

Update of White Bear Lake Level

Presented to Environment Committee

February 14, 2012

Keith Buttleman

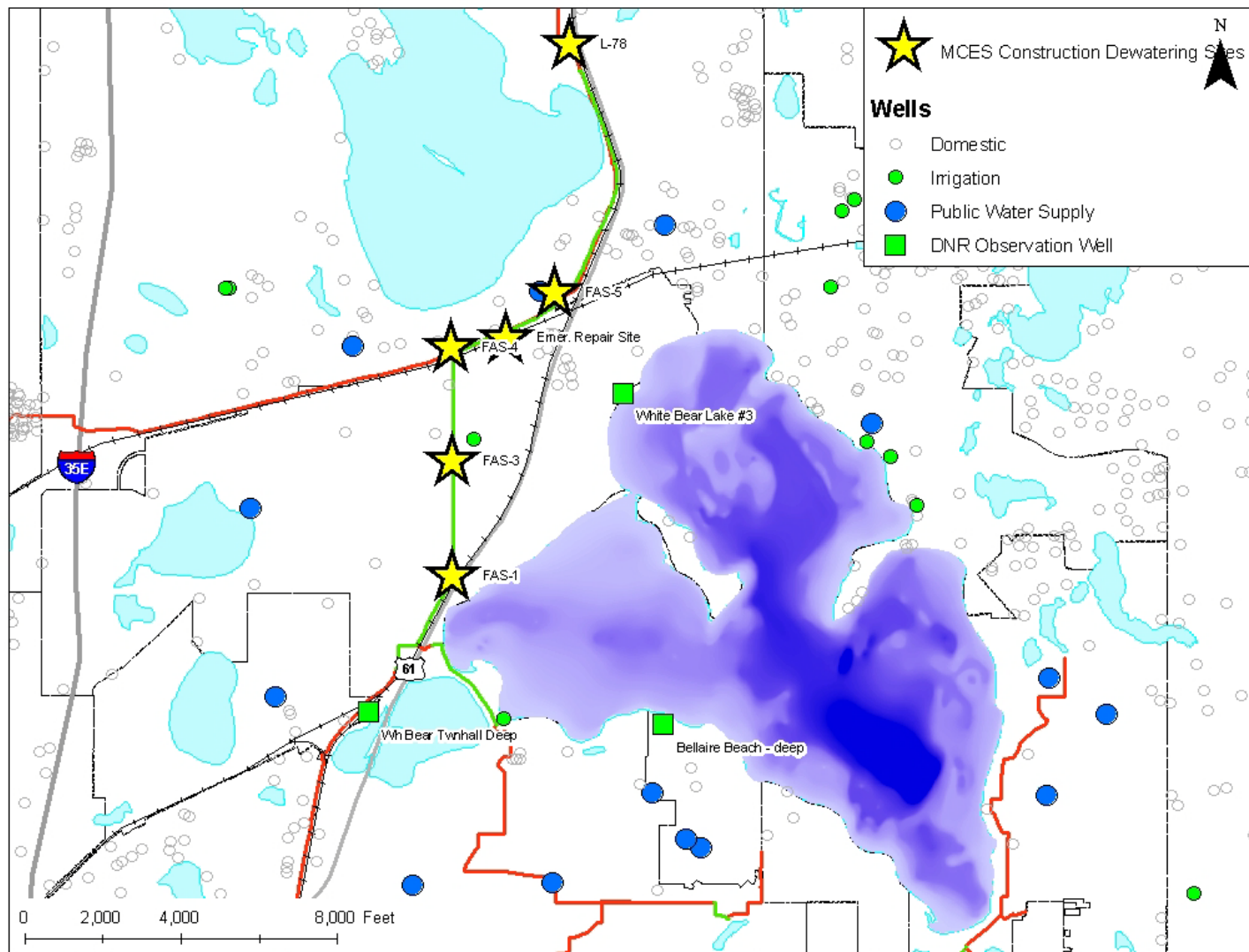
**Assistant General Manager
Environmental Quality Assurance**

