDEP generated these alert levels by coordinating with other states, agencies, consultants and open NJDEP meetings. The alert levels are based upon the cell count and microcystin toxin levels and those respective levels are defined in the table. The five tiers are based upon risk to lake users and define protective actions. More detail can be found by reviewing the PowerPoint from the May 21 HAB session. The web page may be easier to read because of fine print and the PowerPoint provide more detail:

<https://www.state.nj.us/dep/hab/docs/Proposed%202020%20HAB%20Recreational%20Response%2005-21-20%20final%20LMcG.pdf>.

Note: The PowerPoint document is 30 pages in length. Readability and understanding of the NJDEP Chart is enhanced by referencing pages 17 – 21.

NJDEP reports that that no sampling for microcystins in New Jersey to date have exceeded 2000/ug/l, i.e. the Danger level.

As best we can tell the table does not, and cannot, reasonably address all scenarios. For example a person with a compromised immune system likely needs to be more cautious than the table suggests. Similarly, what impact might be expected from prolonged exposure to repeated HAB events, should such events occur?

We expect this will continue to evolve as we all learn more about HAB's.

Randall Sprague

2020 HAB ALERT TIERS

HAB ALERT LEVEL	CRITERIA	RECOMMENDATIONS
NONE	No HAB present or reported.	None
WATCH <i>Suspected or confirmed HAB with potential for allergenic and irritative health effects</i>	Suspected HAB based on visual assessment or screening test OR Lab confirmed cell counts between 20k – 40k cells/mL AND No known toxins above public health thresholds	Public Bathing Beaches Open (dependent upon local health authority evaluation and assessment) Waterbody Accessible ➤ Use caution during primary contact (e.g. swimming) and secondary (e.g. non-contact boating) recreational activities Do not ingest water (people/pets/livestock) Do not consume fish WATCH remains in effect.
ALERT <i>Confirmed HAB that requires greater observation due to increasing potential for toxin production</i> PUBLIC BATHING BEACHES INCREASE MONITORING	Lab confirmed cell counts between 40k – 80k cells/mL AND No known toxins above public health threshold	Public Bathing Beaches Open (dependent upon local health authority evaluation and assessment) and should observe and report changing bloom conditions Waterbody Accessible: ➤ Use caution during primary contact (e.g. swimming) and secondary (e.g. non-contact boating) recreational activities Do not ingest water (people/pets/livestock) Do not consume fish
ADVISORY <i>Confirmed HAB with moderate risk of adverse health effects and increased potential for toxins above public health thresholds</i>	Lab testing for toxins exceeds public health thresholds <u>OR</u> Lab confirmed cell counts above 80K cells/mL <u>OR</u> Field measurement evidence indicating HAB present and above guidance thresholds (e.g. phycocyanin readings)	Public Bathing Beaches Closed Waterbody Remains Accessible: ➤ Avoid primary contact recreation (e.g. swimming) ➤ Use caution for secondary contact recreation (e.g. boating without water contact) Do not ingest water (people/pets/livestock) Do not consume fish
WARNING <i>Confirmed HAB with high risk of adverse health effects due to high toxin levels</i>	Toxin (microcystin) 20 - 2000 µg/l AND/OR Additional evidence, including, expanding bloom, increasing toxin levels (i.e. duration, spatial extent or negative human or animal health impacts) indicates that additional recommendations are warranted	Public Bathing Beaches Closed Waterbody Remains Accessible: ➤ Avoid primary contact recreation (e.g. swimming) ➤ May recommend against secondary contact recreation (e.g. boating without water contact) with additional evidence Do not ingest water (people/pets/livestock) Do not consume fish
DANGER <i>Confirmed HAB with very high risk of adverse health effects due to very high toxin levels</i>	Toxin (microcystin) > 2000 µg/l AND/OR Additional evidence, including, expanding bloom, increasing toxin levels (i.e. duration, spatial extent or negative human or animal health impacts) indicates that additional recommendations are warranted	Closure of Public Bathing Beaches Possible closure of all or portions of waterbody and possible restrictions access to shoreline. Avoid primary contact recreation (e.g. swimming) May recommend against secondary contact recreation with additional evidence Do not ingest water (people/pets/livestock) Do not consume fish