

ATTENDANCE ROSTER

BEAR RIVER COMMISSION REGULAR MEETING

Brigham City, Utah
April 18, 2023

IDAHO COMMISSIONERS

Gary Spackman
Kerry Romrell

WYOMING COMMISSIONERS

Kevin Payne
Brandon Gebhart
Tim Teichert

FEDERAL CHAIR

Jody Williams

UTAH COMMISSIONERS

Charles Holmgren
Candice Hasenyager
Norm Weston

ENGINEER-MANAGER & STAFF

Don Barnett
Jacob Barnett

OTHERS IN ATTENDANCE

IDAHO

Matt Anders, Department of Water Resources
Mat Weaver, Department of Water Resources
James Cefalo, Department of Water Resources
Ethan Geisler, Department of Water Resources
Mark Ipsen, Alternate Commissioner
Josh Hanks, Bear River Watermaster

UTAH

Tom Moore, Division of Water Resources
Teresa Wilhelmsen, State Engineer
Blake Bingham, Deputy State Engineer
Will Atkin, Division of Water Rights
Skyler Buck, Division of Water Rights
John Mackey, Division of Water Quality
Bart Argyle, Alternate Commissioner Upper
Ryan Merrill, Alternate Commissioner Lower
Clint Ballard, Lower Bear River
Mike Allred, Division of Water Quality

WYOMING

Mike Johnson, State Engineer's Office
Mel Fegler, State Engineer's Office
Nick Dayton, Hydrographer Cokeville
Trevor Hurd, State Engineer's Office

OTHERS

Connely Baldwin, PacifiCorp Energy
Nathan Daus, Cache Water District
Erin Holmes, Bear River Migratory Bird Refuge
Claudia and David Cottle, Bear Lake Watch
Emily Lewis, Bear River Water Users Association
Ann Neville, The Nature Conservancy
Logan Jamison, NRCS
Jim DeRito, Trout Unlimited
Ryan Rowland, USGS
Carl Mackley, Bear River Water Cons. Dist.



BEAR RIVER COMMISSION ANNUAL MEETINGS

April 12 and 18, 2023

COMMISSION AND ASSOCIATED MEETINGS

[Note: the Commission Meeting and all committee meetings, including the Water Quality Committee Meeting on April 12, will be held in person at the Bear River Migratory Bird Refuge's visitor center, 2155 W Forest St, Brigham City, UT 84302]

Wednesday, April 12

10:00 a.m.	Water Quality Committee Meeting	Nelson
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Tuesday, April 18

9:00 a.m.	Records & Public Involvement Committee Meeting	Committee
10:00 a.m.	Operations Committee Meeting	Holmgren
11:00 a.m.	Informal Meeting of the Commission	Barnett
11:05 a.m.	State Caucuses	Spackman/Hasenyager/Gebhart
1:00 p.m.	Commission Meeting	Williams

PROPOSED AGENDA
ANNUAL COMMISSION MEETING
April 18, 2023

Convene Meeting: 1:00 p.m.

Chair: Jody Williams

- | | | |
|------|--|-------------------|
| I. | Call to order | Williams |
| | A. Welcome of guests and overview of meeting | |
| | B. Approval of agenda | |
| II. | Welcome to the Bear River Migratory Bird Refuge | Holmes |
| III. | Approval of minutes of last Commission meeting (November 22, 2022) | Williams |
| IV. | Commission business/reports of Secretary and Treasurer | Hasenyager/Staker |
| | A. 2023 expenditures to date | |
| | B. 2024 budget approval | |
| | C. Other | Williams |
| V. | 2023 Water Supply Outlook Report | Jamison |
| VI. | Commission Depletion Estimates | |
| | A. Changes to <i>Procedures for Depletion Estimates</i> | Barnett |
| | B. <i>2019 Depletions Update</i> report | Anders |
| VII. | History of the Bear River Commission/Compact | Barnett |

BREAK

- | | | |
|-------|---|------------|
| VIII. | Water Quality Committee report | Mackey |
| IX. | Records & Public Involvement Committee report | Committee |
| X. | Operations Committee report | Holmgren |
| | A. Committee meeting | |
| | B. 2023 BL storage allocations | Baldwin |
| | C. PacifiCorp operations | Baldwin |
| XI. | Technical Advisory Committee report | Anders |
| XII. | Management Committee report | Spackman |
| XIII. | Engineer-Manager's report | Barnett |
| XIV. | State reports | |
| | A. Idaho | Spackman |
| | B. Utah | Hasenyager |
| | C. Wyoming | Gebhart |
| XV. | Other | Williams |
| XVI. | Next Commission meeting (Tuesday, November 14, 2023, location?) | Williams |

Anticipated adjournment: 4:15 p.m.

