

**State of Maine  
River Flow Advisory Commission  
Report on Current Hydrologic Conditions  
March 24, 2005**

**Overview:**

A followup spring meeting of the River Flow Advisory Commission took place Thursday, March 24, 2005. The Commission meets annually in late winter to share information, examine potential for spring flooding and to renew operational protocols. They met previously on March 3, 2005, and reported that flood potential would increase toward the end of March because snowpack and river ice conditions would persist, due to below normal temperatures. This report summarizes the information presented on current hydrologic conditions.

Throughout this report, Internet addresses are listed for each category of information. The River Flow Advisory Commission web site provides a portal to all these different sites. That web site address is **[www.maine.gov/rfac](http://www.maine.gov/rfac)**. This site provides a connection to the ever-changing information critical to monitoring flood potential in the state.

At the end of the report, additional sources are provided for further information.

**Current Conditions and Flood Potential:**

***Stream Flow and Headwater Storage Levels:***

Stream flows were in the normal range for all of Maine.

River basin managers report headwater storages in the normal range for pre-spring drawdown levels. In the Androscoggin and Kennebec basins, spring drawdown is substantially complete, and flows out of the storages are being slowed. The spring drawdown process lowers reservoir levels so that storages have room to receive spring runoff. Flow out of the storages can then be managed to the extent possible during high run-off events. Although Maine's hydro-electric dams are not flood-control dams, river basin managers provide daily information to the National Weather Service on regional conditions, and take all possible actions to control flows during high run-off periods.

For further information on stream flow:

USGS Water Resources of Maine	<a href="http://me.water.usgs.gov">me.water.usgs.gov</a> (Hydrologic Conditions Section)
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***Ice Conditions:***

River ice across the state, where measured by the USGS, is in the normal range for the time of year. In central to southern Maine, ice is eroding, weakening and breaking up naturally. This is reducing the risk of ice jam flooding in central to southern Maine.

In northern Maine, however, specifically in northern Penobscot and Aroostook Counties, river ice is still solid and locked in, with a substantial snow cover.

A quick warm-up with moderate rain can generate ice jamming. Emergency managers are urged to report observed ice jams or ice movement to the National Weather Service and MEMA. Ice jam formation or movement can result in rapid water rise and necessitate quick action protect life and safety.

The USGS maintains a live web camera on the Kennebec River in Augusta to provide remote “eyewitness” observation of ice and water movement. The web cam images are accessible on the Internet at <http://me.water.usgs.gov>

US Coast Guard has completed ice-breaking operations in the lower Kennebec River. The Kennebec is reportedly open from Sidney south.

For more information on ice conditions:

Northeast River Forecast Center	<a href="http://www.nws.noaa.gov/er/nerfc">www.nws.noaa.gov/er/nerfc</a>
USGS	<a href="http://me.water.usgs.gov">me.water.usgs.gov</a>

### ***Snowpack:***

A full statewide snow survey was conducted March 21<sup>st</sup> and 22<sup>nd</sup>. Despite a week of excellent melting conditions in the southern half of the state (warm sunny days and cool nights), water content levels did not change significantly from the prior week’s measurements. The snowpack has become more dense, meaning that it has less capacity to absorb any rainfall but has not lost much of its water content.

The survey showed water content in the snowpack to be significantly above normal from northern Maine down through most of the western part of the state. Most eastern portions of the state are in the normal range. Water content ranges from 7 to 12 inches across the state.

The Maine Cooperative Snow Survey conducts surveys at sites across Maine from January until the snowpack is gone from the headwaters of our major rivers. Cooperators measure snow depth and water content at specific sites. The critical measurement “snow water equivalent” quantifies the amount of water that could potentially run off into the river basins. Snowmelt alone does not generally cause flooding in Maine, but can add to the runoff caused by rainfall.

Contributors to the Maine Cooperative Snow Survey include Federal and State agencies, hydroelectric power and paper companies and Canadian and New Hampshire environmental agencies.

It is estimated that because of the overall amount of snow on the ground, snow surveys will continue through the end of April. For more information on snow survey data, updated weekly with every survey through the spring:

Maine Cooperative Snow Survey	<a href="http://www.maine.gov/mema/weather/snow.htm">www.maine.gov/mema/weather/snow.htm</a>
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### ***Weather Outlook and Flood Potential:***

Temperatures will remain cool through Monday or Tuesday of next week (March 28<sup>th</sup> and 29<sup>th</sup>). Thereafter, a warming trend and more active precipitation pattern is expected.

