

JANUARY 2016 UPDATE

Our updates for 2015 have been moved and are now saved under the link titled "2015 Lake Massapoag Observations." Routine lake updates will resume in Spring 2016.

Following the recent precipitation events, the lake level on January 17 was 9.9 feet, or about 1.2 feet higher than the 8.7 feet level measured on November 24, 2015. The rise in the lake level is entirely attributable to the quantity of water flowing into the lake via precipitation, surface water, and groundwater. The water level control structure at the flume house has not been adjusted; flow from the lake is not being restricted. A higher level of discharge from the lake during the winter months is helpful to reduce residence time (the time water spends in a lake) and nutrient build-up.

Despite the recent rain and snow, our region continues to be under drought conditions according to the weekly updates prepared by NOAA, the US Department of Agriculture, and [the National Drought Mitigation Center](#). Between March 2015 and December 2015, below average monthly precipitation quantities were measured each month in Walpole (National Weather Service observer) and Norwood (National Weather Service automated service). The Foxboro National Weather Service observer also recorded below average monthly precipitation quantities for six of the final eight months in 2015. The long term below average precipitation levels impacts both the lake level as well as the groundwater level. Groundwater is an important source of water flowing into the lake. A lower water table (near surface aquifer) and potentiometric surface (deeper aquifers) will reduce the quantity of groundwater flowing into the lake.

LOOK BACK AT 2015

Even though discharge from the lake was kept to minimum quantities, the lake level dropped from 10.2 feet on May 15, 2015 to 8.9 feet on October 1, 2015. In other words, the drop in the lake level was not attributable to excess water released to Massapoag Brook. A comparison of 2015 lake levels to recent levels is provided in the link titled "2015 Lake Level Summary."

Although the lake level was lower than average, the water quality was satisfactory based on pH, dissolved oxygen, and *Escherichia coli* (E. coli) measurements. More information about E. Coli testing is provided in the "2015 Lake Massapoag

Observations" and pH and dissolved oxygen measurements are presented in the link titled "2015 Water Geochemistry." Lake water temperature levels, also discussed within the ""2015 Lake Massapoag Observations" were higher than typical and reflect the reduced quantity of water flowing into the lake and the longer residence time. The higher lake water temperature does impact the lake's ecology.

A small quantity of invasive weeds was observed in the lake. In 2014, Lake Massapoag was treated by Aquatic Control Technologies for the invasive species of Fanwort and Milfoil. The treatments were highly successful. In August 2015, fanwort was identified on the outskirts of the South Cove near the community center (outside of the 2014 treatment area). In order to help control the weed burden, a substantial amount was hand-picked in September. Subsequently, a small quantity of fanwort plants was identified in the South Cove in an area previously treated.

MARCH 24, 2016 UPDATE

The lake level is 10.3 feet. Water temperature at the flume house is about 46 degrees Fahrenheit.

April 9, 2016 UPDATE

The lake level is 10.8 feet. Water discharge from the lake is about 18 cubic feet per second. Water temperature at the flume house is about 50 degrees Fahrenheit.

April 21, 2016 UPDATE

The lake level is 10.38 feet and the rate of water discharge from the lake is about 2.7 cubic feet per second. The target range of the lake level for the period between April 16 and May 15 is 10.2 feet to 10.5 feet (see "Procedures and Schedules for Controlling the Water Level in Lake Massapoag").

Between April 9 and April 19, the lake level was lowered from 10.8 feet to 10.38 feet; water discharge rates ranged from 13 to about 24 cubic feet per second.

April 22, 2016 UPDATE

The Massachusetts Department of Fish and Game stocked the lake on April 21st with rainbow trout. We remind all boaters to clean, drain, and dry their boat and trailer prior to accessing Lake Massapoag to prevent the spread of invasive weeds and species.

Fish and Game also stocked Massapoag Brook and Beaver Brook with Eastern Brook Trout on April 12.

April 27, 2016 UPDATE

The lake level is 10.46 feet and the rate of water discharge from the lake is about 3.1 cubic feet per second. Water temperature at the flume house is about 55 degrees Fahrenheit. About 0.3 inches of rain fell on April 26.

May 2, 2016 UPDATE

The lake level is 10.45 feet and the rate of water discharge from the lake is about 2.9 cubic feet per second. Water temperature at the flume house is about 57 degrees Fahrenheit.

The amount of precipitation in April was about 1/2 inch below normal.

May 9, 2016 UPDATE

The lake level is 10.58 feet and the rate of water discharge from the lake is about 4.4 cubic feet per second. Water temperature at the flume house in the evening is about 60 degrees Fahrenheit.