BEAR RIVER COMMISSION

STATEMENT OF INCOME AND EXPENDITURES
FY2023

FOR THE PERIOD OF July 1, 2022 to April 11, 2023

INCOME	CASH ON HAND	OTHER INCOME	FROM STATES	INCOME
Cash Balance 07-01-22	154,815.58			154,815.58
State of Idaho				
State of Utah			45,000.00	45,000.00
State of Wyoming			45,000.00	45,000.00
Water Quality		6,469.34		6,469.34
Interest on Savings		3,458.80		3,458.80
Interest on Checking		87.61		87.61
Checking Service Charge		(907.56)		(907.56)
TOTAL INCOME TO				
11-Apr-23	154,815.58	9,108.19	90,000.00	253,923.77

DEDUCT OPERATING EXPENSES

	APPROVED BUDGET	UNEXPENDED BALANCE	EXPENDITURES TO DATE
USGS Stream Gages Contract	47,920.00	-	47,920.00
SUBTOTAL	47,920.00	-	47,920.00

EXPENDED THROUGH COMMISSION

Personal Services	BIWC	76,821.00	25,607.00	51,214.00
Travel (Eng-Mgr)		1,200.00	923.13	276.87
Office Expenses		1,600.00	1,013.18	586.82
Printing Biennial Report		1,000.00	1,000.00	-
Treasurer Bond & Audit		1,400.00	1,300.00	100.00
Printing		1,600.00	1,467.40	132.60
Realtime Web Hosting		8,400.00	1,179.01	7,220.99
Clerical		10,149.00	10,110.94	38.06
Tour		2,500.00	2,500.00	-
Contingency		2,000.00	2,000.00	-
SUBTOTAL		106,670.00	47,100.66	59,569.34
TOTAL EXPENSES		154,590.00	47,100.66	107,489.34
CASH BALANCE AS OF 04/11/2023				146,434.43

BEAR RIVER COMMISSION

DETAILS OF EXPENDITURES

FOR PERIOD ENDING April 11, 2023

937	07/15/2022	USGS	47,920.00
938	06/17/2022	Stone Fly	3,600.00
941	07/21/2022	BIWC	6,401.75
942	08/10/2022	BIWC	6,514.55
943	09/22/2022	BIWC	6,476.49
944	12/30/2022	BIWC	32,855.56
945	12/05/2022	Stone Fly	3,620.99
946	04/15/2023	CNA Surety	100.00

TOTAL EXPENDITURES	107,489.34
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BANK RECONCILIATION

Cash in Bank per Statement 04/11/23	4,615.68
Plus: Intransit Deposits	
Less: Outstanding Checks	
Total Cash in Bank	4,615.68
Plus: Savings Account-Utah State Treasurer	141,818.75
CASH BALANCE AS OF 04/11/23	146,434.43

