



**TO:** Committees of the Platte River Recovery Implementation Program (PRRIP or Program)  
**FROM:** Executive Director's Office (EDO)  
**SUBJECT:** March 2019 Platte River Flooding  
**DATE:** March 25, 2019

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## Overview

Record flooding occurred through a large portion of eastern Nebraska following a mix of snow and heavy rain in mid-March 2019. The rain melted snow that had accumulated from previous storms and frozen ground prevented much runoff from infiltrating into the ground. While the Program's Associated Habitat Reach (AHR) of the central Platte River did not see the severity of flooding as did areas below the confluence of the Loup and Elkhorn Rivers, Platte River flows at Grand Island exceeded 10-year return interval flows.

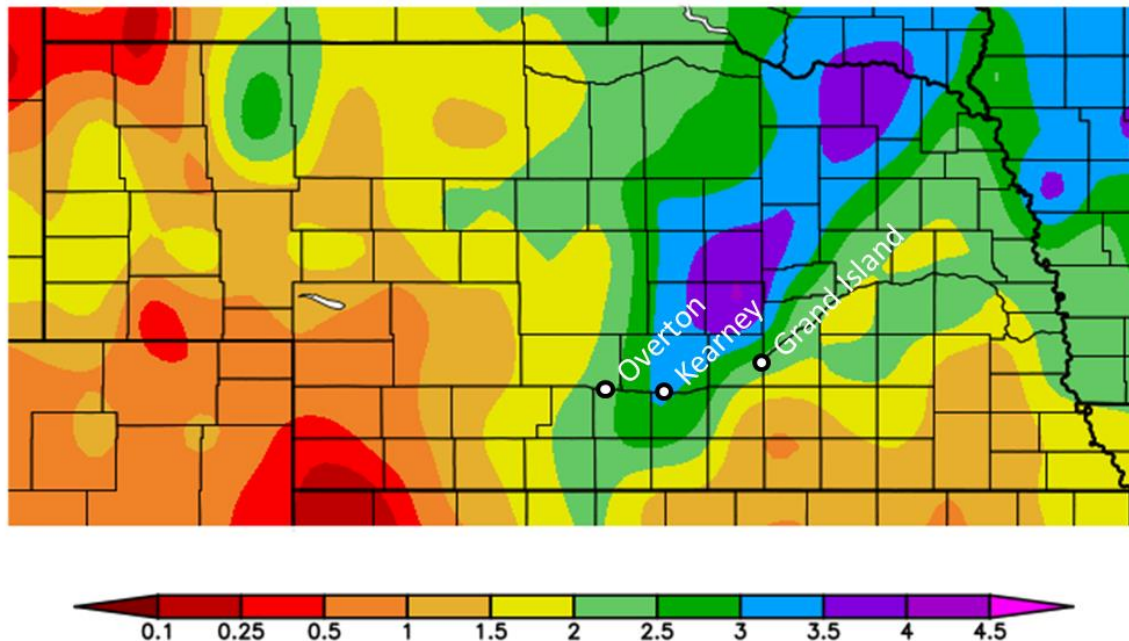
The largest rainfall occurred to the north and east of the AHR (**Figure 1**) and river flows increased dramatically from west to east, with the Platte River at Overton only seeing a peak of 6,380 cfs while the river peaked at 10,100 cfs near Kearney and at 16,100 cfs near Grand Island. Rain and snow did not reach the western portion of Nebraska and flow on the North Platte and South Platte Rivers did not contribute significantly to the flooding downstream. River flows at the Nebraska Department of Natural Resources stream gages on the North Platte and South Platte Rivers near the town of North Platte are shown in **Figure 2** along with Platte River flows at the United States Geological Survey's stream gages near Overton, Kearney, and Grand Island.

Flows exceeded the short duration high flow (SDHF) threshold of 5,000 cfs in all of the associated habitat reach and flows were above 8,000 cfs in most of the AHR during the March 2019 flooding. SDHF events are defined in the Program's Water Plan<sup>1</sup> as "flows of approximately three to five days in duration with magnitudes approaching but not exceeding bankfull channel capacity in the habitat reach" with the bankfull capacity in the associated habitat between 5,000 cfs and 8,000 cfs. Flows were recorded well above 5,000 cfs for 4 days at both the Grand Island and Kearney gages (this duration will increase once missing data from ice conditions is estimated). Flows were above 5,000 cfs at the Overton gage for 2.4 days. While flows throughout the AHR were generally above SDHF magnitude and duration, flows near North Platte only increased by 0.3 feet and peaked at 5.05 feet on March 14 and thus were insufficient to test the choke point structures that were built by the Program.