May 15, 2016 UPDATE

The lake level is 10.55 feet, which is slightly higher than the target level of 10.5 feet for May 15.

Between 1997 and 2015, the maximum lake level on May 15 has been 11.1 feet (2006), the minimum level has been 10 feet (2013), and the average and median level has been 10.5 feet.

While the first week in May was damp, Southeastern Massachusetts is drier than normal over the last 30 and 180 days according to the National Weather Service. In addition, the current weather models predict a dry pattern through the summer. The predicted dry conditions will be detrimental to lake and groundwater levels.

May 31, 2016 UPDATE

The lake level is 10.56 feet and the rate of water discharge from the lake is about 2.2 cubic feet per second. Water temperature at the flume house in the morning is about 72 degrees Fahrenheit.

June 1, 2016 UPDATE

The lake level is 10.53 feet and the rate of water discharge from the lake is about 1.9 cubic feet per second.

Comparing the current lake level to previous years, between 1997 and 2015, the maximum lake level on June 1 has been 10.62 feet (2005), the minimum level has been 10.12 feet (1999), the average level has been 10.41 feet, and the median level has been 10.48 feet.

With the beach season beginning, the Health Department is routinely collecting and analyzing water samples from a number of beach locations around the lake. Information about the testing is posted on the Sharon Health Department and Board of Health web pages and also summarized below.

Water samples are collected weekly by the Health Department from Memorial Park Beach (multiple locations) and Community Center Beach (one location); the camps are responsible for testing at their beaches. Water samples may be collected more frequently based upon recent sample results and/or a recommendation by the Health Department. The water samples are analyzed for *Escherichia coli* (E. coli) which is a sensitive indicator of fecal contamination for freshwater beaches.

Samples results are reported as the number of colony forming units (cfu) present per 100 milliliters (ml) of water. The Massachusetts water quality standard established in Massachusetts Department of Public Health regulations is no sample shall exceed 235 cfu per 100 ml, and the geometric mean of the most recent five samples shall not exceed 126 cfu per 100 ml. When sample results exceed these standards, the current Board of Health policy is to close the beach, resample the water, and reopen the beach upon receipt of a sample result less than the standard. This policy is more conservative than state regulation; a 2014 amendment to the Massachusetts bathing beach regulations allows Lake Massapoag beaches to remain open after one sample exceeds the 235 cfu per 100 ml standard because the routine testing have shown consistently good water quality.

The most recent sampling event conducted on May 25, 2016 detected between 5 and 84 cfu per 100 ml at Memorial Park Beach and 5 cfu per 100 ml at the Community Center Beach. These results are well below the regulatory standard.

While the Health Department is responsible for water collection and analysis, the Lake Management Study Committee will share results that we receive on this website. If you have questions regarding the testing, please contact the Sharon Health Department

June 15, 2016 UPDATE

The lake level is 10.41 feet and the rate of water discharge from the lake is about 1.2 cubic feet per second.

Comparing the current lake level to previous years, between 1997 and 2015 (excluding 2014 when the lake was lowered for a herbicide treatment to address invasive weeds), the maximum lake level on June 15 has been 12.3 feet (1998), the minimum level has been 10.12 feet (2015), the average level has been 10.48 feet, and the median level has been 10.36 feet

June 30, 2016 UPDATE

The lake level is 10.24 feet. Water temperature at the flume house in the morning is about 72 degrees Fahrenheit.

July 1, 2016 UPDATE

The lake level is 10.23 feet and the rate of water discharge from the lake is about 1.2 cubic feet per second. Water temperature at the flume house in the morning is about 73 degrees Fahrenheit.

Comparing the current lake level to previous years, between 1997 and 2015 (excluding 2014 when the lake was lowered for a herbicide treatment to address invasive weeds), the maximum lake level on July 1 has been 11.15 feet (1998), the minimum level has been 9.9 feet (1997), the average level has been 10.33 feet, and the median level has been 10.27 feet

July 8, 2016 UPDATE

The most recent water sampling event for E. coli conducted at the beaches on July 6 detected 15 cfu per 100 ml and 24 cfu per 100 ml at Memorial Park Beach (two separate sampling locations). These results, as well as the geometric means for these locations, are well below the regulatory standard.

The sampling event at the Community Center Beach detected 372 cfu per 100 ml, which exceeds the Massachusetts Department of Public Health regulation that no sample shall exceed 235 cfu per 100 ml. The Board of Health closed the Community Center Beach, and a sample was collected to re-test the water at the Community Center Beach.

Further information about this testing program is presented below (see June 1 Update) as well as on the Health Department web site.