BEAR RIVER COMMISSION

BUDGET FOR FY 2023 AND PROPOSED BUDGETS FOR FY 2024 & 2025

	FY2023 APPROVED BUDGET	FY2024 PROPOSED BUDGET	FY2025 PROPOSED BUDGET
	-INCOME-	-INCOME-	-INCOME-
BEGINNING BALANCE	154,815.58	145,867.59	131,353.60
IDAHO	45,000.00	45,000.00	45,000.00
UTAH	45,000.00	45,000.00	45,000.00
WYOMING	45,000.00	45,000.00	45,000.00
WATER QUALITY	9,824.01	9,824.01	9,824.01
INTEREST ON SAVINGS	800.00	800.00	800.00
TOTAL INCOME	300,439.59	291,491.60	276,977.61
	-EXPENDITURES-	-EXPENDITURES-	-EXPENDITURES-
STREAM GAGING-U.S.G.S.	47,902.00	49,120.00	50,594.00
PERSONNEL SERVICES CONTRACT	76,821.00	80,662.00	84,695.00
TRAVEL	1,200.00	1,200.00	1,200.00
OFFICE EXPENSES	1,600.00	1,600.00	1,600.00
BIENNIAL REPORT	1,000.00	1,000.00	1,000.00
TREASURER'S BOND & AUDIT	1,400.00	1,400.00	1,400.00
PRINTING	1,600.00	1,600.00	1,600.00
REALTIME WEB HOSTING	8,400.00	8,400.00	8,400.00
CLERICAL	10,149.00	10,656.00	11,189.00
TOUR	2,500.00	2,500.00	2,500.00
CONTINGENCY	2,000.00	2,000.00	2,000.00
TOTAL EXPENDITURES	154,572.00	160,138.00	166,178.00
	145,867.59	131,353.60	110,799.61

Water Supply Conditions

Bear River Commission Meeting

April 18, 2023

Logan Jamison

contact: logan.jamison@usda.gov, 385-471-1235

jordan.clayton@usda.gov, 385-285-3118



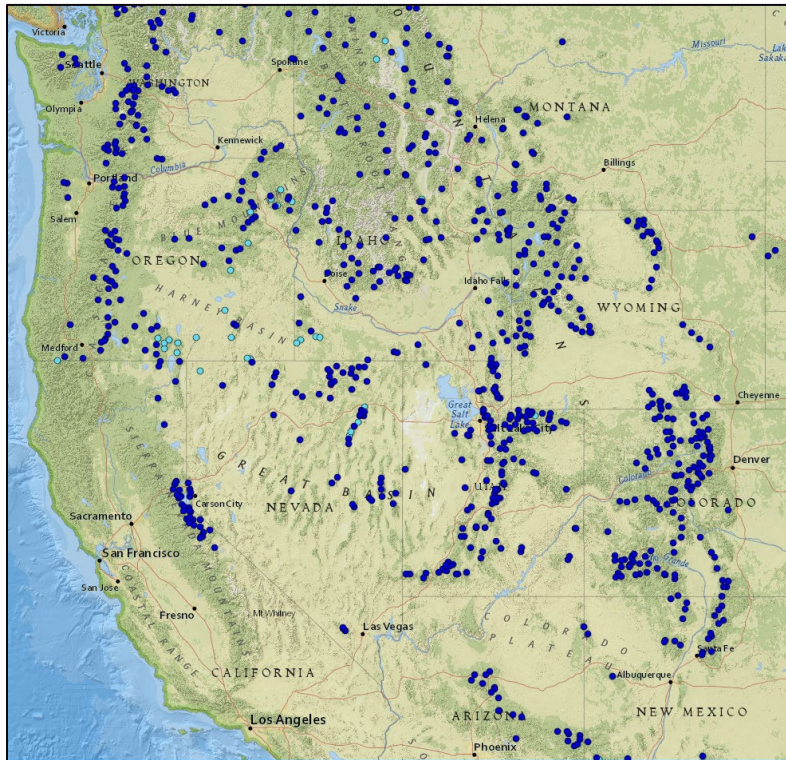
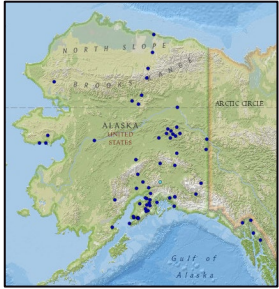
SNOTEL sites



