#### **Citizens Statewide Lake Assessment Program**

#### Introduction

The Citizens Statewide Lake Assessment Program (CSLAP) is a volunteer lake monitoring and education program managed by DEC and the New York State Federation of Lake Associations (NYSFOLA). Lake information from a variety of sources, including CSLAP volunteers, is combined to create a scorecard for each CSLAP lake.

The purpose of the scorecard is to provide a quick and simple summary of sampling results for:

- water quality conditions
- biological health
- lake perception
- lake uses

The condition of each lake characteristic is represented by a color scale:



No color indicates the condition is not known due to insufficient data.

#### How information is turned into scores

CSLAP volunteers collect valuable lake water quality data using accepted scientific methods to evaluate nutrient enrichment, aquatic weed and algae growth, general lake conditions, and the recreational quality of a lake.

Water quality data is grouped and assigned scores related to the "health" (good or poor) of the lake. The scoring system is based on water quality standards, scientific principles and statistical analysis.

#### Tips for interpreting scorecard information

Each section of the scorecard includes a table identifying and describing lake characteristics and generally explains what they tell us about the lake's health. This table can be used to help interpret scorecard results.

#### **Limitations of the information**

Water quality assessments and summaries of lake perception provided in this scorecard are based on information collected by CSLAP, and could be different from assessments and summaries based on information collected by other sources.

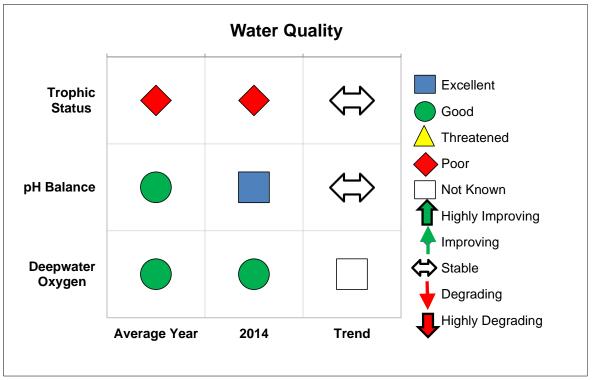
Trend information (the positive or negative direction of lake health over time) is not available for every lake characteristic. Many years of data are needed to accurately assess trends. Trends are evaluated using statistical methods that are based on annual measurements. These methods separate short-term changes from long-term patterns, meaning a change from normal conditions in any one year may not represent a trend.

Biological health evaluations come from a variety of sources, including CSLAP. These evaluations will change as CSLAP biological data continues to be evaluated and as additional non-CSLAP information is provided to DEC and incorporated into the database.

Lake use assessments are made using state water quality standards and guidance values for a variety of water quality and use indicators, not just CSLAP data. Lake use assessments based solely on CSLAP data are incomplete.

#### **Water Quality Assessment**

Water quality assessments are based on data collected from the deepest part of the lake every other week, for 15 weeks, from late spring through early fall. The data is used to evaluate a number of lake conditions, including algae growth (productivity or trophic status), pH and deepwater dissolved oxygen levels. There is not enough data to identify a trend in the deepwater oxygen levels for any CSLAP lake.



<sup>\*</sup>All years of CSLAP data collection for the lake except those for which data was not available.

The following data is collected and analyzed to determine the water quality score.

Water quality characteristic	Score	Description of characteristic	What it means
	Total Phosphorus (TP)	TP is measured because it is an important nutrient that often controls the growth of algae and rooted plants.	Too much phosphorus can harm aquatic life, water supplies, and recreational uses by causing excessive algae growth.
Trophic Status	Chlorophyll a	Chlorophyll $a$ is measured to estimate the amount of algae in a lake.	The amount of chlorophyll $a$ is usually closely related to the amount of phosphorus and can affect water clarity.
	Secchi Disk	This is a device to measure how far down into the water you can see.	Water clarity is a strong indicator of the public's opinion of lake conditions.
	рН	Water pH is measured to determine its acidity or alkalinity.	Values between 6 and 9 support most types of plant and animal life.
pH Balance	Conductivity	Conductivity is measured to estimate the amount of dissolved and suspended solids in water, including salts and organic material.	High conductivity values may be related to geology or land use practices and can indicate susceptibility to changes in pH.
Deepwater Dissolved Oxygen	Phosphorus, ammonia, nitrite, iron, manganese, and arsenic	Dissolved oxygen (DO) is not measured directly, but can be inferred from the levels of certain chemicals in water samples collected near the lake bottom.	Dissolved oxygen is critical for the ecological balance of lakes. Low DO in bottom waters can affect the survival of fish and lake organisms and cause chemical changes in lakes.

