

## ICE JAM REFERENCE AND TROUBLE SPOTS

Ice jams cause localized flooding and can quickly cause serious problems in the NWS Albany Hydrologic Service Area (HSA). Rapid rises behind the jams can lead to temporary lakes and flooding of homes and roads along rivers. A sudden release of a jam can lead to flash flooding below with the addition of large pieces of ice in the wall of water which will damage or destroy most things in its path.

Ice jams are of two forms: Freeze up and Break up. Freeze up jams usually occur early to mid-winter during extremely cold weather. Break up jams usually occur mid to late winter with thaws.

### **NWS Albany Freeze Up Jam Rule of Thumb:**

Three Consecutive Days with daily average temperatures  $\leq 0^{\circ}\text{F}$

### **NWS Albany Break Up Jam Rules of Thumb:**

1) Ice around 1 foot thick or more?

*And*

2) Daily Average Temperature forecast to be  $\geq 42^{\circ}\text{F}$  or more?

*Daily Average Temperature =  $(T_{\text{max}} + T_{\text{min}}) / 2$*

Rainfall/snowmelt with a thaw will enhance the potential for break up jams as rising water helps to lift and break up the ice. A very short thaw with little or no rain/snowmelt may not be enough to break up thick ice.

**\*\* River forecasts found at: <http://water.weather.gov/ahps2/forecasts.php?wfo=aly> will not take into account the effect of ice. \*\***

Ice jams usually form in preferred locations in the NWS Albany HSA. See the “Ice Jam Trouble Spots” below for a list of locations where ice jams frequently occur.

## **Ice Jam Trouble Spots**

**\*\*This is not an all-inclusive list, but rather a list of locations where ice jams have been reported in the past. Ice jams may form in other locations. \*\***

### ***Moose River (Northern Herkimer County):***

Ice frequently jams on this river. Jams have caused severe flooding at McKeever and Lyonsdale (BUF HSA) and there may be other locations as well. This area has a very cold winter climate. Breakup jams usually occur in spring but may also occur from unseasonable warmth in winter. MCKN6 gage readings may show spikes or irregular fluctuations associated with ice.

### ***Sacandaga River (Hamilton County):***

Main potential for jams is above Lake Algonquin and also from Hope gage (HOPN6) south to Northville. Jams often cause flooding of Route 30 and have resulted in heavy property damage. The state campground near the Hope gage is closed during winter. HOPN6 gage readings may show spikes or irregular fluctuations associated with ice.

### ***Hudson River (North of Glens Falls):***

The upper part of the Hudson River is particularly prone to ice jams between North Creek and Hadley, especially at The Glen, Warrensburg (Cronin's Golf Course) and just above Hadley Falls. The North Creek (NCKN6) and Hadley (HDYN6) gage readings may show spikes or irregular fluctuations associated with ice.

### ***Hudson River (Glens Falls to Fort Edward):***

Here the Hudson River usually freezes over on ponds above the Hydroelectric Plants. The ice usually remains in place on the water surface behind the larger dams. The river between Bakers Falls and Fort Edward is swift flowing and surges due to hydro power generation usually prevent freeze over.

### ***Hudson River (Fort Edward to Waterford):***

Ice forms on the ponds behind the hydroelectric dams at Stillwater and Mechanicville, but the slab ice usually remains behind the dam and does not move down river.

### ***Hudson River (Troy, Albany and South):***

Since the Champlain Canal Dams on the Hudson River are fixed, rather than removable like the Mohawk River Canal lock dams, ice jamming is not much of a problem on the Hudson between Troy and Waterford. Near Albany, a large ice jam occurred along Interstate 787 in 1976, and the river froze in 1994, 1996, and 2004. Ice jam problems near Albany and further south were reduced when the river was dredged and deepened for shipping in the 1930s.

***Batten Kill (Washington County, NY and Bennington County, VT):***

The Batten Kill is very prone to ice jamming. Ice often jams right below the Battenville gage (BTTN6). When severe, Route 29 will flood. The Battenville gage may show spikes or irregular fluctuations associated with ice. Ice has also been troublesome at Sandgate and Arlington in Vermont.

***Hoosic River (Washington and Rensselaer Counties):***

Jams are most troublesome between Hoosic Falls and Buskirk. The Buskirk Firehouse has flooded several times. Hoosic Falls is protected by an Army Corp of Engineers concrete chute which causes the water and ice to move through and pile up near the Walloomsac junction or at Eagle Bridge. The Eagle Bridge gage (EAGN6) is often ice affected and gage readings may show spikes or irregular fluctuations associated with ice.