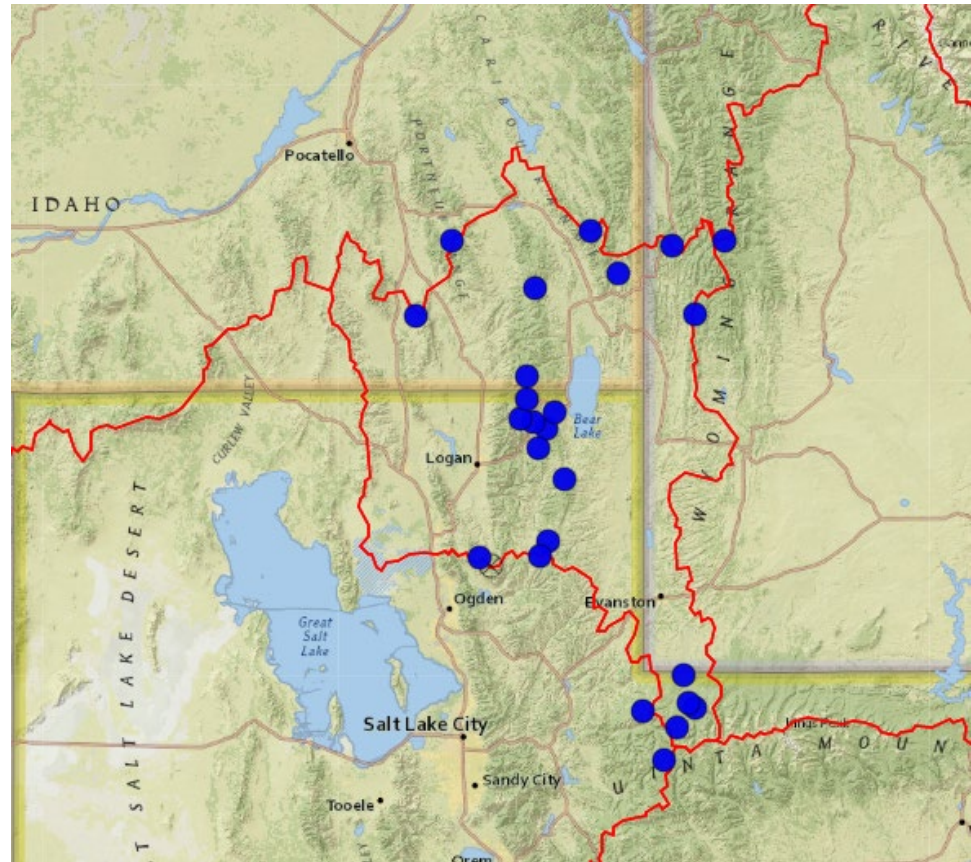
- automated weather stations in mountainous areas
- snow water equivalent, snow depth, precipitation, air temperature, soil moisture & temperature
- delivers hourly data



