Project Factsheet for:
Snowmelt Flood Potential

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Project Location Information

Location: Throughout the Rock Island District
River Basin(s): Des Moines, Illinois, Iowa / Cedar, Mississippi, Rock
State(s): IA , IL , MN , MO , WI
Congressional District(s): IA-1 , IA-2 , IA-3 , IA-4 , IA-5 , IL-11 , IL-13 , IL-14 , IL-15 , IL-16 , IL-17 , IL-18 , IL-19 , IL-2 , IL-3 , MN-1 , MN-7 , MO-6 , MO-9 , WI-1 , WI-2 , WI-3 , WI-5 , WI-6

Status

SUBJECT: Snowmelt Flood Potential

Purpose: To provide information about snowmelt flood potential in the Rock Island District for the spring of 2009.

Current Information: TheNational Weather Service (NWS), North Central River Forecast Center (NCRFC) - Chanhassen, Minnesota, forecasts for spring 2008

The current probabilistic outlook for flood potential for the Upper Mississippi River Basin for spring 2009 was issued by the NWS on January 19, 2009 . This outlook provides a probabilistic assessment of flood potential using the terminology presented. Probabilistic crest outlooks are updated monthly as risk factors for flooding are evaluated. These outlooks provide a 90-day probabilistic assessment of flood potential at mainstem and tributary gage locations in the Upper Mississippi River Basin and indicate the probability in percent that minor, moderate, or major flooding will occur (see terminology below). In addition they provide information regarding the probability a given river stage will be equaled or exceeded during the current forecast period which extends through April 26, 2009.

At most tributary and mainstem locations within the Rock Island District the probability of at least minor flooding occurring this spring is between 30 and 70 percent through the month of April. Along the Mississippi River the probability of flooding increases from upstream to downstream due to the impact of tributaries. For example, at Dubuque, Iowa, the probability of minor flooding is only 30 percent, while at Hannibal, Missouri, the probability approaches 70 percent.
Historically, the probability of exceeding flood stage during any given year is about 50 percent. Due to wetter than normal soil conditions prior to entering the winter as a result of well above normal rainfall in the Upper Mississippi River watershed during 2008, the likelihood of flooding this spring due to snowmelt runoff is higher than normal at some locations. However, warmer than normal temperatures in early February has resulted in a significant reduction in the snowpack, which could prove to be a mitigating factor, limiting the flood threat. Also, the current 90-day climate outlook indicates above normal temperatures and normal precipitation can be expected from February through April. Based on these indicators, there is a somewhat higher than normal probability that at least minor flooding from snowmelt runoff will occur at some locations in the watershed this spring. However, the probability of major flooding is currently less than 20 percent at all locations within the Rock Island District and less than 10 percent at the majority of

locations. The next 90-day probabilistic outlook will be issued by the NCRFC near the end of February and will extend through the month of May, covering the entire spring flood period.

Point of Contact: Jim Stiman, Chief of the Water Control Section, Hydraulics Branch, Engineering Division, at telephone number (309) 794-5849.

Description

Terminology

- Minor flooding: A general term indicating minimal or no property damage, but possibly some public inconvenience.
- Moderate flooding: The inundation of secondary roads; transfer to higher elevation necessary to save property; some evacuation may be required.
- Major flooding: A general term including extensive inundation and property damage (usually characterized by the evacuation of people and livestock and the closure of both primary and secondary roads.

The risk for snowmelt flooding is determined by several factors, including: soil moisture, soil frost, snow water equivalent, river ice, base flows, future precipitation, and rate of melt. A gradual or intermittent melt with below normal precipitation would decrease the flood risk. Above normal precipitation, rapid snowmelt, and ice jams would increase the flood threat. On average, the month with the greatest snowfall in the Upper Midwest is March.

"These projections of river stages and reservoir levels are based on current observed states of streamflow, soil moisture, and snow pack, coupled with future precipitation and temperature patterns and anticipated operational hydrologic changes such as reservoir releases and canal diversions. "Outlooks" are provided for long-range (weeks to months) projections based on climatological patterns of precipitation and temperature. "Forecasts" are provided for short-term (days) projections based on future forecasted patterns of precipitation and temperature. The uncertainty of these products varies from season to season and site to site. In recent years, outlook crests have been above the observed crest about as often as they have been below the observed crest. The uncertainty of forecasts tends to be less than the uncertainty of outlooks due to their shorter lead time. Users of these products are encouraged to contact their nearest National Weather Service (NWS) Forecast Office for continued updates of meteorological conditions which can have significant impacts on flood planning and flood fighting activities."

Authority

SI - Special Interest --

Project Manager Information

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