***Mohawk River:***

The Mohawk River is very prone to ice jamming due to its improved channel for the barge canal. During the winter, lock dams are pulled, leaving the river relatively shallow and straight. The Mohawk Valley acts to funnel west northwest winds during cold air outbreaks, which helps the cooling and freezing process. During high winds, snow will blow off the ice exposing it to the cold.

***Mohawk River (Rome and Utica Area):***

The area around Rome (RMEN6) and Utica (UCAN6) doesn't usually have ice jam problems, but the "Flats" can flood during a winter warm spell, and then this slow moving water can freeze above flood stage, keeping some roads closed.

***Mohawk River (Herkimer to Little Falls):***

Ice can break out of the West Canada Creek and pile up after entering the Mohawk River. The village of Herkimer is protected by flood walls. The opposite side, including the towns of German Flats and Fort Herkimer, and Route 5S is affected. Another spot is just east of the Little Falls gage (LTLN6) where the Mohawk River is joined by the East Canada Creek. The Little Falls gage is often ice affected and gage readings may show spikes or irregular fluctuations associated with ice.

### ***Mohawk River (Fonda to Amsterdam to Rotterdam):***

Ice can jam at “Big Nose” where the terrain can cause a bottleneck. Ice jams often form at Tribes Hill, just upstream of Lock 12 where the Mohawk River is joined by the Schoharie Creek. A rise on the Schoharie Creek will flush ice into the Mohawk where it will lose its “push” in the larger river. The dam at Tribes Hill usually isn’t significant, but there are several islands just east of the dam where ice can jam. Most homes and highways are safely out of the way and little flooding occurs at Tribes Hill or Fort Hunter. Another narrow spot is at Sprakers where ice can hang up and jam.

The city of Amsterdam is protected by flood walls.

At Rotterdam, below lock 9, there is large damage potential at the Schenectady International Chemical Plant. Ice has also caused flooding and damage to the canal lock.

### ***Mohawk River (Schenectady and Rexford Area):***

Most of the jam potential lies in Schenectady. Just below the GE plant the river widens out by the Western Gateway Bridge. About a half mile downstream is the railroad bridge which has numerous piers in the water, an ideal obstacle for the ice. Just upstream of the Gateway Bridge is Schenectady Community College. The parking lots, athletic fields, and Begley Hall are in the flood area. Between these bridges lies the Stockade neighborhood of Schenectady. This neighborhood is unprotected and can flood easily.

Jams also occur at Rexford or at the Knolls near the Atomic Power Lab. There is an abrupt bend in the river and the channel is narrow. Sometimes the ice jams on the sheet ice behind Vischer Ferry Dam.

To aid in real-time assessment of the ice jam threat in this section of the Mohawk River, the United States Geological Survey (USGS) is monitoring river elevation at four streamgages between Locks 7 and 8 in cooperation with the New York State Department of Environmental Conservation's Mohawk River Basin Program, the New York State Power Authority, Brookfield Renewable Power, and Union College. Current assessments of ice-related backwater as well as live webcams showing ice jam-prone locations are available at <https://ny.water.usgs.gov/flood/MohawkIce/>.

### ***Mohawk River (Halfmoon, Crescent and Cohoes):***

A large crescent-shaped dam across the Mohawk just west of Cohoes Falls backs up a lake that's about five miles long and almost a mile wide in some areas. This extends west to Vischer Ferry. This area is lined with homes and some commercial property very close to the water. The lake usually freezes quite early in the season and the ice can get quite thick. The lake is divided in two by a narrows near Halfmoon and Dusbach Ferry where the Twin bridges of the Northway cross. Ice can jam in this narrow channel, and water will rise quickly and threaten homes and a restaurant. Below the Crescent Dam the ice is usually pulverized in the Cohoes Falls. However, some damage did occur in Waterford in 1964 when an upstream jam broke and released a sudden surge over the falls into the village.

### ***Northern Mohawk River Tributaries:***

#### ***West Canada Creek:***

The West Canada Creek does not usually have ice jam problems due to surges caused by hydroelectric generation at Hinckley, Prospect, and Trenton Falls.

#### ***East Canada Creek:***

The East Canada Creek flows south from the southern Adirondacks. Severe ice jams have occurred between the village of Stratford and the hydroelectric plant at Ingham Mills including in the village of Dolgeville.

#### ***Caroga Creek:***

Both Freeze up and Break up Ice Jams have occurred on Caroga Creek since 2000. Problems can occur along the creek in both Fulton and Montgomery Counties.