SNOTEL network



~900 SNOTEL sites in West



26 Bear River Basin SNOTEL sites

Bear River Basin SWE

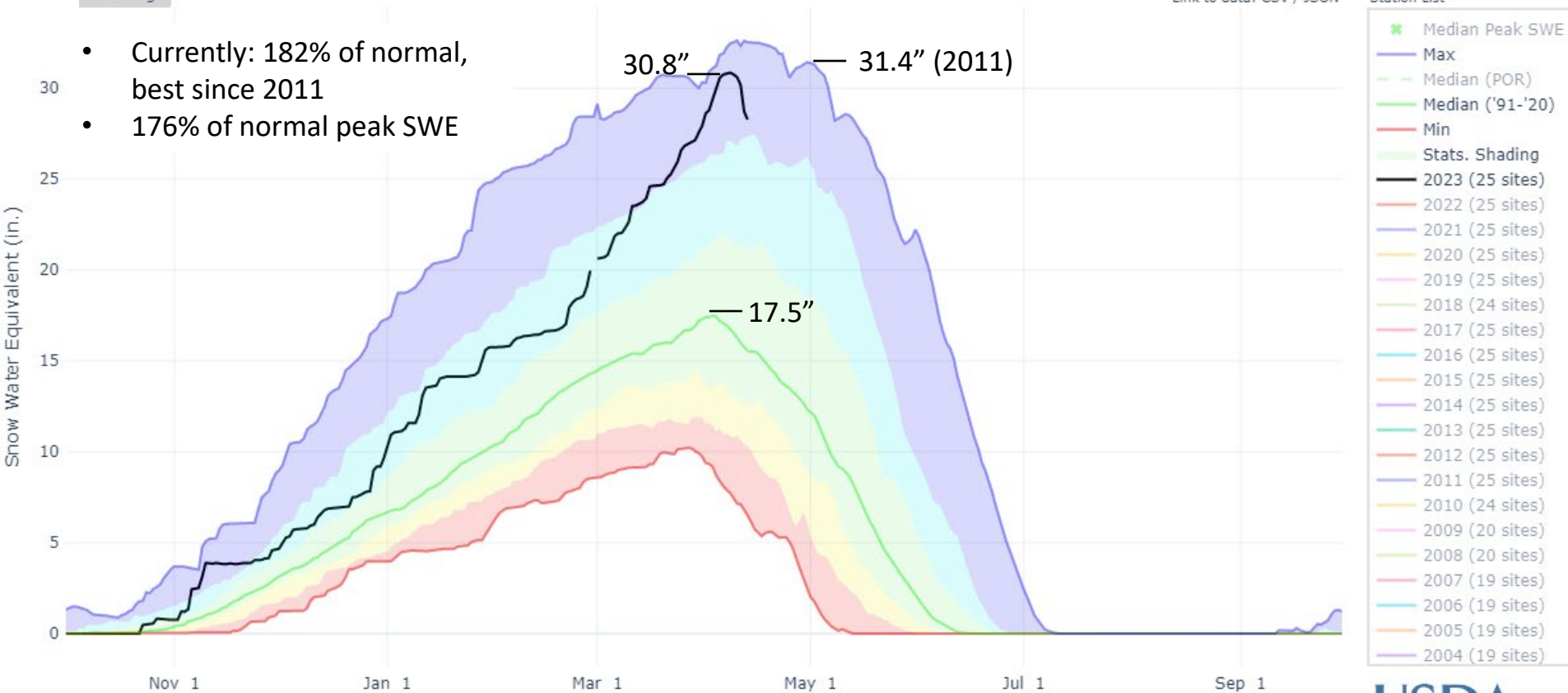
