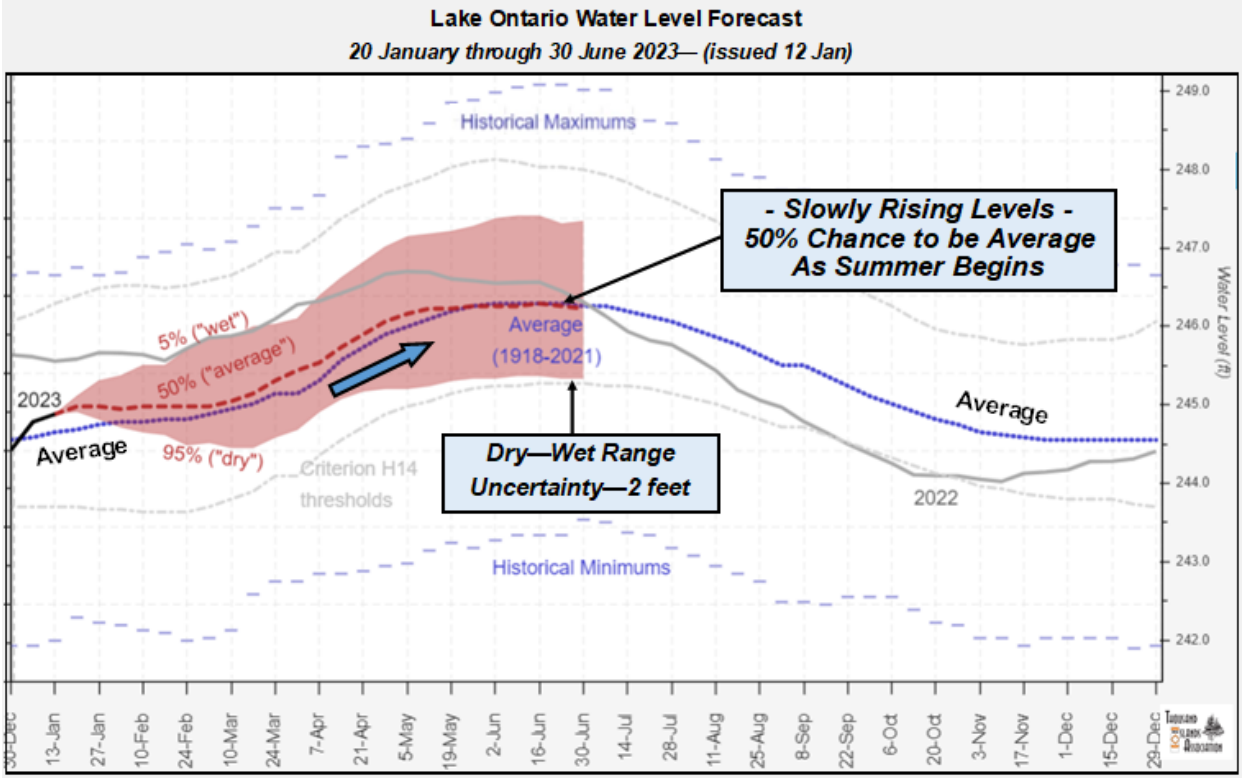
Water Levels – Going UP Just Above Average For The Next 6 Months

TIA Water Levels Committee (210/23 updated) – by Barton, Stewart & White



https://ijc.org/en/loslrb/watershed/forecasts Graphic Edits by TIA

UPDATED SUMMARY – Fall 2022 Levels Finally Crossed Above Average to Start 2023

- **For a 'mild' winter so far, we've definitely seen some extreme wind, snow, water level seiche and ice events. The River is 1.75 ft above chart datum.**
- Water levels are now over **4" above** early February's long term average
- The ILOSLR Board is still draining Lake Ontario at a significant rate of 7,620 m^3/s
- The Upper St. Lawrence was essentially without ice when our River Talk single page article was written on January 20th, ***a rarity for this time of year***
- Ice formation activity in the Beauharnois Canal finally began on January 27th. *See the latest info near the end of this Full Article*
- For the **Lake Ontario basin**, **January precipitation** has been close to average
- December was pretty wet (4.06" of precipitation vs. an average of 3.03")
- The last 10 days of December were **REALLY wet** - with 2.61" of precipitation *(Almost a full month's average in just those last 10 days)*
- That kicked off the level rise over the last few weeks, as runoff from a lot of the precipitation wasn't felt until early January, finally taking levels to above average