#### The water quality scores for each water quality characteristic are determined by the following:

Water quality characteristic	Score	Criteria Score Elements	How Criteria Are Used to Determine Score
	Excellent	Average value for each trophic indicator (water clarity, chlorophyll a, total phosphorus) assigned score	Trophic score = 8 or 9 (two of three trophic indicators = oligotrophic, other is mesotrophic)
Trophic Status	Good		Trophic score = 6 or 7 (at least two trophic indicators = mesotrophic or "higher")
	Threatened	of 3 if oligotrophic <sup>+</sup> , 2 if mesotrophic <sup>+</sup> , 1 if eutrophic <sup>+</sup>	Trophic score = 4 or 5 (at least one trophic indicator = mesotrophic or "higher")
	Poor		Trophic score = 3 (all trophic indicators = "eutrophic")
	Excellent	Average pH is evaluated against	pH between 7.5 and 8.5
	Good	state water quality standards	pH between 7 and 7.5
pH Balance	Threatened	(should be above 6.5 and below 8.5) and average conductivity evaluated	pH above 8.5, pH between 6.5 and 7, or conductivity < 50 ug/l
	Poor	to determine if low buffering capacity against future pH change	pH < 6.5
	Excellent	Deepwater ammonia and	Actual DO data indicating fully oxygenated conditions in stratified lakes to lake bottom
Deepwater	Good	phosphorus levels are compared to surface readings, and assigned a	All shallow lakes assumed to be good absent data; deepwater scores = 1
Dissolved Oxygen	Threatened	score of 3 if bottom readings are >10x surface readings and a score	Deepwater NH3 score + Deepwater TP score >3 or actual DO data indicating hypoxic conditions
	Poor	of 2 if bottom readings are >5x surface readings	Deepwater NH3 score = 3 or actual DO data indicating anoxic conditions
	Not known		No deepwater O <sub>2</sub> or indicator data in stratified lake

<sup>+</sup> trophic designations-

oligotrophic = water clarity > 5 m, chlorophyll a < 2 ug/l, total phosphorus < 10 ug/l mesotrophic = water clarity 2-5 m, chlorophyll a 2-8 ug/l, total phosphorus = 10-20 ug/l eutrophic = water clarity < 2 m, chlorophyll a > 8 ug/l, total phosphorus > 20 ug/l

# The water quality trends for each water quality characteristic and measure of lake perception are determined by the following:

Highly Improving: linear regression correlation coefficient ( $R^2$ ) > 0.5 and p value < 0.01, with trend toward

higher "score"

Improving:  $R^2 > 0.33$  and p value < 0.05, or  $R^2 > 0.5$  and p value < 0.05, or  $R^2 > 0.33$  and p value < 0.01,

with trend toward higher "score"

Stable: neither linear regression nor p value in statistically significant ranges as defined above

Degrading:  $R^2 > 0.33$  and p value < 0.05, or  $R^2 > 0.5$  and p value < 0.05, or  $R^2 > 0.33$  and p value < 0.01,

with trend toward lower "score"

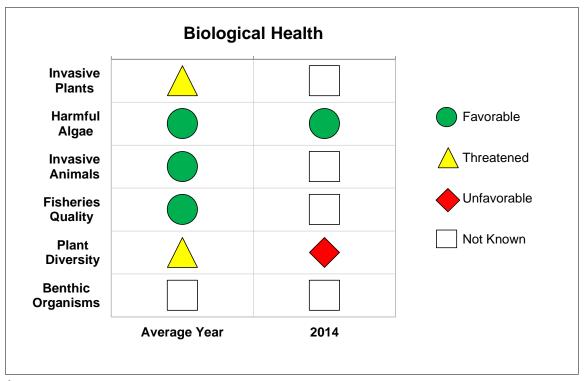
Highly Degrading:  $R^2 > 0.5$  and p value < 0.01, with trend toward lower "score"