While no specific weather event is predicted, it was noted that this pattern shift increases the possibility of a sudden warm-up or rainstorm, which, coupled with the above normal snowpack, could produce flooding. This set of conditions elevates the flood potential to above normal for the time of year.

The most important single factor in determining the severity of flooding is rainfall, how much and in how short a period of time. Major flooding on Maine rivers does not generally occur from snowmelt alone.

The potential for ice-jam flooding is reduced in central to southern Maine as ice is eroding naturally and the rivers are opening. However, ice jam flooding in northern Maine is a concern as long as large amounts of ice remain in the rivers. Ice jam flooding cannot be forecast. Local observation is

critical as ice begins to break up and move. Ice jams can cause sudden flooding above the jam, as the water backs up, and below the jam if it breaks and releases a large amount of water.

The National Weather Service Forecast Offices in Caribou and Gray issue Flood Potential Statements every two weeks throughout the spring. These reports will examine all current hydrologic factors and give an overall assessment of flood potential. Both offices are scheduled to issue Flood Potential Statements on Friday, April 1.

For more information on flood potential and for flood watches and warning should they arise:

NWS Gray	<a href="http://www.weather.gov/gray">www.weather.gov/gray</a>
NWS Caribou	<a href="http://www.weather.gov/caribou">www.weather.gov/caribou</a>
NWS Flood Forecasts/MEMA site	<a href="http://www.maine.gov/mema/weather/flood.htm">www.maine.gov/mema/weather/flood.htm</a>

### **Preparedness and Mitigation:**

#### ***Flood Insurance and Floodplain Management:***

The State Floodplain Management Program stresses that flooding is always a threat to properties located within a floodplain, but even more so during winter's icing and spring rains. Many people believe that their homeowner's or business owner's insurance policy will cover any flood-related losses but unfortunately, these insurance policies DO NOT cover flood-related damages. In order to receive insurance protection related to flood damage, property owners and renters need to purchase a separate flood insurance policy. For more details on the policies available, owners and renters should contact their insurance agents. There is a **30-day waiting period, before a new policy goes into effect.**

It is estimated that up to 75% of homes and businesses in floodplains in Maine are NOT covered by flood insurance. The average coverage per flood insurance policy in Maine is \$151,744, and the average annual premium is \$635. As long as a community participates in the National Flood Insurance Program, flood insurance is available for any property in the community.

Additional assistance is available through the Maine Floodplain Management Program at the State Planning Office by calling 1-800-662-4545

The State Planning Office and the Maine Emergency Management Agency, in partnership with the Federal Emergency Management Agency (FEMA) have ongoing programs stressing "mitigation", or the reduction of risk from disasters. Flood mitigation can be as simple as moving perishable items out of a basement, elevating a furnace or improving drainage for a road that always floods. It can be as far-reaching as moving entire neighborhoods out of the floodplain.

Flooding is Maine's most costly hazard, affecting some community in the state every year, sometimes with disastrous results. Mitigation measures can not only save repair dollars in the long term, but may even make a community more attractive to development and business investment.

For more information on floodplain management and mitigation:

State Planning Office, Floodplain Management Program	<a href="http://www.state.me.us/spo/flood">http://www.state.me.us/spo/flood</a>
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### ***Preparedness and Safety:***

Preparedness is key to minimizing the impact of flooding or any emergency. Individuals and families, businesses, schools and communities benefit from reviewing their vulnerability to flooding and ensuring that they have workable plans for dealing with the event. Everyone should stay aware of National

Weather Service forecasts as the spring progresses, and talk to local officials and County Emergency Management Agencies if they have questions about flood preparedness in their communities, or how to build an emergency plan for family, business or school.

**It is also critical during a flood event that all citizens heed all official warnings.** The Commission noted that its number one public safety concern is people driving through flooded roadways. During a flood no one should drive on submerged roads, as the stability of the road may have been severely damaged by flood waters. Highway crews will place signs and barricades to warn of flooded sections of road. Motorists who ignore these warnings and drive through flooded areas are gambling with their own safety and that of their passengers. **Nationwide, most flooding deaths occur when vehicles are caught in flood water.** In the southern Maine flood of October, 1996, a life was lost as a result of a vehicle being trapped in flood water.

Motorists should always seek an alternate route around flooded areas and avoid taking unnecessary chances by driving through flooded areas. According to the National Weather Service, even 6 inches of fast-moving flood water can knock a person off his feet, and a depth of two feet will float a car. The National Weather Service has adopted the slogan: "Turn Around, Don't Drown" to accentuate this important message.

