

PRINCETON DAM JANUARY, FEBURARY, MARCH 2024 UPDATES

From: Monday, Uriah - DNR
Sent: Tuesday, January 30, 2024
Subject: Christmas/New Year's Update: Princeton Dam Gate Settings

I did watch the river gage after Christmas and it generally held steady, then when we started to get some ice it seemed to read funny and I think it was out of commission for a while. It seemed to get back on line last week and appeared to be steadily rising, but that didn't jive with what we were seeing at Buffalo Lk and what the gage further downstream at Berlin was showing (relatively steady in both cases, despite some rain and melt). Also the USGS is not calculating flow values for the Princeton gage right now, so I didn't have much to go on.

So I have been trying to get someone to take a direct reading at Princeton Dam for me,, and finally succeeded today. Lance went by there after going to Buffalo Lake, and the reading he got at Princeton was 8.0. Currently only the one gate is open. Based on my methods for determining flow at the dam, I'd estimate flow at 750 CFS right now.

This level at the gage and this flow rate (which I expect to be sustained for a bit, until snowmelt ceases) would indicate a second gate should be opened. I'm going to arrange for someone to visit the dam later in the week, check the gage, and if it's still up there probably open a gate.

From: Monday, Uriah - DNR
Sent: Tuesday, February 6, 2024
Subject: Early February Update: Princeton Dam Gate Settings

I did have someone visit the dam on Wednesday 1/31/24 and the staff gage at the dam read 8.1 feet. One gate was already open, and we opened a second gate halfway, to bring the total openings to one and a half gates.

Today I had him check again, and the gage read 8.2, so we opened the partially opened gate all the way, so now two gates are fully open.

I will be through the area on Thursday and will check the reading then, to see how levels reacted to the adjustment. I anticipate it will read about 7.85 but I want to verify. I will give you another update then, and some projection of anticipated operation in the coming weeks.

From: Monday, Uriah - DNR
Sent: Friday, February 9, 2024
Subject: Early February Update: Princeton Dam Gate Settings

Update: I went past the dam yesterday afternoon, and even with both gates open the level still read about 8.1. Flow seems to be fairly constant – my theory is that the snow melt has been consistent and that is reflected in the flow.

Now that the snow is gone, and I don't see any precipitation in the forecast, we may see flow start to diminish. I will monitor over the weekend. If it does not start to trend down, we will contemplate a gate opening for later in the week of the 12th.

I anticipate updating you on Tuesday.

From: Monday, Uriah - DNR
Sent: Tuesday, February 20, 2024
Subject: Late February Update: Princeton Dam Gate Settings

First of all, THANK YOU to John Harter for sending daily photos of the dam staff gage. This has been very useful in tracking level trends and verifying that the USGS stream gage downstream at the bridge is operating properly.

As of yesterday, the gage at the dam reads 7.85, and two gates are open. Each day it appears to be dropping a couple hundredths of a foot. With no snow cover left, and no significant rain in the forecast, I would expect this trend to continue. Flow is in the range of 800 to 850 CFS. If a third gate were opened now, likely the level would drop to around 7.4 due to the gate opening, and then continue dropping a couple hundredths per day as flows continue diminishing. So, if we opened a gate today we'd need to return in just a few days to close it again as levels would drop to below the spillway.

Therefore, the setting will be left as-is, at two gates open.

The operation plan calls for March 1 to be the date that all 5 gates would be opened; however, the plan has that "floor" of 7.3 written in and fewer gates will be used if the level would drop below that. At this time, looking at the forecast and the flows, I would expect that the 2-gate setting will remain in place for some time, until we get some significant rain.

From: Monday, Uriah - DNR
Sent: Sunday, March 10, 2024
Subject: Princeton Dam 3/9/24

Got word that a gate was closed halfway today; it will be closed the rest of the way tomorrow or Tuesday.

Will continue to monitor weather and downstream gage. Doesn't look like rain this past Friday had much impact. Next rain expected is Thursday.

From: Monday, Uriah - DNR
Sent: Tuesday, March 12, 2024
Subject: Princeton Dam 3/12/24

Gate got closed today around 7 AM, so only 1 remains open now.

From: Monday, Uriah - DNR
Sent: Friday, March 29, 2024
Subject: Late March Update: Princeton Dam Gate Settings

To recap our operations/observations since my last update on 2/20:

- Gage readings were ~7.45 during the week of March 4. At the time, two gates were open. Little to no precipitation was forecast and concerns regarding levels were expressed by various members of the public.
- To avoid having levels at the dam fall below 7.3, a gate closure was initiated on Sunday March 10 and completed on Tuesday March 12 (halfway at a time, to avoid cutting flow off downstream too drastically).
- Since March 12, one gate has remained open, and checks of the gage every few days by Mr. Harter have shown that levels have remained between 7.7 and 7.8 up until this week's rain.
- Between 3/25 and 3/27 the watershed received about an inch of rainfall, and the gage on 3/27 read just under 8.0.

It appears the peak from the recent rain has passed, and in the absence of more precipitation I would expect the level to come down to about 7.8 again and level off. Intermittent spring rain is in the forecast, but until we get a string of wet days I do not expect the level to climb significantly. For this reason, I expect to leave the single gate open as-is for the foreseeable future. This spring so far, while lacking snow, has seemed to give us relatively regular rainfall, and the National Weather Service outlook that I saw does not indicate either a wetter- or dryer-than-normal spring ahead; therefore I do not expect that levels will drop to a point that we will need to close the last gate. If we get wet weather for some consecutive days, and the level rises over 8.1 and is expected to stay elevated, I would anticipate re-opening a gate; however, we do not plan on opening gates after modest isolated rainfalls.