2018
STATE of the LAKE
and
Ecosystem Indicators Report
for Lake Champlain

Photo: Perri Siverhart
Québec 7%

Vermont 56%

New York 37%
Public beach closures on Lake Champlain, 2015-2017

STATUS
Closures between Memorial Day and Labor Day

GOOD:
Closed 0-5 days

FAIR:
Closed 6-19 days

POOR:
Closed 20+ days
Cyanobacteria closure

Coliform bacteria closure
EXCESSIVE NUTRIENTS

CALM WATER

WARM WATER

CYANOBACTERIA BLOOMS (BLUE-GREEN ALGAE)
Annual mean phosphorus concentration, 1990-2017

**KEY**

- **Exceeds P Limit**
- **Below P Limit**

**OF TOTAL LAKE VOLUME**

**ISLE LA MOTTE**
- Limit: 14 µg/L
- Percentage: 7.3%

**CUMBERLAND BAY**
- Limit: 14 µg/L
- Percentage: 0.2%

**MAIN LAKE**
- Limit: 10 µg/L
- Percentage: 65%

**PORT HENRY**
- Limit: 14 µg/L
- Percentage: 5.7%

**SOUTH LAKE A**
- Limit: 25 µg/L
- Percentage: <0.1%

**SOUTH LAKE B**
- Limit: 54 µg/L
- Percentage: <0.1%

**MISSISQUOI BAY**
- Limit: 25 µg/L
- Percentage: 0.8%

**ST ALBANS BAY**
- Limit: 17 µg/L
- Percentage: 0.1%

**NORTHEAST ARM**
- Limit: 14 µg/L
- Percentage: 13%

**MALLETT'S BAY**
- Limit: 10 µg/L
- Percentage: 2.8%

**BURLINGTON BAY**
- Limit: 14 µg/L
- Percentage: 0.2%

**SHELBOURNE BAY**
- Limit: 14 µg/L
- Percentage: 0.5%

**OTTER CREEK**
- Limit: 14 µg/L
- Percentage: 3.7%
Annual mean phosphorus concentration, 1990-2017

MAIN LAKE
Limit = 10 μg/L

65%
Annual mean phosphorus concentration, 1990-2017

**Malletts Bay**
- Limit = 10 µg/L
- 2.8% of total lake volume

**Burlington Bay**
- Limit = 14 µg/L
- 0.2% of total lake volume

**Shelburne Bay**
- Limit = 14 µg/L
- No data

**Key**
- Red: Exceeds P limit
- Blue: Below P limit
- %: Of total lake volume
Dive in: What you can do
Annual tributary loading, 1990-2017

Mean annual phosphorus load (metric tons/year)

When the influence of annual changes in river flow is removed, most tributaries do not show significant long-term changes.
Annual tributary loading, 1990-2017
Annual phosphorus loading and land cover

- Streambanks: 20%
- Wastewater Facilities: 18%
- Forest: 16%
- Developed Land: 16%
- Wetlands: 1%
- Agriculture: 38%

Total: 921 metric tons

Load
Phosphorus load from wastewater treatment facilities, 1990-2016
Dive in: What you can do

Flushable wipes are not flushable!
Dive in: What you can do
Freeze-over of Lake Champlain, 1906-2016

Winters when Lake completely froze over
Winters when Lake did not completely freeze over
Mercury concentration in fish tissue

US EPA Fish Tissue Criterion for Mercury

WALLEYE
LAKE TROUT
SMALLMOUTH BASS
WHITE PERCH
YELLOW PERCH
Dive in: What you can do

Don’t trash toxics

Photos: iStock
Aquatic non-native and invasive species, 1883-2018
Aquatic non-native and invasive species, 1883-2018

#51
Fishhook waterflea 2018
Non-native threats to Lake Champlain Basin from connected waterways

The numbers show the total non-native and invasive species known to be present in each waterway as of September 2017.
Extent of water chestnut coverage

MISSISQUOI BAY
NORTHEAST ARM
MAIN LAKE
SOUTH LAKE

GOOD
FAIR
POOR

1999  2007  2017

Pike River  Richelieu River  Pike River
MNWR  MNWR  Black Creek Marsh

Fields Bay, Ferrisburgh
Crown Point

Benson Landing
Dresden
Extent of water chestnut coverage

MISSISQUOI BAY

NORTHEAST ARM

MAIN LAKE

SOUTH LAKE

GOOD

FAIR

POOR
Dive in: What you can do

clean

Checkerbay Carwash
Colchester, VT

drain

dry
THE ECONOMIC IMPACT OF CLEAN WATER

Lake Champlain generates $300 MILLION in VT tourism every year.

Secchi disk depth measures the clarity of water, which is an indicator of water quality.

Tourism

-$16.8 MILLION* July/August

+10% higher seasonal room rates for towns with lake-dependent tourism

Lost Jobs*

195 = 10 full-time jobs

* Projected impacts with a 3 ft. (1 m) decrease in water clarity

Home Values

+$15,200 if water quality standards are met

3%* year-round homes

37%* seasonal homes
New and improved cartop boat access sites, 2015-2018
Dive in: What you can do

Help the next generation of lake stewards get involved
Dive in: What you can do

Join a watershed group

Photo: Scott Staples
Dive in: What you can do

Help the next generation of lake stewards get involved
Thank you!

Eric Howe
Director, LCBP
ehowe@lcbp.org

Colleen Hickey
Education and Outreach Coordinator
chickey@lcbp.org