### ***Northern Mohawk River Tributaries, Herkimer County:***

Ice piles up at confluence with Mohawk/Erie Canal. Often closes NY State Route 5 so cars have to detour to State Route 5S on either the North Railroad Street bridge or Dyke Road bridge. Creeks that can cause problems in this area include Breidenbecker Creek, Burch Creek, Sterling Creek and Pratt Creek.

### ***Southern Mohawk River Tributaries:***

These include the Steele Creek, Moyer Creek, Fulmer Creek, Otsquago Creek, Nowadaga Creek and Canajoharie Creek. These creeks flow north in deep valleys, so little sunlight reaches the rivers in the winter. Lake effect snows help cool the water earlier in the winter and snow flakes help seed frazil ice formation allowing for early ice development. At a given temperature, this allows for thicker than average ice on these creeks. Even in a warmer than average winter, ice may be a problem here. Towns affected include Ilion, Mohawk, Fort Plain, Danube and Canajoharie.

### ***Catskills:***

#### ***Schoharie Creek:***

Above Schoharie Reservoir where the West Kill and the Batavia Kill merge with the Schoharie Creek is an area where ice jams can form. The jams then progress down river and can hang up on the thick sheet ice that forms on the reservoir. In 1979 an entire dairy herd was drowned in a barn when water suddenly backed up behind a jam.

Below the Blenheim Gilboa power station, ice jams can cause minor problems in Schoharie and Central Bridge. Further downstream, there was a 3 mile long ice jam in Feb 2004 that backed up on the Route 5S bridge that crosses the Schoharie Creek in Montgomery County. This jam caused minor flooding and damage to many trees.

#### ***Catskill Creek:***

Ice problems on the Catskill Creek usually occur where it flows into the Hudson River. In that area ice has been heaved onto waterfront property and in some cases damaged boats and docks.

#### ***Esopus Creek:***

Little or no ice problems on the Esopus Creek. Above Ashokan Reservoir, it is free flowing and often warmed by water flowing from the Schoharie diversion tunnel. Snow usually accumulates quite deeply in the basin, and the basin is lightly populated above the reservoirs. The Ashokan Reservoirs will impound any ice that moves down from upstream. Below the Ashokan Reservoirs, the Saw Kill and Platte Kill enter the Esopus in a gorge so any ice jamming there is not usually a problem.

#### ***Saw Kill:***

The Saw Kill is rocky and shallow, and roads and homes are built only a few feet above the normal high water. During a cold winter, a sudden thaw will likely cause ice jams and flooding along the Saw Kill.

### ***Rondout Creek:***

Ice jams occur near Accord and Kerhonkson and sometimes result in flooding of U.S. Route 209. Ice may also jam at Eddyville. Rosendale is protected by floodwalls.

Ice in the tidal portion of Rondout Creek, near the confluence with the Hudson River, can damage riverfront property in Kingston. Flooding occurs along Strand Street as well. There are several businesses affected.

### ***Wallkill River:***

Most of the Wallkill River is part of NWS Upton's area of responsibility. Within the NWS Albany area, there is a ten mile stretch between the Gardiner gage (GRDN6) and the Dashville Hydroelectric station including the village of New Paltz where ice can jam.

### ***Wappinger Creek:***

Ice jams have occurred in several locations along this twisty stream, especially near Shady Brook Trailer Park. The jams have forced the park's evacuation at times.

### ***Roeliff Jansen Kill:***

A long stream in Columbia County with a history of ice jam problems, especially near Silvernails.

### ***Housatonic River:***

#### ***Berkshire County, MA:***

We have not had any reports of ice jam problems in the Berkshire County part of the Housatonic.

#### ***Litchfield County, CT:***

##### ***Kent:***

Ice jams frequently occur between Falls Village and the upper end of the Bulls Bridge pond near Kent, Ct. Route 7 is close to the river as are homes and businesses and damage potential is high.

##### ***New Milford:***

This is usually the major ice jam trouble spot on the Housatonic River. The Tenmile River often rises quickly and can dump a shot of water and ice into the Housatonic while the Housatonic is relatively low. This can jam near Gaylordsville and then move south. It then can hang on the old mill dam, in an area known as "Lovers Leap" or in "The Gorge". After that the ice moves down into Lake Lillinonah.

***Below New Milford:***

Lakes Lillinonah (Shepaug Dam) and Zoar (Stevenson Dam) usually freeze over with ice in the winter. However, the ice usually remains behind the dams and disintegrates in the spring. Some minor problems can occur near Shady Grove just below Shepaug Dam. Ice is not a problem on the Housatonic below Stevenson Dam.

***Farmington River:***

***Otis, MA to Colebrook, CT:***

Ice jams on this river between Otis and New Boston, MA. Jams have raised the water level high enough to threaten U.S. Route 8.

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