Brian Davis

**Senior Environmental Scientist
Environmental Quality Assurance**

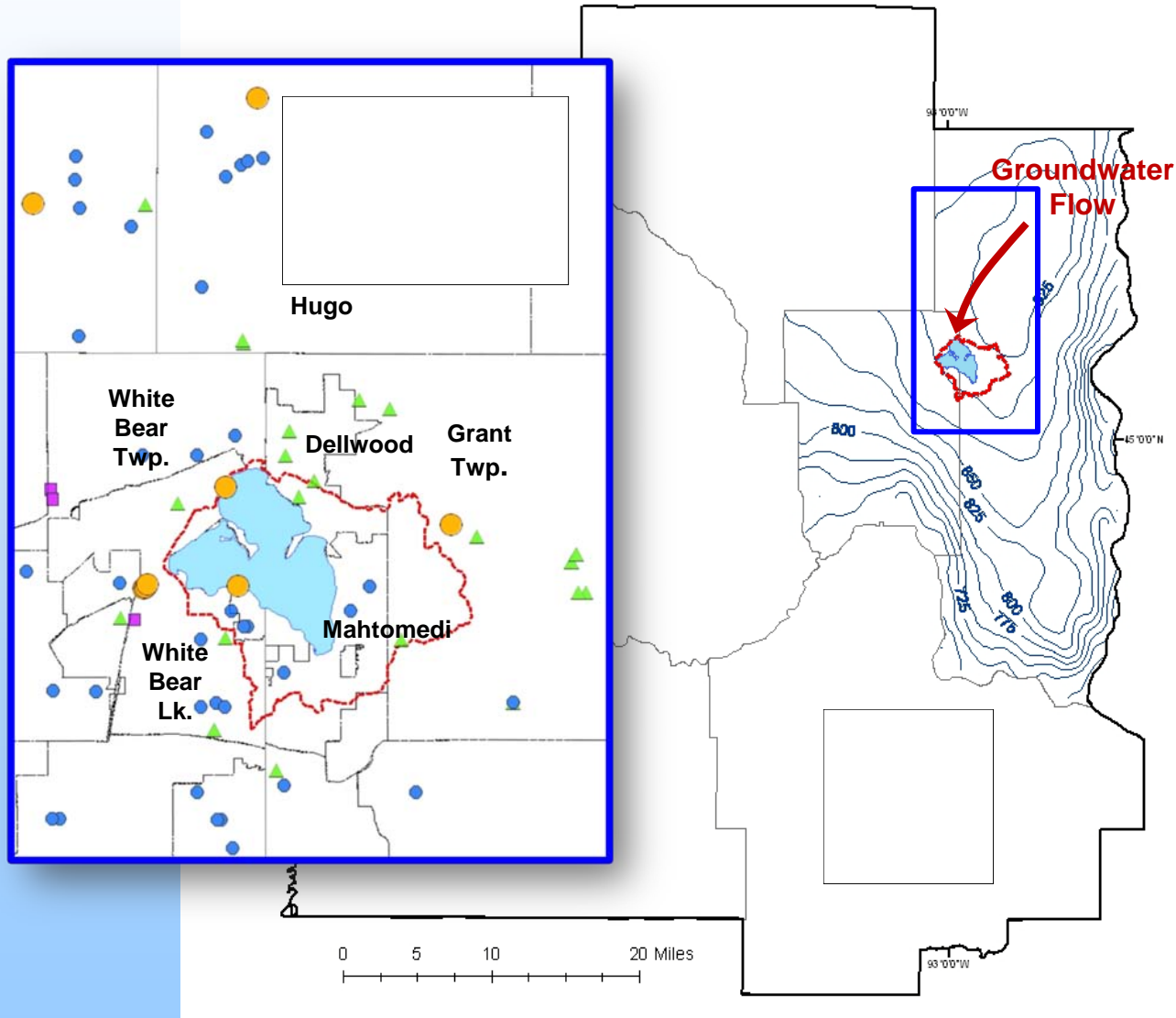


White Bear Lake





White Bear Lake





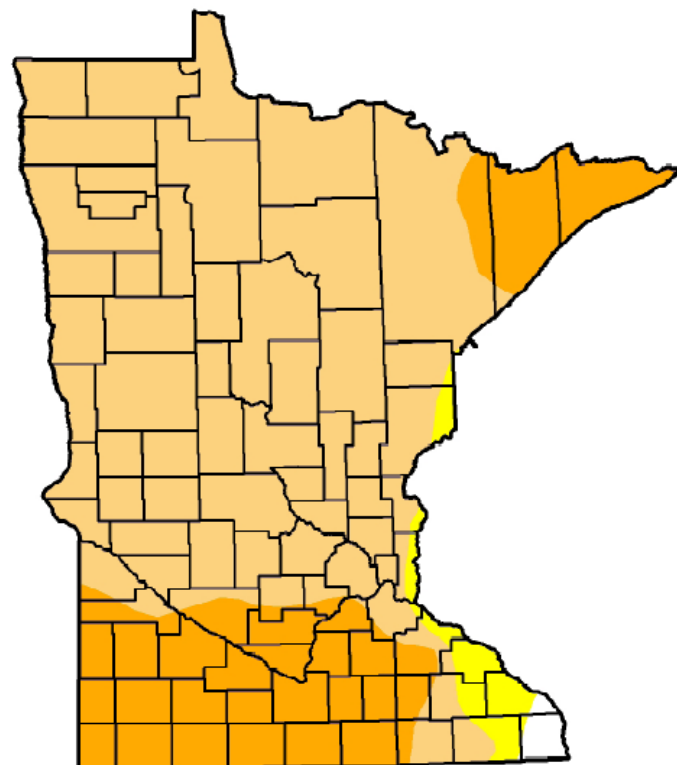
Drought Conditions

U.S. Drought Monitor Minnesota

February 7, 2012
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.79	99.21	96.12	24.08	0.00	0.00
Last Week (01/31/2012 map)	0.79	99.21	96.12	24.08	0.00	0.00
3 Months Ago (11/08/2011 map)	0.48	99.52	39.70	18.93	0.00	0.00
Start of Calendar Year (12/27/2011 map)	0.79	99.21	57.45	24.08	0.00	0.00
Start of Water Year (09/27/2011 map)	48.42	51.58	19.26	4.58	0.00	0.00
One Year Ago (02/01/2011 map)	95.24	4.76	1.76	0.00	0.00	0.00

