

2020-21 High Water Ongoing

Silver Lake Mgmt District, 8/18/21

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Eli Lake, Portage County, flooded road, 2020-21



Long Lake, Oasis Township

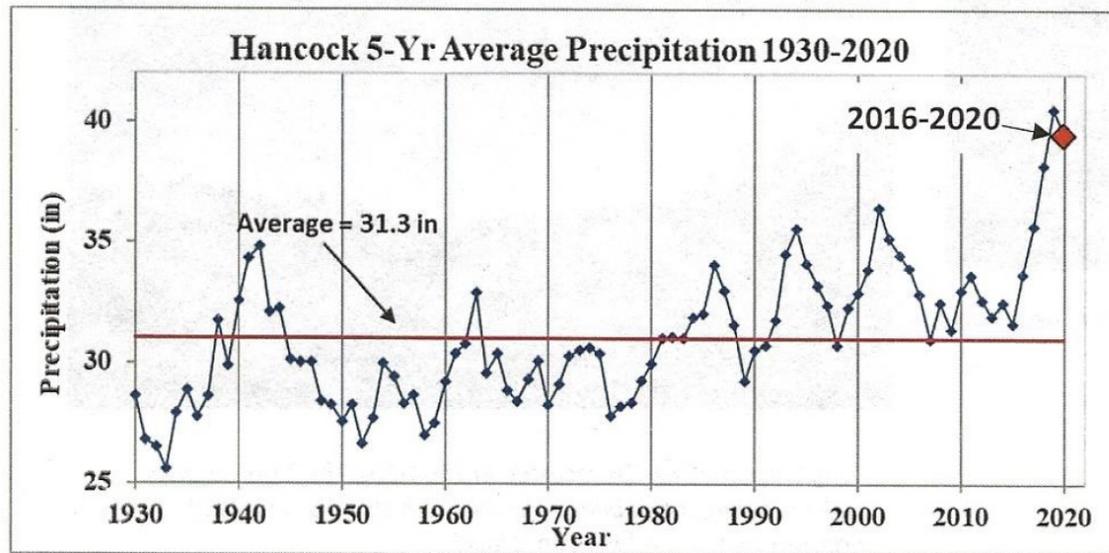
References:

- **Record Rains, slide 2**
 - George Kraft, professor Emeritus, Water Resources, UW Ext-Stevens Point
- **Historical Silver Lake levels, slide 3**
 - Waushara County, Zoning and Land Conservation, Lake level data
 - Historical data from Silver Lake Mgmt District (E.Kissinger)
 - Historical data from WI DNR and USGS

- Hancock USGS station
 - 2019 recorded 43.4" of rain
 - 12" over normal precipitation
- Long Lake, Oasis Township
 - Lake was Dry in 2017
 - Central Sands Water Action Coalition (CSWAC) pushed for irrigation pumping studies
 - Heavy farm agriculture pumping was proven to reduce water levels in Pleasant, Long and Little Plover River.
 - Water protection district formed to be managed by WI DNR
- Silver Lake, Wautoma Impact
 - Heavy farming and Irrigation occurs in western part of Waushara County
 - Much less irrigation in Wautoma and Wild Rose, groundwater table declined a little in 2006-2010 but never depleted to drought levels.
 - **Central Sands** region has not experienced a dry year since 1989
- Central Sands Region received an extra YEAR worth of precipitation from 2014-2019
 - Managing groundwater creates healthy lake, river, and stream environments.
 - Irrigation impacts on surface water, Long (Plainfield), Huron, Fish, Pine and Bohn Lakes, Pleasant, Wolf lake, Little Plover River