#### **Citizens Statewide Lake Assessment Program**

#### **Biological Health**

Biological health of lakes can be evaluated in a number of ways. For CSLAP lakes, biological health evaluations are based on the presence of invasive plants, the type and number of blue-green harmful algal blooms, the presence of invasive animals (zebra mussels, spiny waterflea, etc.), the types of fish, aquatic plant diversity, and the number of pollution sensitive aquatic insects.

Biotic indices have been developed to evaluate a few biological health characteristics. Biotic indices are used to compare the biological community of the lake being sampled to the biological community of a known high-quality lake. (Data to support biological health assessments is not available for all CSLAP lakes.)



<sup>\*</sup> All years of CSLAP data collection for the lake except those for which data was not available.

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The following information is used to determine biological health scores.

Biological Health Characteristic	Description of characteristic	What it means
Invasive Plants	CSLAP volunteers survey lakes for nuisance, non-native plants (water chestnut, Eurasian water milfoil, etc.).	Abundant invasive plants can crowd out native and protected plants, create quality problems, and interfere with recreation. "Unfavorable" means at least one invasive plant species has been found. "Threatened" lakes are geographically close to an "infected" lake, or have water quality conditions that put them at higher risk for species invasion.
Harmful Algae	DEC and other biologists screen water samples for blue-green algae cell pigments and also test them for algal toxins.	Harmful algae can reduce oxygen levels and may cause harm to people recreating on the lake. "Unfavorable" means algal toxin readings are unsafe for water recreation; "threatened" means readings are approaching unsafe for water recreation.
Invasive Animals	DEC and other biologists survey lakes for nuisance, non-native animals (zebra mussels, spiny water flea, etc.).	Abundant invasive animals can harm native plant and animal species, influence the likelihood of algal blooms, and interfere with recreation. "Unfavorable" means at least one invasive animal has been found. "Threatened" lakes are geographically close to an "infected" lake, or have water quality conditions that put them at higher risk for species invasion.
Fisheries Quality	DEC and other fisheries biologists measure the length and weight of various species in a lake's fish community and conduct other measures of the health of the fisheries community.	Better fisheries quality indicates the lake has sufficient food resources and habitat to support its fish community. Several "biotic indices" are used to evaluate fish community quality.
Plant Diversity	CSLAP volunteers, academic researchers and consultants survey lakes for the number and types of aquatic plants.	Higher plant diversity indicates a more natural environment and helps prevent invasive species from taking over a lake. "Floristic quality indices" are used to evaluate plant communities.
Benthic Organisms	DEC and other biologists count and identify the types of bottom living (benthic) aquatic insects in a lake.	More pollution sensitive (intolerant) aquatic insects in a lake usually indicate good water quality and suitable habitat. "Biotic indices" are used to evaluate benthic communities.

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### The biological health scores for each biological health characteristic are determined by the following:

