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From: **Anderson, Mark W (DNR)** <mark.anderson@state.mn.us>
Date: Tue, Nov 3, 2026 at 7:36 AM
Subject: RE: Big Swan Lake
To: Chuck and Tammy Macy <tcmacy1@gmail.com>

Hi Chuck,

You are correct, Chuck. The situation is similar just about everywhere here in Central MN and is directly tied to the multi-year drought which we have been experiencing. The lowest level on record for Big Swan is 1191.12' and coincides with the major drought of 1988.

The lake level for Big Swan is not controlled by the culverts that were installed back in 2010ish. These culverts replaced a bridge system, however there needed to be an additional culvert installed to maintain hydraulic capacity at high/flood flows, so yes, definitely "highwater overflow" of sorts. The lake is controlled by a remnant dam located upstream of these culverts. I have attached an update letter from 2015 regarding these culverts.

We understand that the prolonged dry conditions across much of north central Minnesota have been challenging for many residents, businesses, and lake users. Multiple years of below normal precipitation have created what we refer to as a storage drought, where long term water stored in lakes, wetlands, streams, soils, and groundwater becomes depleted. Even when rainfall begins to improve, these systems take time to recover, and lake levels may stay lower than what people are used to.

Lake levels respond to a variety of natural factors, including precipitation, snowpack, groundwater, watershed characteristics,

and evaporation. The low water levels we're seeing now reflect several years of unusually dry conditions, not just recent weather. While the DNR authorizes outlet conditions and regulates public waters, we do not actively control lake levels on most lakes. We recognize how frustrating and disruptive these low levels can be—affecting recreation, navigation, docks, boat lifts, shorelines, and the overall appearance and use of the lakes many people care deeply about. We also look beyond a single lake. When nearby lakes, wetlands, streams, and groundwater systems are experiencing similar conditions, it points to broader hydrologic influences, such as prolonged dry weather, rather than changes to one outlet. Certainly, that's the case in this area.

A storage drought develops slowly as multiple years of below normal precipitation, combined with evaporation and plant water use, reduce water stored throughout the watershed. Unlike short term droughts, storage droughts create a deeper deficit that persists even after precipitation starts to return to normal. As recovery begins, new rainfall and snowmelt first replenish groundwater, soils, and wetlands before lake levels respond. This means lake levels can remain lower than normal for extended periods, depending on how large the deficit is and what future weather brings. Because these areas have already lost much of their stored water, they are more sensitive to additional dry spells, and severe drought impacts can appear much earlier than usual. Over the past four years, much of north central Minnesota has received 12 to 16 inches less precipitation than normal—roughly 40 to 60 percent of an average year's moisture.

Below are some common questions we've been hearing during these conditions:

Q: What is a runout elevation?

A runout elevation is the level at which water begins to flow out of a lake or wetland. Changing this elevation requires a legal process and a DNR permit.

Q: Why can’t the DNR just raise the outlet?

Adjusting an outlet elevation can affect flooding, downstream lakes or streams, and private property. Any change requires legal authority and a careful review of potential impacts.

Q: Why do the current conditions feel so different from what I remember?

Many people recall the relatively wet decades of the 1990s and 2000s. Lake levels naturally vary over long periods, and the past several years have been much drier for many parts of the state.

Q: Does irrigation cause lake levels to drop?

In some cases, irrigation can play a role. The DNR regulates water appropriations and evaluates many factors—including hydrologic conditions—when issuing permits. However, in most situations with low lake levels, regional drought remains the primary driver.

Q: Will the lake recover?

Recovery depends largely on future precipitation, snowpack, runoff, and groundwater recharge. Lakes respond differently based on their watershed size and characteristics. Some recover quickly, while others take longer.

Please know we are committed to sharing the information we have, answering questions, and continuing to work with lake associations, local governments, and property owners. Please let me know if you have any other questions. Thanks!

Regards,
Mark