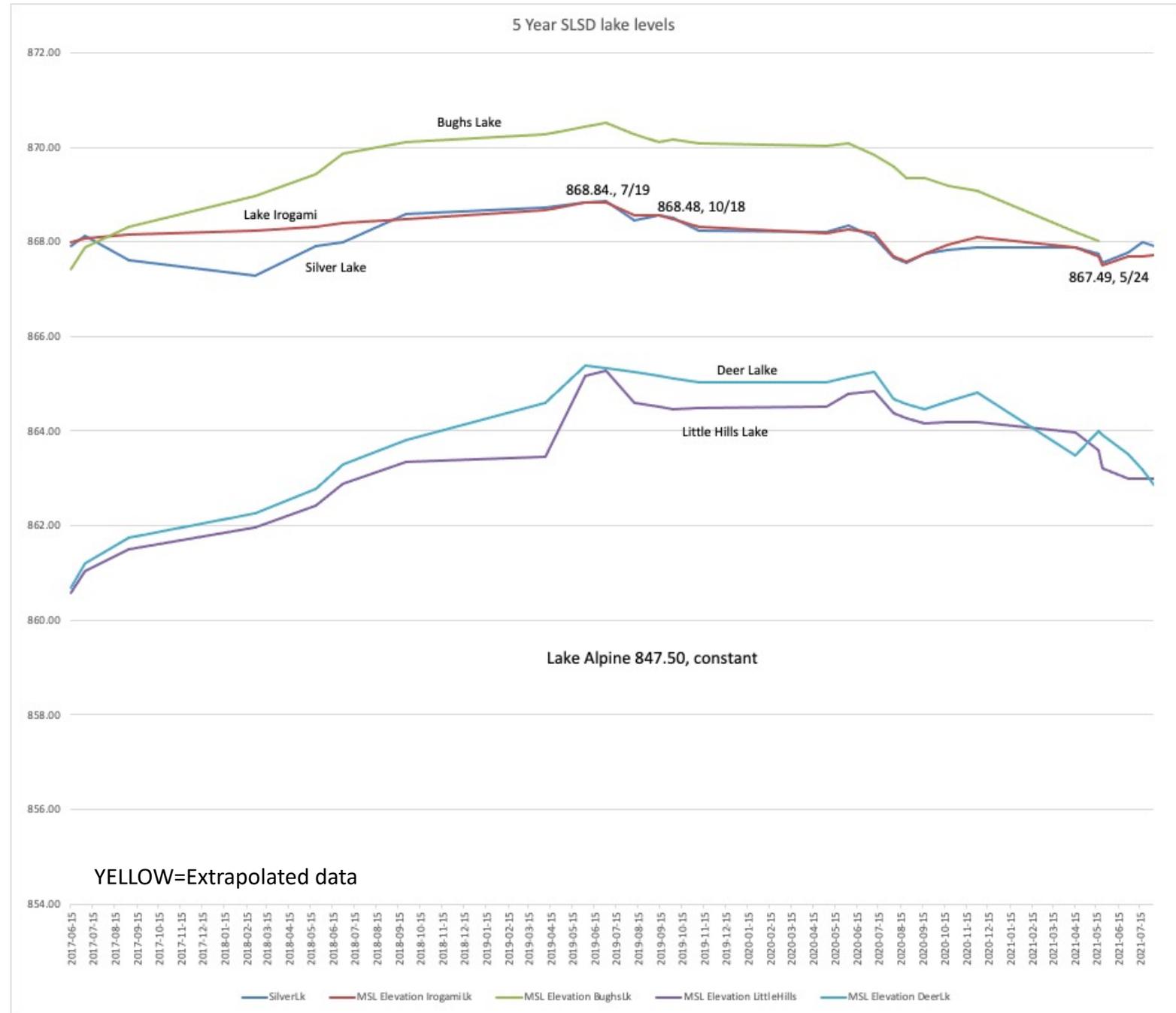
Hancock and Stevens Point USGS stations

Inches Above Average Precipitation, 2014-2020		
Year	Stevens Point	Hancock
2014	4.2	0.6
2015	8.5	3.8
2016	6.3	11.6
2017	5.5	7.4
2018	6.0	11.5
2019	12.9	11.8
2020	1.6	-1.8



5-Year, County/USGS lake Levels (2016-21)

Date	SilverLk	IrogamiLk
2015-08-26	864.74	867.17
2016-07-01	865.99	867.72
2017-06-15	867.92	867.99
2017-07-05	868.14	868.07
2017-09-03	867.60	868.15
2018-02-27	867.28	868.23
2018-05-22	867.90	868.31
2018-06-29	868.00	868.39
2018-09-26	868.60	868.47
2019-04-08	868.72	868.66
2019-06-03	868.84	868.84
2019-07-01	868.85	868.82
2019-08-09	868.46	868.56
2019-09-13	868.56	868.56
2019-10-03	868.51	868.48
2019-11-08	868.24	868.33
2020-05-04	868.20	868.17
2020-06-03	868.34	868.26
2020-07-09	868.11	868.17
2020-08-05	867.67	867.68
2020-08-24	867.57	867.58
2020-09-17	867.76	867.76
2020-10-20	867.83	867.93
2020-11-30	867.89	868.09
2021-04-15	867.89	867.89
2021-05-18	867.74	867.69
2021-05-24	867.55	867.49
2021-06-29	867.77	867.69
2021-07-19	867.99	867.71
2021-08-03	867.90	867.72