Water quality characteristic	Score	Criteria Score Elements	How Criteria Are Used to Determine Score
Invasive Plants	Favorable	A	No evidence of invasive/exotic aquatic plants
	Threatened	Aquatic plant surveys are conducted by CSLAP volunteers or by other	Invasive plants found in nearby (<10 miles away) lakes or public launch is found on lake
	Unfavorable	organizations; invasive plants identified	Invasive/exotic aquatic plants found in lake
	Not Known	by plant expert	No aquatic plant surveys in lake (this year)
	Favorable		All data show algae, phycocyanin and toxin levels below DEC bloom criteria <sup>+</sup>
Harmful Algae	Threatened	Harmful algae bloom (HAB) sampling conducted in open water and along shoreline; total algae, algae species,	Fluoroprobe or toxin levels exceed DEC threatened# criteria; phycocyanin levels exceed DEC bloom criteria, or visual evidence of blooms
	Unfavorable	phycocyanin (blue green pigment) and algal toxins analyzed in samples	Fluoroprobe or toxin levels exceed DEC bloom criteria in open water or shoreline
	Not Known		No HAB data available for lake
	Favorable	Invasive animal (primarily zebra or quagga mussel) surveys are conducted on limited basis in CSLAP lakes; other	No reports of invasive/exotic aquatic animals and no clear threats exist
Invasive Animals	Threatened		Invasive animals found in nearby (<25 miles away) waterbodies AND public launch is found on lake, or calcium levels > 20 mg/l
	Unfavorable	AIS animals reported through	Invasive/exotic aquatic animals found in lake
	Not Known	iMapInvasives	No information to evaluate presence of exotic animals
	Favorable	New York does not (yet) have a fish	Fish IBI > 60 (= "good" and "excellent")
Fisheries	Threatened	index for biotic integrity (IBI); for lakes	Fish IBI between 40 and 60 (= "fair")
Quality	Unfavorable	with fishery survey data, Minnesota Fish	Fish IBI < 40 (= "poor")
	Not Known	IBI is used to evaluate fisheries quality	No fisheries data
	Favorable	New York has not yet developed a	mFQI > 5 (= "good" quality), based on # genera
	Threatened	floristic quality index (FQI); for lakes with	mFQI = 3-8 (= "fair" quality), based on # genera
Plant Diversity	Unfavorable	detailed plant survey data, a modified	mFQI < 3 (= "poor" quality), based on # genera
Traine Diversity	Not Known	version of the Wisconsin FQI and Florida aquatic plant designations are used for evaluating aquatic floristic quality	Insufficient plant survey data to evaluate
	Favorable	New York has not yet developed a	IBI > 10-15 (based on # genera)
Benthic	Threatened	macroinvertebrate IBI; for lakes with	IBI between 8 and 15 (based on # genera)
Organisms	Unfavorable	detailed macroinvertebrate survey data,	IBI < 8
Organisitis	Not Known	Vermont IBI is used to evaluate benthic organism quality	Insufficient macroinvertebrate data to evaluate benthic organisms quality

+ DEC bloom criteria- fluoroprobe blue green algae chlorophyll a = 30 ug/l

phycocyanin = 200 units

algal toxins- microcystin-LR = 20 ug/l ("high toxins") along shoreline, = 10 ug/l in open water

+ DEC threatened criteria- fluoroprobe blue green algae chlorophyll a = 10 ug/l

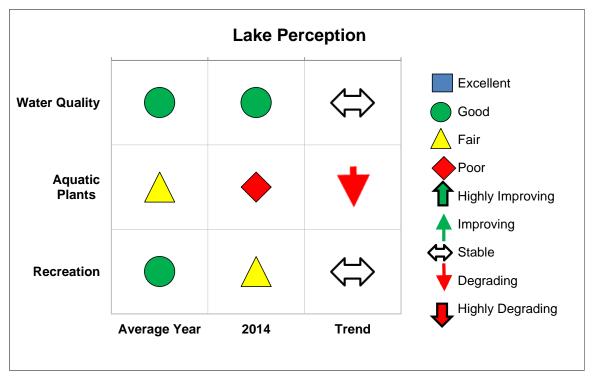
algal toxins- microcystin-LR = 4 ug/l along shoreline or in open water

#### **Citizens Statewide Lake Assessment Program**

#### **Lake Perception**

Lake perception scores are based on the visual observations of CSLAP volunteers who answer questions on the Field Observation Form (http://www.dec.ny.gov/docs/water\_pdf/cslapsamobs.pdf) completed during sampling. The questions ask the volunteer to determine their perceptions of how clear the water looks, the abundance of aquatic plants, conditions affecting current recreational use, and the overall recreational quality of the lake.

Visual observations are very closely connected to measured water quality conditions. This information is helpful to lake managers in deciding on nutrient criteria, or the amount of nutrients that can flow into a lake without compromising its water quality. For New York State lakes, perception data collected by CSLAP volunteers is critical to the development of nutrient criteria (defining "how much is too much") and has been consistently collected by CSLAP volunteers since 1992.