SNOW WATER EQUIVALENT IN BEAR

Reset Range

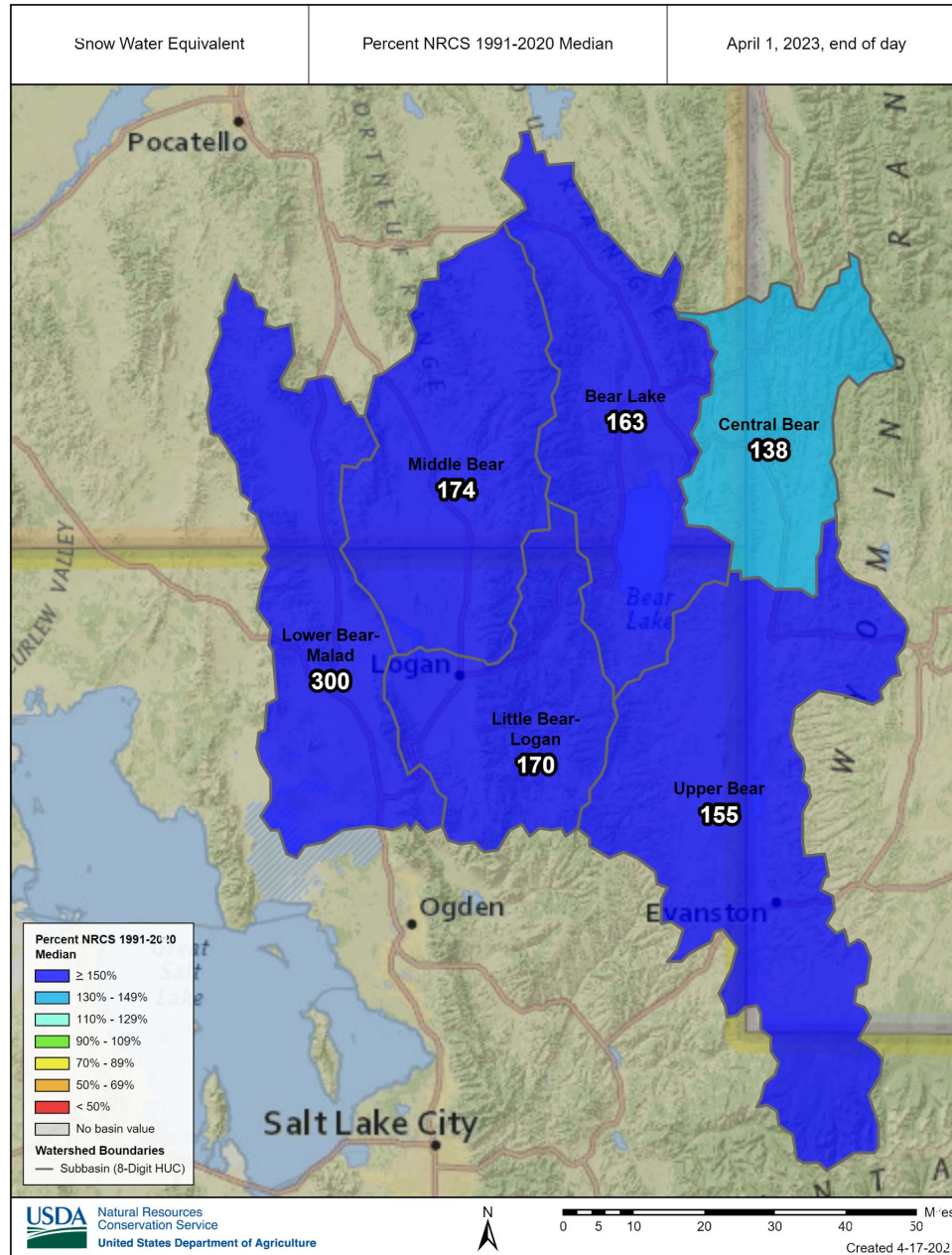
[Link to data: CSV / JSON](#)