- **NEWS FLASH** – Ross Stewart, TIA Member-at-Large, has been appointed as a member of the IJC's Public Advisory Group in support of the expedited review of Plan 2014. *More in our next issue!*

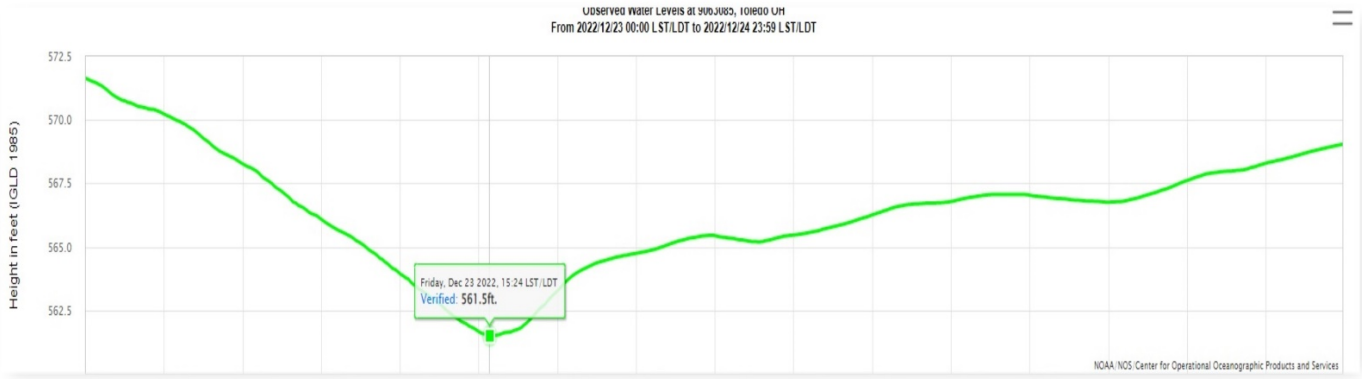
Full Article's Highlights – The BIG Christmas Blow –

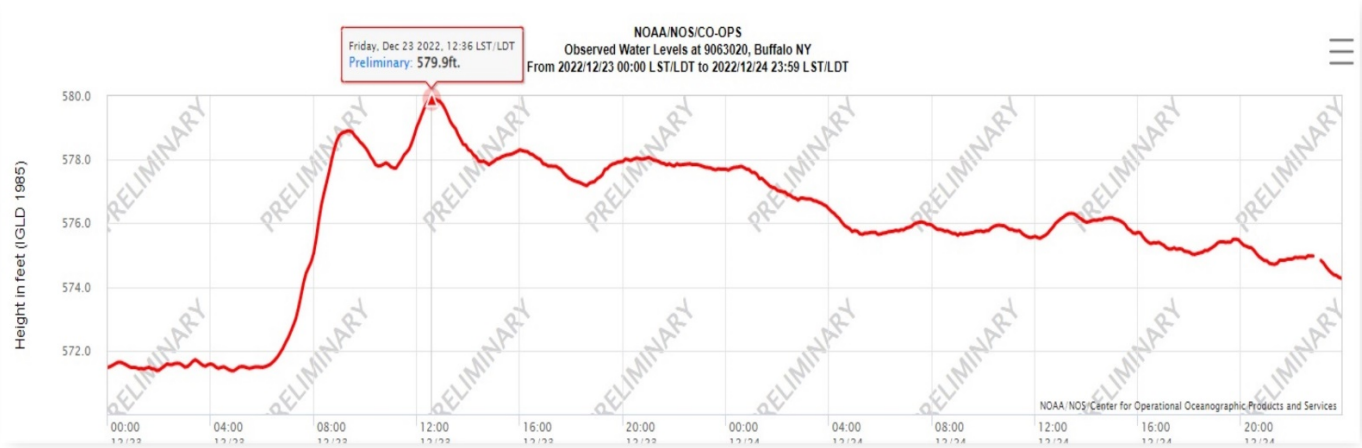
- There was a major seiche for River water levels but minor compared to Lake Erie
- **Levels rose an amazing +8 FEET in Buffalo and -8 FEET in Akron, OH Wow!**
- Over 3 ft level rise along Gananoque shore. 4+ ft waves. Big shore ice buildup
- Waves tore up bottom off Halsteads Bay rest stop, piling up dirt & bottom debris 80 yards offshore! Phenomenon never seen before by locals. *See the photos…*