<sup>\*</sup> All years of CSLAP data collection for the lake except those for which data was not available.

The following information is used to determine the lake perception scores.

Lake Perception Characteristic	Description of characteristic	What it means
Water Quality	Asks the user: How clear does the water look today?	Clearer water usually indicates lower nutrient levels.
Aquatic Plants	Asks the user: How abundant are aquatic plants where people are boating and swimming today?	Lower abundances of aquatic plants usually provide proper ecological balance and are less likely to contribute to recreational use problems, although the absence of plants can also lead to lake problems. Lakes with the most favorable assessments have some plants, but not too many plants.
Recreation	Asks the user: What is your opinion of the recreational quality of the lake? What factors affect your perception of the lake?	Users' perceptions are associated with water quality conditions and aquatic plant coverage. Positive responses usually indicate good water quality and little to no surface plant coverage. Negative responses are usually associated with poor water quality and/or invasive plants.

#### **Citizens Statewide Lake Assessment Program**

#### The lake perception scores for each lake perception characteristic are determined by the following:

Lake perception characteristic	Score	Criteria Score Elements	How Criteria Are Used to Determine Score
	Excellent	Water quality perception is evaluated on a 5 point scale during each CSLAP sampling	Average value < 1.5
Water Quality	Good	session, ranging from "crystal clear" (=1) to	Average value >1.5 and <2.5
	Fair	"severely high algae levels" (=5); average	Average value >2.5 and <3.5
	Poor	values are computed	Average value >3.5
	Excellent	Aquatic plant coverage is evaluated on a 5	Average value >2 and <2.5
	Good	point scale during each CSLAP sampling	Average value >1.5 and < 2 OR > 2.5 and <3
Aquatic Plants	Fair	session, ranging from "not visible at lake	Average value >3 and <3.5 OR <1.5
Aquatic Flairts	Poor	surface" (=1) to "plants densely cover surface except in deepest areas" (=5); average values are computed	Average value > 3.5
	Excellent	Recreational conditions are evaluated on a	Average value < 1.5
	Good	5 point scale during each CSLAP sampling	Average value >1.5 and <2.5
Recreation	Fair	session, ranging from "beautifulcould not	Average value >2.5 and <3.5
	Poor	be nicer" (=1) to "lake not usable" (=5); average values are computed	Average value >3.5

<sup>+</sup> lake assessments-

water quality = 1 = crystal clear, 2 = not quite crystal clear, 3 = definite algae greenness, 4 = high algae levels, 5 = severely high algae levels

**aquatic plants** = 1 = no plants visible, 2 = plants below surface, 3 = plants at surface, 4 = plants dense at surface, 5 = surface plant coverage

recreation = 1 = could not be nicer, 2 = excellent, 3 = slightly impaired, 4 = substantially impaired, 5 = lake not usable

# The water quality trends for each water quality characteristic and measure of lake perception are determined by the following:

Highly Improving: linear regression correlation coefficient ( $R^2$ ) > 0.5 and p value < 0.01, with trend toward

higher "score"

Improving:  $R^2 > 0.33$  and p value < 0.05, or  $R^2 > 0.5$  and p value < 0.05, or  $R^2 > 0.33$  and p value < 0.01,

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Stable: neither linear regression nor p value in statistically significant ranges as defined above

Degrading:  $R^2 > 0.33$  and p value < 0.05, or  $R^2 > 0.5$  and p value < 0.05, or  $R^2 > 0.33$  and p value < 0.01,

with trend toward lower "score"

Highly Degrading:  $R^2 > 0.5$  and p value < 0.01, with trend toward lower "score"

#### **Lake Uses**

Lake uses are defined as the best uses for a lake (drinking water, swimming, etc.) as determined by several factors. Lake uses are identified using CSLAP water quality, lake perception and biological assessment information to evaluate where a lake fits in the state Water Quality Standards and Classification system (see overview below).