July 11, 2016 UPDATE

The lake level is 10.00 feet and the rate of water discharge from the lake is about 1.5 cubic feet per second. Water temperature at the flume house in the morning is about 72 degrees Fahrenheit.

Since June 7, the United States Drought Monitor (<http://droughtmonitor.unl.edu/>) has determined our region is experiencing “abnormally dry” conditions. Precipitation data

from nearby weather stations, including the Norwood Airport, indicate the amount of rain between March 1 and June 30, 2016 is about 6 inches below average.

The Community Center Beach was re-opened on July 10.

July 15, 2016 UPDATE

The lake level is 10.0 feet and the rate of water discharge from the lake is about 1.2 cubic feet per second. Water temperature at the flume house in the morning is about 75 degrees Fahrenheit.

Comparing the current lake level to previous years, between 1997 and 2015 (excluding 2014 when the lake was lowered for a herbicide treatment to address invasive weeds), the maximum lake level on July 15 has been 10.65 feet (2009), the minimum level has been 9.7 feet (1997), the average level has been 10.1 feet, and the median level has been 10.16 feet.

July 19, 2016 UPDATE

The lake level is 9.97 feet and the rate of water discharge from the lake is about 1.3 cubic feet per second. Water temperature at the flume house in the morning is about 80 degrees Fahrenheit.

July 20, 2016 UPDATE

Yesterday, the United States Drought Monitor (<http://droughtmonitor.unl.edu/>) determined our region is experiencing “moderate drought” conditions.

August 1, 2016 UPDATE

The lake level is 9.66 feet and the rate of water discharge from the lake is about 1.3 cubic feet per second. Water temperature at the flume house in the morning is about 77 degrees Fahrenheit.

Comparing the current lake level to previous years, between 1997 and 2015 (excluding 2014 when the lake was lowered for a herbicide treatment to address invasive weeds),

the maximum lake level on August 1 has been 10.27 feet (1996), the minimum level has been 9.38 feet (2015), the average level has been 9.9 feet, and the median level has been 9.98 feet. This year's lake level reflects the drought conditions the region is currently experiencing.

August 2, 2016 UPDATE

As of today, the United States Drought Monitor (<http://droughtmonitor.unl.edu/>) has determined our region is experiencing “severe drought” conditions.

August 8, 2016 UPDATE

The lake level is 9.56 feet and the rate of water discharge from the lake is about 1.2 cubic feet per second. Water temperature at the flume house in the morning is about 77 degrees Fahrenheit.

August 11, 2016 UPDATE

The lake level is 9.52 feet, the water temperature (measured at the flume house) is 86 degrees (evening), and water discharge from the lake is about 1.5 cubic feet per second.

Why is the lake level dropping? The lake level has dropped about 1 foot since May 15. For comparison, in a typical year, based on lake levels recorded since 1996, the lake level drops about 8 inches between May 15 and August 11. In other words, this summer the lake level has dropped about 4 inches more than in an average summer.

As previously noted, our region is in “severe drought” conditions. About 1 inch of rain fell in July compared to an average of nearly 4 inches of rain. Below average rain occurred in May and June as well. The well below average precipitation amount is significantly impacting groundwater and surface water levels throughout our region. The current groundwater level recorded by the United States Geologic Survey at a nearby water table well is about 18 inches below the normal level for this date. The Neponset River Watershed Association is monitoring the impact of the drought on the Neponset River (<https://www.neponset.org/happenings/observing-the-droughts-effect-on-the-neponset/>) and is reporting flow rates well below the 10-year average.

Why is water being released from the lake? Lake Massapoag feeds Massapoag Brook and other downstream water bodies. Water flowing out of the lake supports the ecology of these streams and ponds. The Lake Massapoag Water Level Management Plan (see link elsewhere on this webpage) sets discharge rates from the lake, and a minimum discharge rate of 1.5 cubic feet per second is recommended to maintain the biological integrity of downstream ponds and streams. In addition, the discharge from the lake helps manage the residence time (the time water spends in the lake) and nutrient build-up, which may lead to algal growth in the lake.

Lake Massapoag, which is fed by a few streams, groundwater, and precipitation, is exhibiting a lake level drop due to this year's significantly reduced inflows from streamflow, groundwater, and precipitation.

September 12, 2016 UPDATE

A vegetation and water quality survey was conducted today by SOLitude Lake Management for the Lake Management Study Committee. The survey identified fanwort, an invasive weed, in three locations within the south cove of Lake Massapoag. Only one variable milfoil stem, also an invasive species, was observed in the lake – this plant was removed.

SOLitude Lake Management will be preparing a report documenting their observations and recommendations. This report will be posted on this website after review by the Lake Management Study Committee.