The BIG Christmas Frigid 'Blow Storm' December 23–24 2022

Humongous Seiche Tilts Water Levels Across Lake Erie

Here are the water level graphs from Buffalo and Toledo. Respective **high** (579.9') and **low** (561.5') points data is in the boxes. *Imagine climbing a long 18 foot water hill*



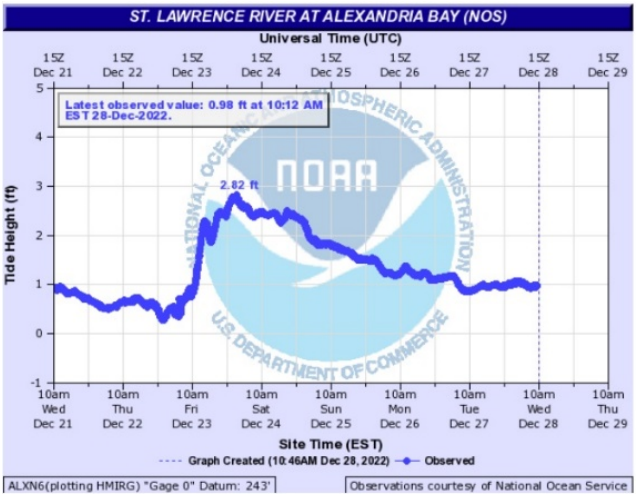


Buffalo water level station (**red line**) saw a rise of over **EIGHT FEET**. *No typo there...* **the rise in Buffalo from the seiche effect was greater than the difference between Lake Ontario's all time low water and all time high water marks**! That's just one end of the lake. Comparing Buffalo vs. Toledo (**green line**) levels during the most extreme

stretch, the **difference across the lake was more than 16 FEET for hours**. (That's before adding 2 more feet for the curvature of the earth) "*Absolutely crazy to think about that much water "sloshing in the bath tub" of Lake Erie", Vince Barton said.*

Alan Bickerton commented **"**What a crazy event in Lake Erie - but such a prolonged severe wind, **worse in duration than a hurricane**."

Seiche On the River at Alex Bay, NY



Click to enlarge [ABay Level 221228 Super Seiche.jpg]