Each lake use is scored based on the following assessment categories, using assessment methodology (<a href="http://www.dec.ny.gov/chemical/23846.html">http://www.dec.ny.gov/chemical/23846.html</a>) established by DEC to evaluate impacts to lake uses:

- **Supported** no evidence of impacts to lake use;
- **Threatened** no evidence of impacts to lake use, but some factor threatens this use (for example, changing water quality, conditions that are nearing impact levels, land-use changes, etc.);
- Stressed- occasional or slight impacts to lake use;
- Impaired- frequent or persistent conditions limit or restrict lake use; and
- **Precluded** conditions prevent lake use. This category is uncommon in NYS (and CSLAP) lakes and is not included in the legend for most lake-use scorecard assessments.

		Lake Us	se		
Potable Water				Not applicable	
Swimming	<b></b>		<b></b>	Algae levels	Supported
Boating / Fishing				No impacts	Threatened  Stressed
Aquatic Life				Few plants	Impaired
Aesthetics				Algae levels	Not Known
Fish Consumption				Not applicable	
	PWL	Average Year	2014	Primary issue	
Consumption	PWL	Average Year	2014		

<sup>\*</sup> All years of CSLAP data collection for the lake except those for which data was not available.

# **Overview of the typical water quality classification and their best uses.** For more information visit www.dec.ny.gov/regs/4592.html#15990

Best use	Other uses	Water Quality Classification
Drinking	Swimming, fishing, and fish, shellfish and wildlife reproduction and survival	Class AA & A
Swimming	Fishing, and fish, shellfish and wildlife reproduction and survival	Class B
Fishing	Swimming, and fish, shellfish and wildlife reproduction and survival	Class C
Fishing	Swimming, and fish, shellfish, and wildlife survival	Class D

#### The following information is used to determine the condition of lake uses.

Lake Use	Description of characteristic	How this relates to CSLAP
Potable Water	The lake is used for drinking water. Only Class AA and A lakes have been approved for this use.	CSLAP data is not intended to assess the condition of potable water. Other state and local monitoring programs better address this use. However, some CSLAP parameters–chlorophyll <i>a</i> , ammonia, arsenic, iron, manganese, algal toxins–indicate potential impacts to potability.
Swimming	The lake is used for swimming and contact recreation. Even though some lakes are not classified for this use, all CSLAP lakes should support this use consistent with the federal goal to make all lakes "swimmable."	Several CSLAP sampling indicators—water clarity, chlorophyll <i>a</i> , algal toxins, lake perception—can be used to assess swimming conditions.
Boating/Fishing	The lake is used for boating, fishing and non- contact recreation. Even though some lakes are not classified for this use, all CSLAP lakes should support this use, consistent with the federal goal to make all lakes "fishable."	Non-contact recreation is evaluated using the lake perception data (visual observations) and aquatic plant surveys.
Aquatic Life	The lake is used by aquatic life. This is not an official "use" designated by New York State, but water quality standards and other criteria are adopted to protect aquatic life.	Aquatic life impacts can be evaluated by a number of CSLAP indicators, including pH, dissolved oxygen, and the presence of invasive species.
Aesthetics	The lake is used for visual enjoyment or the visual beauty of the lake. This is not an official "use" designated by New York State, but water quality standards and other criteria are adopted to protect aesthetics.	Lake aesthetics can be impacted by a number of factors, including algal blooms, nuisance weeds, or simply reports that "the lake looks bad," all of which are evaluated in CSLAP.
Fish Consumption	The lake is used for consumption of fish. All lakes are assumed to support this use unless otherwise indicated.	CSLAP does not collect data or information to evaluate fish consumption. All CSLAP lakes are evaluated against the New York State Department of Health: Health Advice on Eating Fish You Catch (http://www.health.ny.gov/environmental/outdoors/fish/health_advisories/).