The Program has been monitoring the impact of flooding at various Program properties, including the Shoemaker Island tract. EDO staff is collecting pictures and videos in addition to the data collected from surface water and groundwater monitoring gages already in place at various locations. This data along with geomorphology and vegetation monitoring assessments during 2019 will help determine the impact of this event on the river channel.

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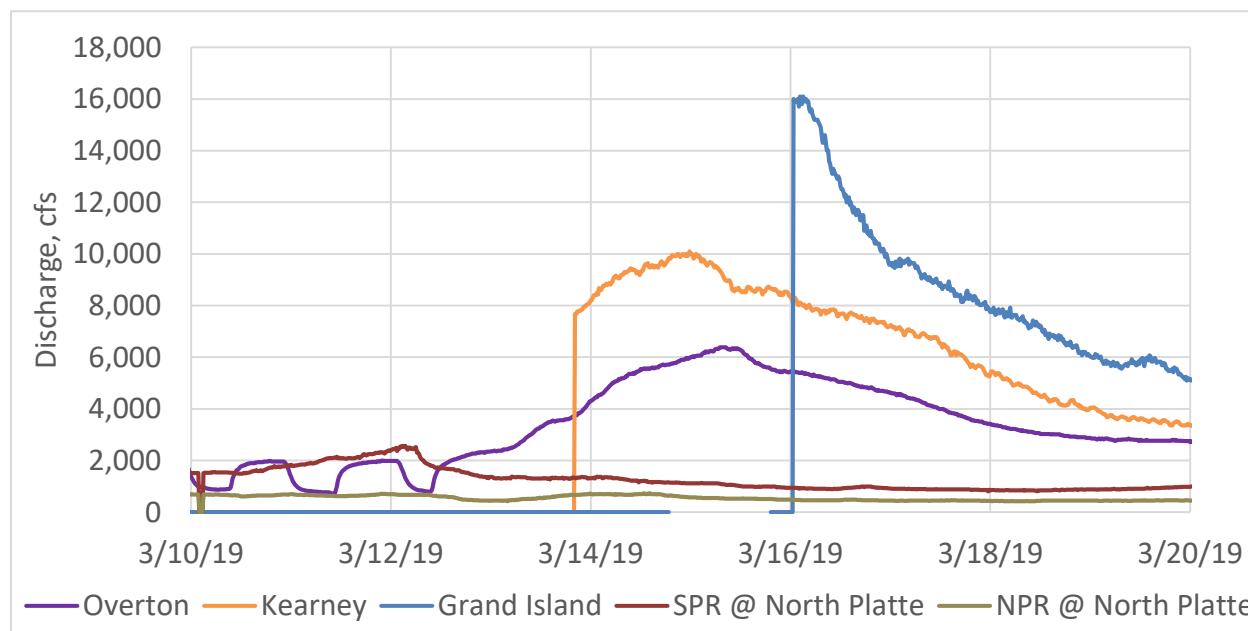
<sup>1</sup> Platte River Recovery Implementation Plan Final Program Document Water Plan – Attachment 5, Section 11, Page 9, dated October 24, 2006.



Generated 3/21/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

**Figure 1.** Nebraska precipitation March 7–20, 2019. Image source: rainfall maps provided by HPRCC website: <https://hprcc.unl.edu/maps.php?map=ACISClimateMaps>.



**Figure 2.** Instantaneous discharge during the March 2019 flooding event. All data is provisional. The Kearney and Grand Island gages were not reporting prior to the flood event due to ice conditions.





Platte River channel near the west side of Binfield during the peak of the flood event on Friday March 15, 2019.





51 Binfield West Hay Meadow during the peak of the flood event on Friday March 15, 2019.



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54 Binfield East Hay Meadow during the peak of the flood event on Friday March 15, 2019.



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56 Binfield Grazing Pasture video taken during the peak of the flood event on Friday March 15, 2019.  
57 <https://www.youtube.com/watch?v=uOlnI1OhwS0>