- The above level graph of the huge seiche (for the River) during the blow measured in Alex Bay understates the nearly 3 foot level swing on the CDN side)
- When the arctic front arrived on Friday 12/23/22, water levels in Alex Bay were around a low 1/2 foot above chart datum. At the peak of the big blow which followed, the Alex Bay level rose to 2.82 feet.
- Knowing that water flowing on the north side of Grindstone, passing Gananoque and along the Canadian Channel have less restriction, it would be safe to say that Alan Bickerton experienced a water level rise of more than 3 feet along the Parkway, the Admiralty Group and in Gananoque!
- Allison Burchell-Robinson reported that freighters had to drop anchor to ride out this storm in the Clayton area. As of Christmas Eve, power was still out for 400 upstate customers, 300 of which were on the US islands! For a while the American span of the bridge was closed and power companies stayed off the River as a matter of safety!
- Bickerton reported "The WindyTV app I use showed sea conditions near Main Duck Island at **5.8m (19 foot) waves**. Little wonder the ships were waiting it out."
- Given the amount of liquid precipitation prior to the temperature plunge (plus resulting snow melt) in the Lake Ontario basin, it would be reasonable to expect a level bump of a couple of inches, which was what we saw the next week.

Photos from around Gananoque – after the Christmas Blow

Eastern Entrance to the Bateau by Alec Turner

Alec reports that “at our dock, the Christmas Blow produced a peak wind of 91.5 kph” (56.86 mph) Given that there was practically no ice in the River, the intense winds picked up water and instantly made ice where the spray landed.







Take a look above at the icicle formations UNDER the DOCK!!

On the East Side of Gananoque by Alan Bickerton on Christmas Day

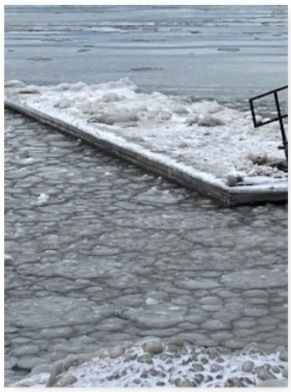
- Our water levels were up around 2.5 to 3 ft for sure, and **the waves were huge**.
- We had Blizzard conditions for a while during the initial frontal arrival.
- Our 50' by10' floating dock has at least an average of 6" of ice from the spray still frozen hard on it and pushed it lower by over 1 foot
- I figured if the 6" of ice would weight about 12500 lbs (6.25 tons), so little wonder the floating dock is low in the water. The shore is totally iced in with spray.
- Unfortunately I don't recall how far out of water the dock sits normally but I think around 24". Right now I can see about 10". Both are estimates. But I'm not going onto the icy and very uneven surface to figure it out!
- Spray is the biggest driver of ice buildup. The spray (see below left) coming from our neighbour's fixed breakwater has now deposited at least 1 foot of solid ice on top Maybe the warm temps later in the week will melt some or most of it.

Spray visible (above left) on stationary breakwater dock

Pancake ice is an unusual phenomenon where round floating pieces of ice continue to grow. On the far right above notice all of the round pancake ice, then see the next group

Ice Pancakes anyone?



<u>Across from Gananoque on Hay Island</u>

We have yet to learn who took these neat photos including the one of Napoleons Hat. Please accept our apologies for the lack of credit and our appreciation for the sharing.


Halsteads Bay – Along The Parkway just West of Landon Bay Causeway

Halsteads Bay on the Chart – It's just upstream from the Navy Islands Group

Click to enlarge [Halsteads Bay Chart 145755.jpg]

***NOTE**: **Clicking to enlarge** this and subsequent other photos will display them in a separate tab on your browser. To return to this article, either click on this PDF on screen **or** click on its icon in the task bar at the screen bottom. Remember to eventually close any open tabs containing these images.*

Halsteads Bay – Rest Stop on the Parkway – photos by Ed Lynch

Background: The wind was so powerful, driving huge waves into the shore (close to the guardrail), that the waves stripped the bottom and made a bumpy yet tall pile of bottom trash, weeds, minnows etc about 80 yards from the road...While it looks like an uneven 8 – 10 foot tall snowbank, it's actually a solid pile of bottom debris.

The result is a complete redefinition of the shoreline as there's no water between the long pile and the road's normal shore. It's a phenomenon totally unfamiliar to the locals, and may possibly still be there in the spring.

Four rather unique images follow. The next photo, combined with the above chart is intended to help with view orientation as **Stave** and **Gordon Islands** are visible in the distance at Halsteads Bay alont The Parkway.