For many CSLAP lakes, some of the lakes designated uses have previously been evaluated; a summary of these assessments can be found on the DEC Priority Waterbody List (PWL) developed for each of the 17 major drainage basins in the state. These can be found at <a href="http://www.dec.ny.gov/chemical/23846.html">http://www.dec.ny.gov/chemical/23846.html</a>. For some lakes, these are derived from historical assessments of CSLAP or other water quality data, while for others, no PWL assessments are yet available. The "rules" for these assessments are cited in the state Consolidated Assessment and Listing Methodology (CALM) (<a href="http://www.dec.ny.gov/chemical/23846.html">http://www.dec.ny.gov/chemical/23846.html</a>) have changed several times over the last decade, and the CALM document continues to be updated as new assessment tools are evaluated and adopted. The first column of the scorecard reflects the most recent PWL assessment, if available, for each CSLAP waterbody. Non CSLAP data, including "institutional" data (treated water data, bacterial data, consumer confidence report (CCR) summaries, and need for enhanced treatment) may be used for PWL assessments, but are not summarized here.

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The lake use scores for each lake use characteristic are determined by the following:

Lake Use Score		Criteria Score Elements	<b>How Criteria Are Used to Determine</b>	
Lake USE	Score	Criteria Score Liements	Score	
	Supported		No evidence of any criteria violations (see below)	
	Threatened	Surface water chlorophyll a and HABs	Avg hypolimnetic $NH_4 > 1$ , Fe > 0.5, As > 0.3, or	
	Tilleaterieu	data, and deepwater metals data are	Mn >1; avg open water MC-LR > 0.5	
Potable Water	Stressed	used to evaluate potable water use.	avg hypolimnetic $NH_4 > 2$ , Fe > 1 or Mn >1; avg	
i Otable Water	Silesseu		open water MC-LR > 1,	
	Impaired	Waterbodies not classified as potable	Avg chl.a > proposed NNC,, or hypolimnetic	
	Ппрапец	water supplies cited as "not known"	arsenic > 10 ug/l	
	Not known		No chlorophyll or deepwater nutrient data	
	Supported		No evidence of any criteria violations (see below)	
			Avg TP > proposed NNC; >25% slightly impaired	
	Threatened	Surface water chlorophyll a and HABs	frequency recreation AND > 10% poor clarity	
		data, and lake perception data are used	triggering slight impairment	
		to evaluate potable water use.	>10% Chl.a samples > proposed NNC; or >10%	
	Stressed		water clarity readings < proposed NNC; or single	
Swimming		Swimming assessments included here	shoreline bloom MC-LR > 20; or open BG Chl >	
		reference only "contact recreation" in	30	
		the PWL; "public bathing" is evaluated	Avg chl.a > proposed NNC; or open MC-LR > 20	
	Impaired	with bacteria and DOH beach data and	ug/l or avg water clarity < proposed NNC; or	
	'	is not included here	multiple shoreline MC-LR > 20 and shore BG Chl	
	Not be seen	_	> 30	
	Not known		No chlorophyll, clarity, HAB or perception data	
	Supported	Aquatic plant coverage, as assessed via lake perception surveys, and present of	No evidence of any criteria violations (see below)	
	Threatened		>25% frequency of "dense surface weeds", or presence of AIS plants, or avg pH < 6.5, or MDI	
		AIS plants used to evaluate boating.	< 5	
Boating/		Fishing evaluated by pH and conductivity (latter used to calculate	>50% frequency of recreational impacts from	
Fishing	Stressed	morphoedalphic index, or MDI)	"excessive weeds" or MDI < 1	
risiling		morphoedalphic index, or MDI)	Impaired listings are not possible under present	
	Impaired	Boating and fishing assessments cited	CALM methodology	
		here reference secondary contact	No aquatic plant, perception, pH or conductivity	
	Not known	recreation and are not cited on the PWL	data	
	Supported		No evidence of any criteria violations (see below)	
	2 -  -  - 3 - 10 - 0		DO (in 'Biological Health' scorecard) = "fair", or	
	Threatened		pH < 7 or > 8.5, or AIS plants OR animals	
		pH, (inferred) dissolved oxygen, and the	present	
Aquatic Life	Stressed	presence of AIS species are used to	DO (in 'Biological Health' scorecard) = "poor"; or	
		evaluate aquatic life	pH < 6.5, or AIS plants AND animals present	
			DO (in 'Biological Health' scorecard) = "poor" in	
	Impaired		salmonid fishery	
-	Not known		No pH, DO, or AIS information available	