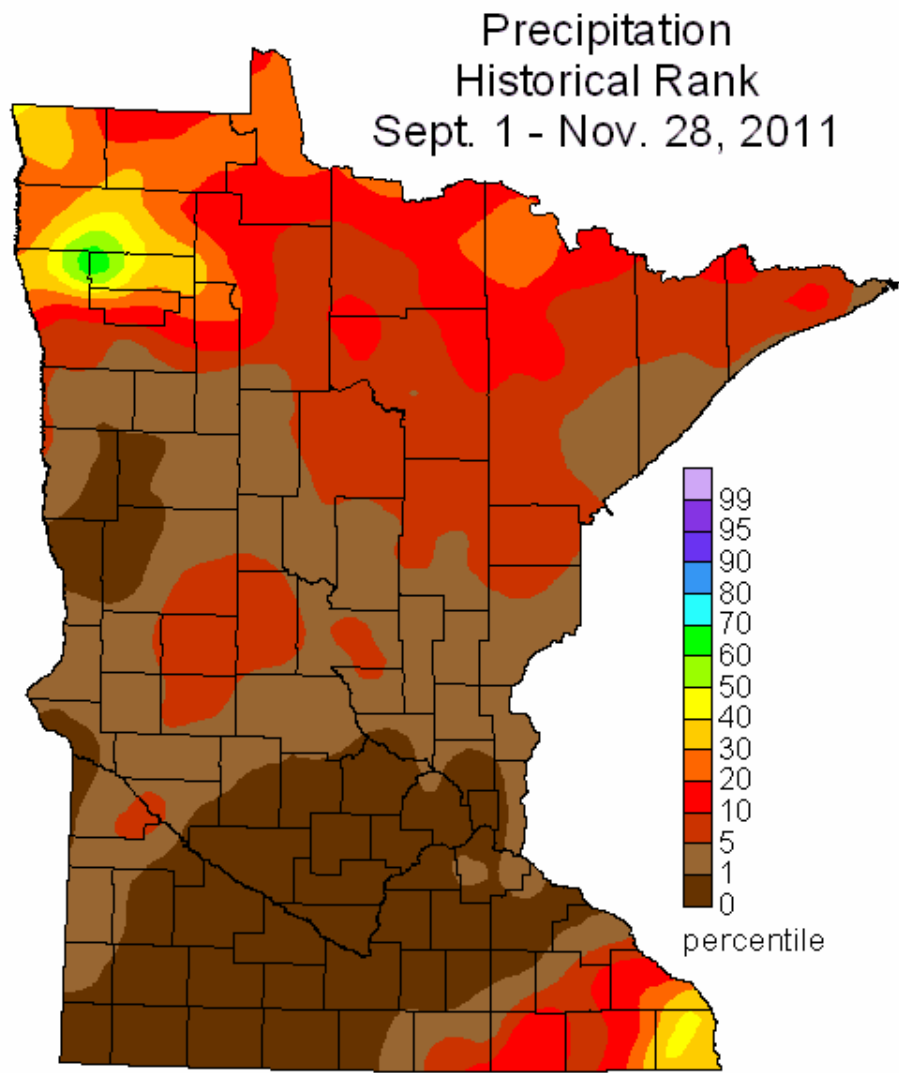


Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional



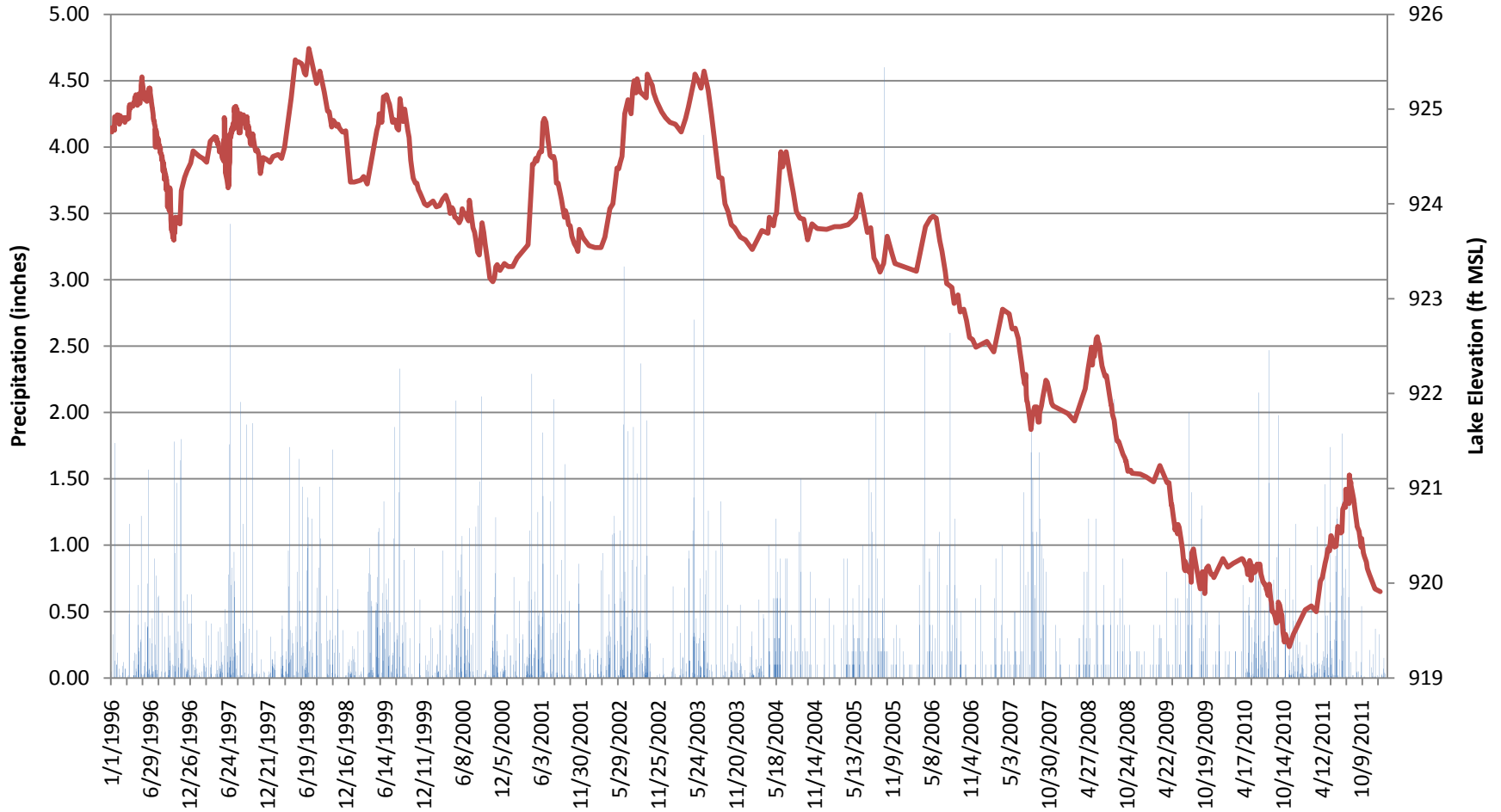
Lack of Precipitation