Click to enlarge Halsteads Bay by the rest stop 230103.jpg

Here's a unique photograph, shot from the Gan side of the rest stop pull-off on The Parkway, just after crossing the bridges at the entrance to Landon's Bay. The view is of Halstead's Bay with **Stave Island** on the far left and **Gordon Island** behind scrub bushes at the guardrail on the right (Jackstraw Shoal is at its SW tip).

Click to enlarge Halsteads Bay on the Gan side of rest stop 230103.jpg

Mounds are 8 to 10 feet high and 30 feet out from where we used to get in the water, which is on the left near the one large tree, with **Hickey Island** directly behind it. The rest stop parking is just to the left (East) of this tree.

So why did this local shoreline devastation happen in just the area of Halstead's Bay along The 1000 Islands Parkway?

It has everything to do with the relationship of the exact wind direction and the **"reach"** of the open water with which the wind aligned. **"Reach"** is a term most familiar to our sailing friends. There is minimal interruption of the wind from Forty Acres all the way to the Halsteads Bay shore.

- A **reach** is a length of a stream, river, or arm of the sea extending up into the land, usually suggesting a straight, level, uninterrupted stretch. They are traditionally defined by the capabilities of sailing boats, as a stretch of a watercourse which, because it is straightish, can be sailed in one reach (that is, without tacking). *(Thanks Google!)*

Click to enlarge Halsteads Bay 221231_1.jpg

The now dry shoreline between the edge of The Parkway and massive piles of debris can best be seen in this photograph

This is a small part of the long and TALL pile of bottom debris photographed from the Parkway on the foggy New Year's Eve day. The uneven mound is about 8 – 10 FEET high. *The question is whether the Halstead Bay shoreline has been altered just for the near future or long term?*

Western End of Halsteads Bay towards Gananoque – Jim Coté Photos

With a light snow cover for the recently formed skim ice, at first glance this scene looks rather peaceful, with memories of the raging Christmas Big Blow quickly fading.

These and other previous photos are a reminder of the fury which visited to kick off the Christmas holidays. The amount of ice buildup on dock and shoreline surfaces is very apparent in these images. Close examination of both photos is a reminder of the incredible force it took to totally disconnect both the large ice-filled floating boathouse and separate ice laden dock structures from their shore moorings as is shown above.

January 18th – The River was STILL OPEN

(Photos courtesy of Glenn Easton)

The above web photo was shared by Ross Stewart. It shows a wide Lake St. Pierre, which spans from *Trois Riviere* to east (downstream) past Montreal. The exact location on the lake was not specified. The swath of ice being pushed back would most likely be from the Canadian Coast Guard running through the ice as well as shipping traffic. Others of us had wondered if this distinct line was from ice booms, but likely not.

The Brockville Narrows – Photos and Comments by Ross Stewart

The attached pics are closer to home for Ross in the Brockville Islands and were taken yesterday. They are a good illustration showing that ice formation varies greatly at this time of year. Ice starts forming and then recedes quite easily depending on temperature more than calendar date. This illustrates the challenges within the Beauharnois Canal and other areas of interest for the ILOSRB must deal with ice to prevent dreaded jams.

The sunrise across the River shows nothing but open water on January 18th. The photo of a small island close to Brockville is a classic pre-freeze-up winter scene. What makes it special is a flock of Canada Geese on the distant left, and likely some White Snow Geese high up to the right of center, looking somewhat like an aircraft formation.

Ice Forms Across the River between Rockport to the US

But the sheet hasn't lasted. The frigid Arctic cold blasts have been short lived, with temperatures trending above normal and above freezing most days. Black ice thickness is around 5 – 6 inches off Rockport with snow on top. Recent winds brought water levels up and saturated the snow, making weak white ice on top of the sturdy sheet.