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Lake Use	Score	Criteria Score Elements	How Criteria Are Used to Determine Score
	Supported	Aesthetics are evaluated through	No evidence of any criteria violations (see below)
	Threatened		Max Chl.a> 30 ug/l, OR 1 occurrence of open water or shoreline bloom OR >50% frequency of recreational impacts from "excessive weeds" OR presence of AIS plant species
Aesthetics		HABs and AIS species. "Aesthetics" is not	"Lake looks bad" cited >25% frequency in
	Stressed	recognized by EPA as a designated use,	question 4 of perception survey; > 1 occurrence/
		so it is evaluated as a "condition"	yr of open water or shoreline bloom
	Impaired		Impaired listings are not possible under present
			CALM methodology
	Not known		No perception, HAB or AIS information
	Supported	Fish community is not such at all	No evidence of any criteria violations (see below)
	Threatened		'Harmful algae' listing of "unfavorable" on
			'Biological Condition' scorecard
Field		Fish consumption is not evaluated	Fish tissue data indicates measurable level of
Fish	Stressed	through CSLAP- PWL listings are based	contaminants but no listing on DOH Health
Consumption		on whether a waterbody is cited on the	Advice on Eating Sports Fish and Game
	Impaired	DOH Health Advice for Consumption of	Waterbody cited on DOH Health Advice on
			Eating Sports Fish and Game
	Not known		No fish tissue data

<sup>+</sup> proposed NNC (numeric nutrient criteria): for potable water: Class AA lakes: chlorophyll a = 4 ug/l; for Class A lakes = 6 ug/l; proposed NNC (numeric nutrient criteria) for swimming: chlorophyll a = 10 ug/l (all classes); water clarity = 1.2 meters (= 4 feet), TP = 20 ug/l

#### Summary

The information displayed in the scorecard is intended to give a quick and comprehensive overview of the results from CSLAP assessments and lake data collected by DEC, academics and private consultants.

CSLAP scorecards summarize information related to water quality, lake perception, biological condition and lake uses. The data and other information collected through CSLAP, or other sources, contribute to the evaluation of lake uses.

This information is the basis for the water quality assessments conducted as part of DEC's waterbody inventory. More comprehensive summaries of CSLAP data are included in individual lake reports and regional and statewide CSLAP data summaries. To fully understand CSLAP lakes, those interested should review the information found in scorecards, individual lake summaries, and regional and statewide CSLAP reports.

CSLAP individual lake reports can be found on the Water Reports by County page of DEC's website (http://www.dec.ny.gov/lands/77821.html). Historical reports and regional lake reports are available on the New York State Federation of Lake Associations website (http://nysfola.mylaketown.com/).

#### **Citizens Statewide Lake Assessment Program**

#### More information about CSLAP and NYS Lakes

Many resources are available to lake associations and citizens interested in lake management and ecology on DEC's website, including:

- Information about CSLAP history, sampling activities, forms, and lake association resources are available on DEC's Citizens Statewide Lake Assessment Program web page (http://www.dec.ny.gov/chemical/81576.html).
- Measured water quality variable fact sheets (http://www.dec.ny.gov/docs/water\_pdf/cslaplkpara.pdf)
- Lake management publication, *Diet for a Small Lake* (http://www.dec.ny.gov/chemical/82123.html)
- DEC\_Google Maps and Earth data, including CSLAP Lakes (http://www.dec.ny.gov/pubs/42978.html)
- Boating in NYS (http://www.dec.ny.gov/outdoor/349.html)
- Fishing in NYS ( http://www.dec.ny.gov/outdoor/fishing.html)
- Freshwater Fishes of NY (http://www.dec.ny.gov/animals/269.html)
- Lake Contour Maps (http://www.dec.ny.gov/outdoor/9920.html)
- NYS Watersheds, Lakes and Rivers (http://www.dec.ny.gov/lands/26561.html)
- Fish Health Advisories (http://www.dec.ny.gov/outdoor/7736.html)
- Routine Statewide Monitoring Program (water quality monitoring programs) (http://www.dec.ny.gov/chemical/23848.html)
- Common Aquatic Invasive Species of NY (http://www.dec.ny.gov/animals/50272.html)