MNDNR State Climatology Office, 11-29-2011

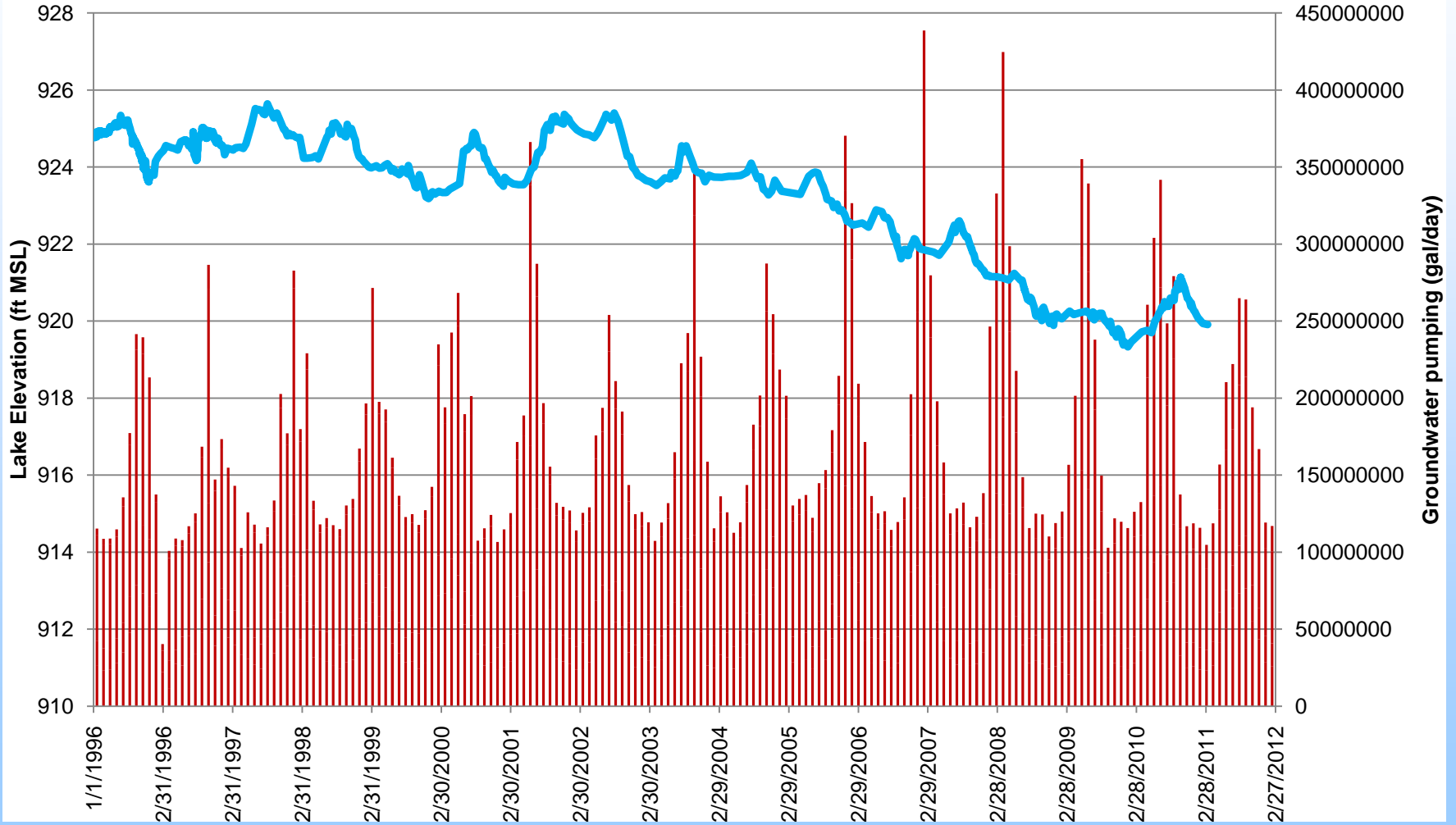


Lake Level





Groundwater Use





USGS Research

- **How does White Bear Lake respond to changes in precipitation and groundwater conditions?**
- **Analyze lake level, precipitation and pumping data**
- **Measure groundwater levels**
- **Analyze water chemistry**