Finally It's Cold Enough To Form Ice in the Beauharnois Canal

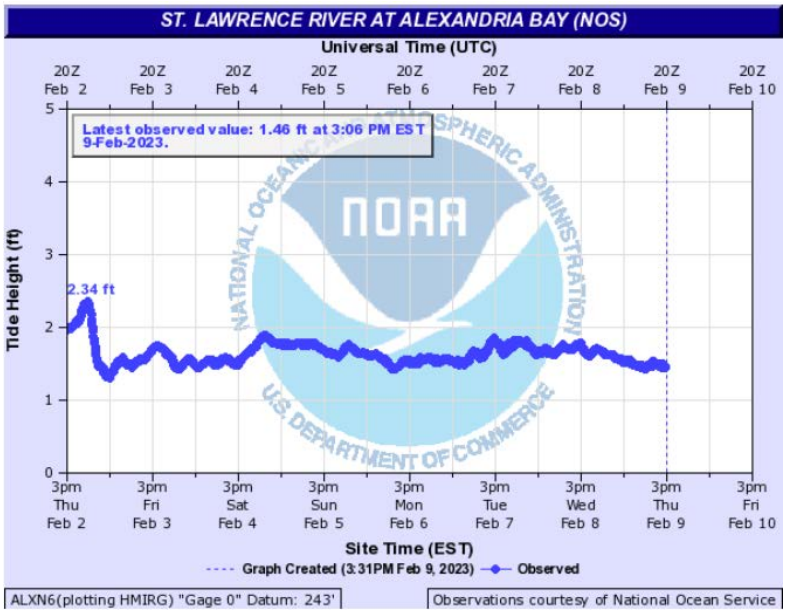
~ News Reports from the IJC and ILOSLR Board ~

https://ijc.org/en/loslrb/watershed/outflow-changes

> **January 27th** - The Lake Ontario outflow has been reduced to promote the formation of an ice cover in the Beauharnois Canal.
>
> **February 2nd** - Ice began to form in the Beauharnois Canal on January 27. Since then, the outflow has been operationally adjusted several times… in accordance with the *Plan 2014 I Limit*, as needed, to promote the formation and stability of an ice cover in the Beauharnois Canal.
>
> **February 7th** - As of February 4, an ice cover formed on Lake St. Lawrence, extending from the Moses-Saunders Dam to approximately Morrisburg, Ontario. A partial ice cover also remains in the Beauharnois Canal. Further ice formation is not expected in the short term because of the mild temperatures, and the outflow will be gradually increased.
>
> **February 11th** – The outflow target for the week of February 11 through 17 is the applicable **J-Limit flow** of 7,660 m^3/s. Based on the current level of Lake Ontario, and while ice remains in the St. Lawrence River, the J Limit prescribes a maximum change in weekly average flow of 700 m^3/s from one week to the next. The design principle behind the **J Limit** is to prevent rapid velocity and water level changes in the St. Lawrence River to minimize potential impacts to interests along the river. (**Avoid Ice Jams**)
>
> **For more information**: https://ijc.org/en/loslrb/watershed/outflow-changes.