Station List

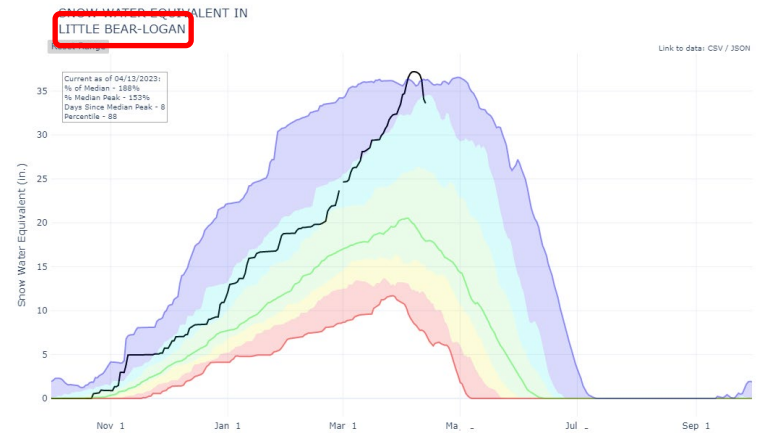
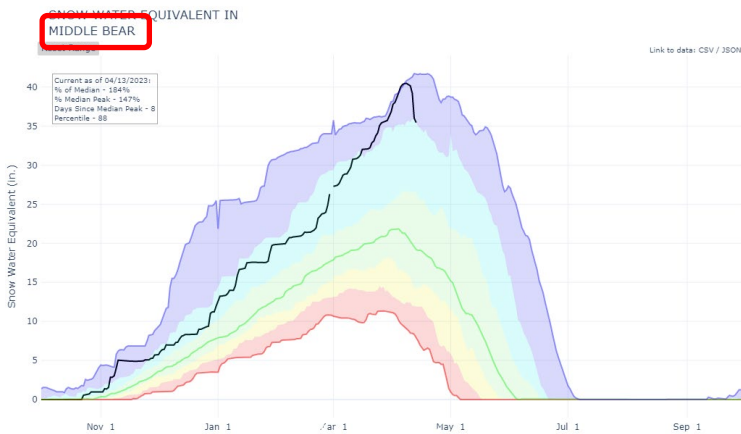
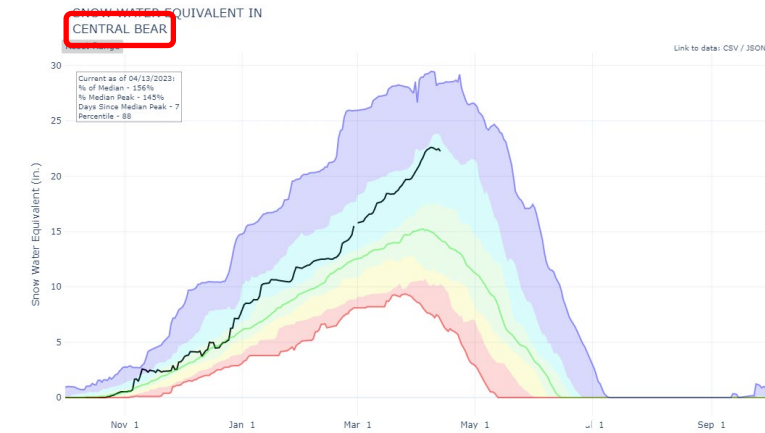
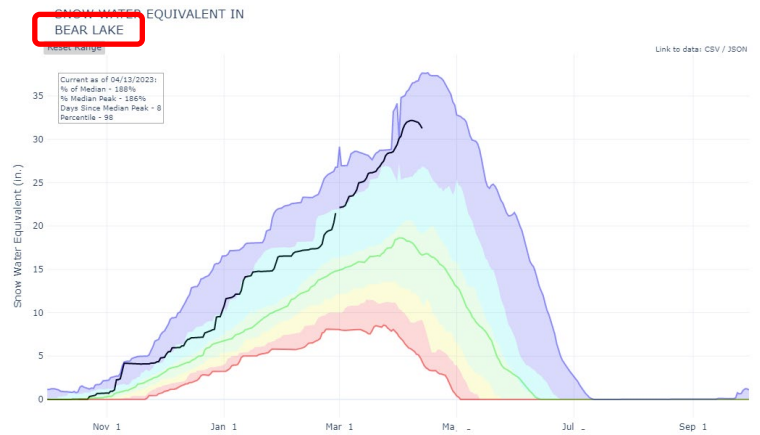
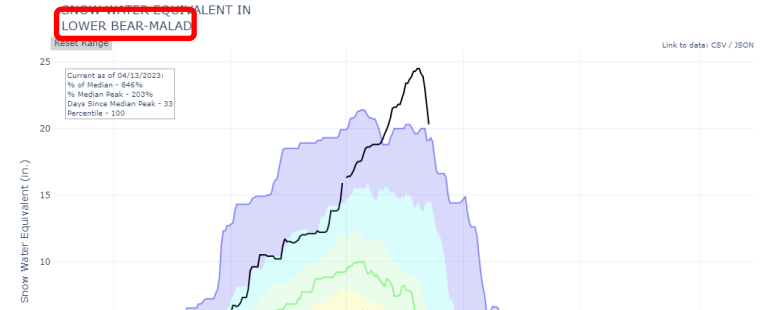
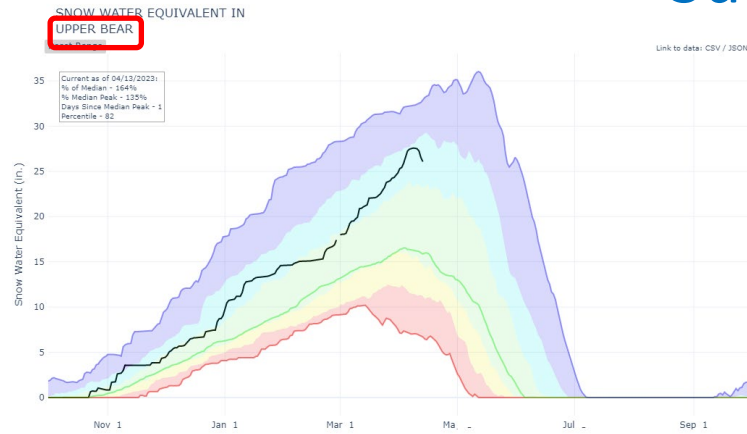
- Currently: 182% of normal, best since 2011
- 176% of normal peak SWE