The National Weather Service Forecast Offices in Caribou and Gray conduct Flood Awareness Day on Friday, March 4. Both offices put out special flood preparedness and safety information. Nationally, FEMA and the National Weather Service are observing March 21<sup>st</sup> through the 25<sup>nd</sup> as Flood Awareness Week. For more information on flood preparedness and safety:

MEMA Flood Preparedness Page	<a href="http://www.maine.gov/mema">www.maine.gov/mema</a>
NWS Caribou	<a href="http://www.weather.gov/caribou">www.weather.gov/caribou</a>
NWS Gray	<a href="http://www.weather.gov/gray">www.weather.gov/gray</a>
County Emergency Management Agencies	<a href="http://www.maine.gov/mema/county.htm">www.maine.gov/mema/county.htm</a>

#### **Important Factors for Springtime Floods (in order of relative importance):**

- 1) **RAINFALL:** This is the most important factor in determining the magnitude of significant floods in Maine. If precipitation during April and May are normal and evenly distributed, then streamflow will be in the normal range. However, if significant rainfall occurs over a short period of time, flooding could result.
- 2) **SNOW COVER:** This is a secondary factor and can add to rainfall events. As the snow pack becomes more "ripe" (nearly saturated), it can melt quickly and significantly add to a flood peak. The most accurate measurement of snow cover is "snow water equivalent". Snow water equivalent is the amount of liquid water contained in the snow. Snowmelt alone should not produce major floods.
- 3) **RIVER ICE:** Ice jams can cause increased damage by temporarily blocking rivers and streams and causing higher water levels behind the jam. Peak flows downstream increase when jams break up and quickly release stored water.
- 4) **TEMPERATURE:** Warm days with freezing night temperatures allow a gradual melting and runoff of the snowpack. A sudden warm up, especially when coupled with significant rainfall, can send large amounts of runoff into rivers and streams.
- 5) **RESERVOIR STORAGE:** Maine's headwater storage reservoirs typically reach their annual low water levels in March. These reservoirs can moderate downstream flood peaks if rainfall occurs above the storage dams while the reservoir's water levels are down. The reservoir systems have limited ability to moderate flood peaks in the lower parts of the river basins if large amounts of rain fall or if heavy rains fall downstream of the storage dams.

#### **Conclusion:**

The River Flow Advisory Commission found that as of March 24 *flood potential in Maine is elevated by the significantly above normal snowpack water content levels across the state, as well as the ice that remains in northern Maine rivers.*

The current conditions information in this report represents a “snapshot” of conditions throughout the state as of March 24, 2005. However, many new factors will influence the flood potential in Maine as the spring progresses.

National Weather Service and emergency management reports should be watched throughout the spring, and local officials should monitor the flood-prone areas for each community. In particular, rivers should be monitored closely as ice begins to break up and move, as ice-jam related flooding can arise quickly and have locally devastating impact. Property owners, business owners and renters in flood-prone areas should check their insurance coverage to be sure that they are protected against flooding damages.

The Maine River Flow Advisory Commission is composed of representatives from major river basin management operations, state agencies, federal agencies and the University of Maine. The Commission was originally formed after the spring floods of 1983 to improve the exchange of hydrologic information collected by the members, to review the data, and to provide information to emergency action agencies and the public. It was created in statute by the Legislature in 1997.

The Commission remains concerned about flood potential factors. No additional meeting dates have been set, but all members will continue to monitor conditions closely and exchange information. A follow-on meeting will be held if needed.

#### Information Resources:

For additional information on particular aspects of this report, please contact:

<b>Art Cleaves</b> , Maine Emergency Management Agency	Flood preparedness and mitigation	207-624-4400
<b>Bob Lent</b> , U.S. Geological Survey	Stream flow, ice conditions, snow survey	207-622-8202
<b>Tom Hawley</b> , National Weather Service, Gray, Maine	Flood potential for central and southern Maine; flood forecasting	207-688-3216
<b>Mark Turner</b> , National Weather Service, Caribou, Maine	Flood potential for northern and eastern Maine; flood forecasting	207-492-0180
<b>Marc Loiselle</b> , Maine Department of Conservation	Snow survey	207-287-2801
<b>Lou Sidell</b> , State Planning Office, Floodplain Management Program	Floodplain management, flood insurance and mitigation	207-287-8063

Links to further information on all sections of the report, updated as conditions change:

<http://www.maine.gov/rfac>