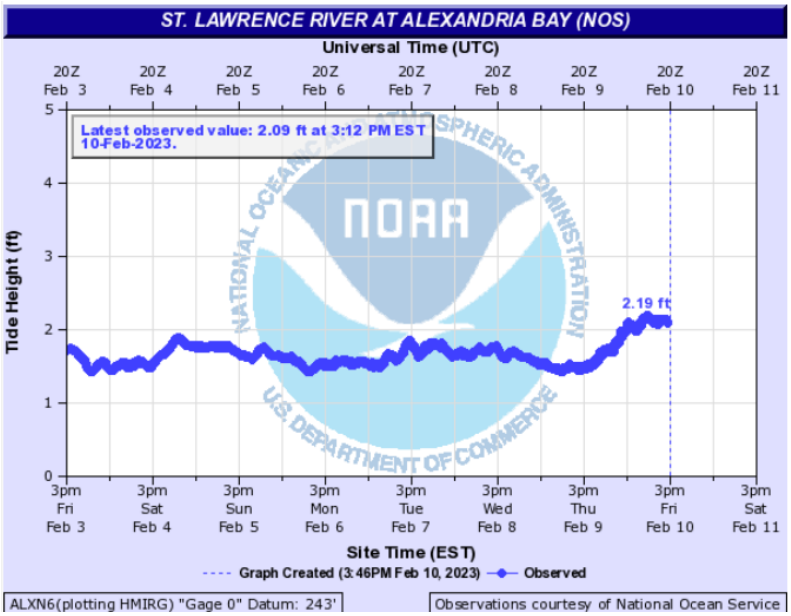
Friday February 10th the winds pick up again as another cold front arrives

As the low pressure approaches Thursday afternoon February 9th, winds from the SE begin to “fill in” which drives water back out into Lake Ontario, lowering the levels briefly on its east (downstream) end.

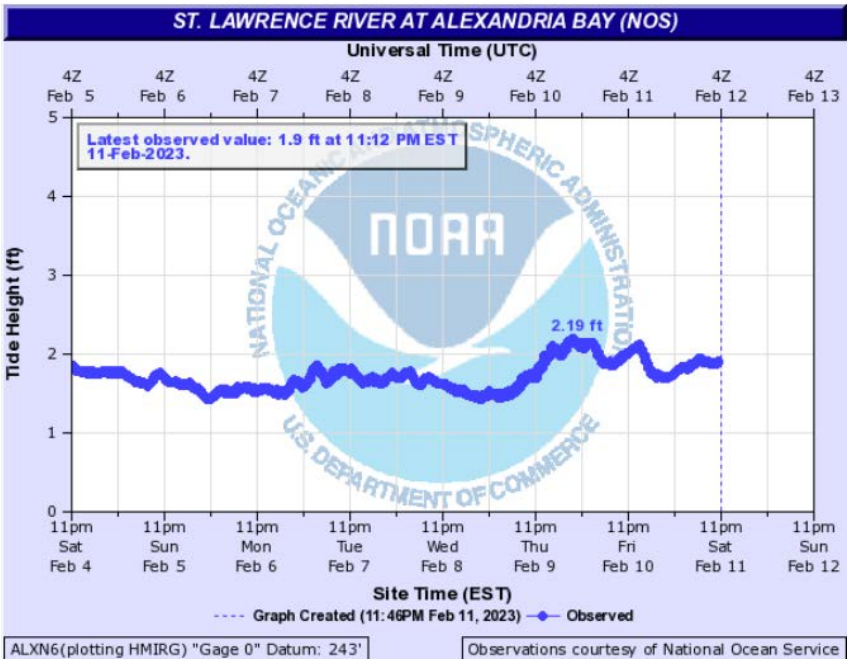


As the front arrived during late Thursday, the dip in the water level is evident of winds, likely from the SE, blowing water out into Lake Ontario.

Today, the winds picked up from the WSW, and are now blowing midmorning Friday at a steady 21 MPH with gusts of 31 MPH. So the water begins piling up again until the front passes Friday evening February 10th.The wind is slowly dropping and with it water levels.



Saturday the 11th the wind from the SW continued, abating Sunday morning as the water levels “sloshed” up and down, oscillating as the River and Lake slowly settled.



If you enjoyed this Full Water Levels article, and in particular all the photos from the Big Christmas Blow Storm of 2022, feel free to **pass along this article’s link to your friends or anyone with interest** by sharing the following link:

https://www.thousandislandsassociation.com/water-levels-jan-feb-2023-river-talk-full-article/

We sincerely thank the many River friends and TIA members who contributed time, photos, comments and memories to this special winter Water Levels issue.

With Gratitude…

Vince Barton – Ken White – Ross Stewart