Lake RMN Protocol Document.
General Lake Assessment (12/28/2022)

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Acknowledgements:
The document was written by Tetra Tech (Jen.Stamp@tetratech.com), with funding from EPA ORD CPHEA (EPA lead: Britta Bierwagen - Bierwagen.Britta@epa.gov). The protocols were developed through a collaborative process with Regional Monitoring Network (RMN) partners.

Disclaimers:
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Why do a general lake assessment survey?

Most lake monitoring programs perform some form of a general lake assessment, but survey questions vary across organizations, and few would meet the needs of the RMNs. To address this deficiency, we developed our own survey with two general components: 1) perception questions about aesthetics, recreational suitability, water clarity and algae levels; and 2) comments about activities (like boating and shoreline development) that field crews observe during their site visits. The perception questions are based on surveys that lake monitors have completed for many years (Smeltzer and Heiskary 1990).

The protocols call for performing the survey once per year with the timing coordinated regionally. The survey is intended to be quick (5-10 minutes) and is based on observations that field crews make during their site visit (crews are not being asked to go out of their way to do a comprehensive shoreline survey, etc.).

1 Protocols

The general lake assessment is completed once per year within the period July 24-August 7 (± 1 week). If a situation arises that prevents the survey from being performed during the coordinated time period, field crews perform it anyway, as close to these dates as possible (the surveys will still be used). It is based on observations that field crews make throughout their site visit, during which they will be traveling between the boat launch and the deepest point in the lake.

The survey is available as an online form:
https://forms.gle/7opWdnHEUxxhwPJr5

When completing the online survey:

- Make sure you hit the Submit button at the end, otherwise it won't be saved.
- You can't save, exit and come back in…you have to complete and submit the survey in the same session.

The survey can be completed in the field if you have internet access. If you don't have internet access in the field, print out and complete a 'hard copy' (paper) version, which can be found in Attachment A. Later, when you're back in a place with internet access, you can transfer the information from the hard copy to the online form.

If you have any problems with the online form, contact Jen Stamp (Jen.Stamp@tetratech.com; 802-839-8603).

Quality Assurance/Quality Control (QA/QC)
Some of the survey questions are subjective, which can introduce observer bias. To achieve greater consistency across observers, we recommend that more than one person complete the survey at least at a subset of lakes each year, and that the observers compare results and talk through differences. The goal is to get similar results regardless of the person conducting the assessment. Another way to reduce variability is to have the same person conduct the survey at a given lake each year. While this is a worthy goal, given the long-term nature of this project, more than one observer will be performing the assessments over time.

2 Equipment

The general assessment survey requires minimal equipment. If you have internet access and a laptop or smartphone in the field, you can complete the form in the field. Otherwise, you'll need to bring a print-out of the survey form, a pencil and a clipboard.

3 Data management

At this time, the data from the online survey will be compiled by Jen Stamp (Jen.Stamp@tetratech.com), who is providing RMN support through a contract with Britta Bierwagen from EPA ORD. Contact Jen if you have any problems with the online survey.

4 Literature Cited

Smeltzer, E. and S.A. Heiskary. 1990. Analysis and Applications of Lake User Survey Data. Lake and Reservoir Management 6(1): 109-118.

Attachment A

RMN General Lake Assessment (12/28/2022)

*required entry

RMN General Lake Assessment (12/28/2022)

Lake name and RMN Site ID *

Date *

Observer(s) & affiliation(s) *

Primary observer email address *

How many times have you visited this lake? *

- o Once or twice (low familiarity)
- o Three to five times (moderate familiarity)
- o Five or more times (high familiarity)

Perception

Select the answers that best describe your opinion about how suitable the lake is for recreation and aesthetic enjoyment at the time of your visit/survey

Recreational suitability/aesthetics *

- o Beautiful, could not be better
- o Very minor aesthetic problems; excellent for swimming, boating
- o Swimming and aesthetic enjoyment slightly impaired because of algae or turbidity levels
- o Desire to swim and level of enjoyment of the lake substantially reduced because of algae or turbidity levels (but boating is okay)
- o Swimming and aesthetic enjoyment of the lake nearly impossible because of algae or turbidity levels

Physical condition (water clarity, algae levels) *

- o Crystal clear water
- o Not quite crystal clear – a little algae or turbidity present/visible
- o Definite algae or turbidity – green, yellow or brown color apparent
- o High algae or turbidity levels with limited clarity and/or mild odor apparent
- o Severely high algae or turbidity levels with one or more of the following: massive floating scums on the lake or washed up on shore; strong, foul odor, fish kill (please note the number and types of fish in the comment field)
- o Naturally dark water not from algae (e.g., NJ Pine Barrens)
- o Other:

Observations

Please check boxes next to all the recreational activities that are allowed at the lake

- o Motor boats
- o Jet skis
- o Non-motorized boats (kayak, canoe, etc.)
- o Fishing
- o Swimming
- o Other:

Did you see evidence of any of the following during your site visit? (check all that apply)

- o Lakeshore development without vegetated buffers
- o Shoreline erosion
- o Sediment input from inlets
- o Dense aquatic plant growth
- o Other:

Describe any observed lakeshore development (residential, urban, campgrounds, marinas)

Describe any observed shoreline mods (docks, riprap)

Describe any observed agricultural activity

Describe any observed Harmful Algal Blooms

Describe any observed invasive species, either in the water or along the shoreline. Note whether they are new occurrences vs. established.

List observed wildlife species (at whatever level you desire; does not have to be comprehensive)

Please note any final observations that were not addressed in other parts of this survey.

[Submit]