Lake Irogami Improved Weir

- Improved Weir (Completed Aug 30th, 2019)
 - 24" HPDE vertical and 120' Horizontal culvert
 - AL gate structure with lock, 24" can flow over permitted 10 CFS (6.4Mgal/day)
 - To drain one (1) foot of water from 645 acres (370-Silver, 275-Irogami) equates to 210 Mgals, would take **32 days @ 10 CFS (~4500 GPM)**.
- Weir Operational Status
 - Water flowed out weir all of 2019 and well into 2020/21. Evident by plume of open water in Feb on Irogami side of culvert.
 - 10.4" of rain received over 3 days, Sept 17th 2019
 - 10/3/2019, slide gate reduced to 50% open flow was 9.7 CFS
- 2021 Weir Operational status
 - Irogami requested the **weir to be closed May 28th**.
 - 1.6 and 1.8" rain events on June 14th-17th
 - **Weir opened June 26th , Weir closed on June 30th**
 - 2 and 2.5" rain events July 8th/9th
 - **July 19th Silver Lake Elevation 867.99 or 1 foot over OHWM**
 - SLSD requested to open, **Lake Irogami did not concur and Weir remained closed** (Silver Lake is not a party on the Weir agreement)



The FOLLY of opening and closing the weir,

- Top of slide gate is 867.77, 2" over Irogami's OHWM
- No water flows from Silver when elevation is 867.47 ft, **Silver still 5" over OHWM**
- Irogami rational on not opening was let evaporation take its normal course.
- Hot Humid (Temp 90's Dew point >60) weather negates the evaporation theory
 - August 3rd reading, 867.90 ft (7/19 **only accounted for 1.1" of water loss** 867.99 ft)
 - In a 16-day period evaporation.

Had the WEIR been Open

- Silver would have had a 5" cushion to receive water.
- Aug 7/8th rain events of 5.61 and 2.85 inches, Lake estimated to be at 868.2 ft
- Silver has dropped 2" since Weir Opened Aug 8th (10 days)

Other Options pursued

- Permanent Pump station on Silver side of Hwy 21 culvert (**\$100K, Crane Engineering Estimate**)
 - Arose from Oct 2019 High water committee meeting at Sanitary District. WI DNR stated there are avenues within regulations to move water in this manner.
 - Jim Blaszczyk, Irogami board was present, initially supported idea, but reversed position a week later.
 - Water would only be moved from Silver when weir was not flowing. Lake Irogami would act as a conduit to the weir outlet. Mutual agreement would have to occur on Silver and Irogami boards to move water.
 - No less than five (5) Irogami/Silver board exchanges clarifying a simple 2-page build and 1-page operational plan.
 - Irogami board Refused to meet, even via ZOOM teleconference
 - Documents or Q&A exchanges not shared with their membership. Presented as a Yes/No question do you want water from Silver at Irogami 2020 annual meeting. (Rational was they do not want our invasive species)
- 1997 Storm water runoff concept (Conceptual Order-of-magnitude, never funded, **require RFP for updated OOM**)
 - Diverted Hwy 21 & 3 runoff and Booth's marsh inflow to White River via ditching and 1 mile of culvert.
 - Flow control structure on Hwy 73 culvert into Silver lake on Chesboro's property, force water runoff into marsh, ditches and piping to White River.
 - 1997 estimate of \$440K, using Consumer Price Index calculator equates to **\$723K 2021 dollars**.
 - Did not account for boring culvert under Hwy 21&73 to move ditch water from North to South ditches
- Stantec Silver Lake pump Northeast to Bruce Creek (**2019 \$3M estimate, requires Fee engagement with Stantec to clarify and update**)
 - \$2.28M Construction and contingency
 - \$572K full design and build support
 - \$229K legal and administrative
- Agencies involved in the projects.
 - County Zoning and Land Conservation, WI DOT, WI DNR, Township of Marion, Silver Lake Sanitary District

Stantec, Silver Lake Northeast to Bruce Creek

1997 Storm Water Runoff path