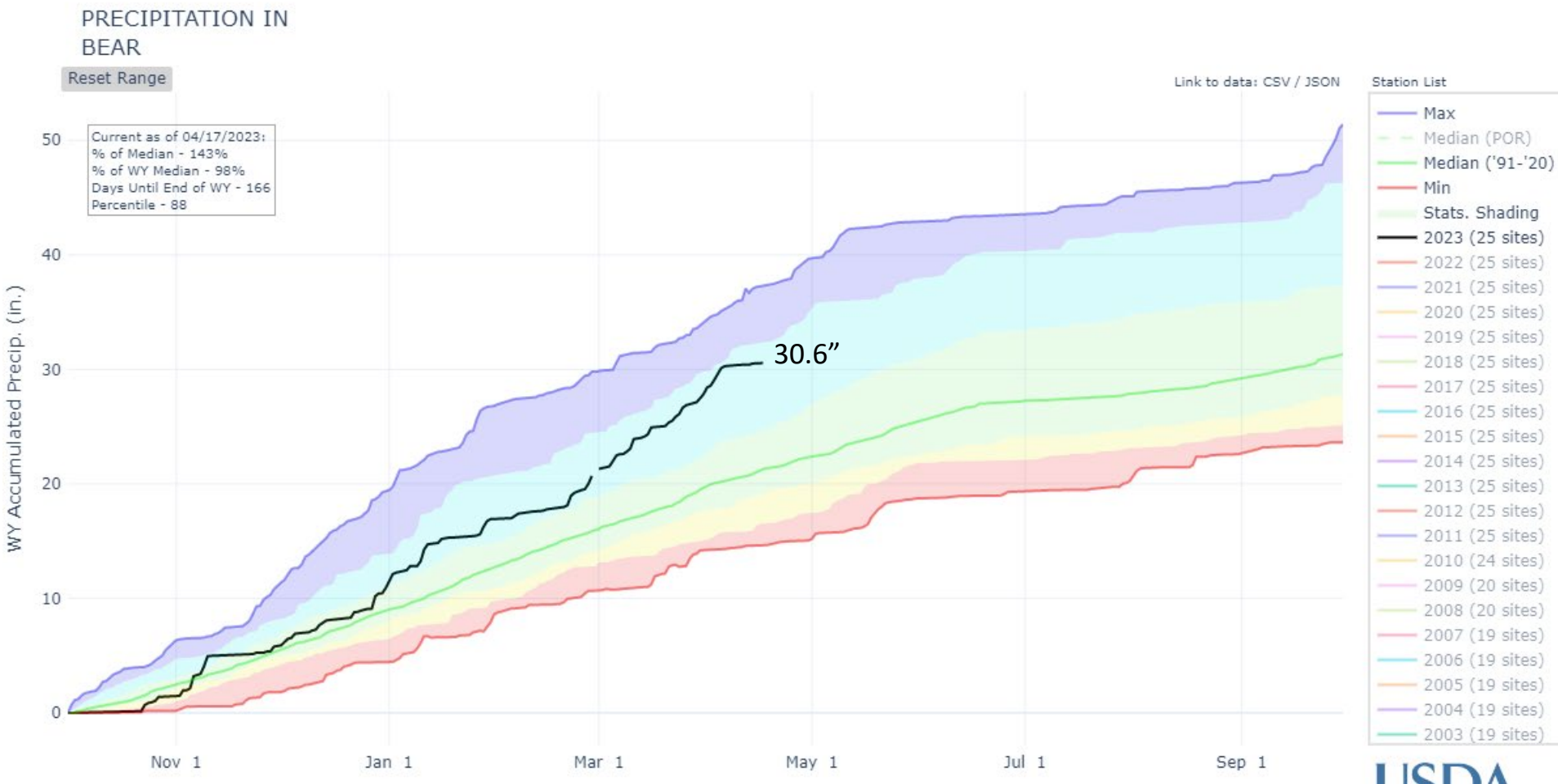
Subbasin SWE



Subbasin SWE

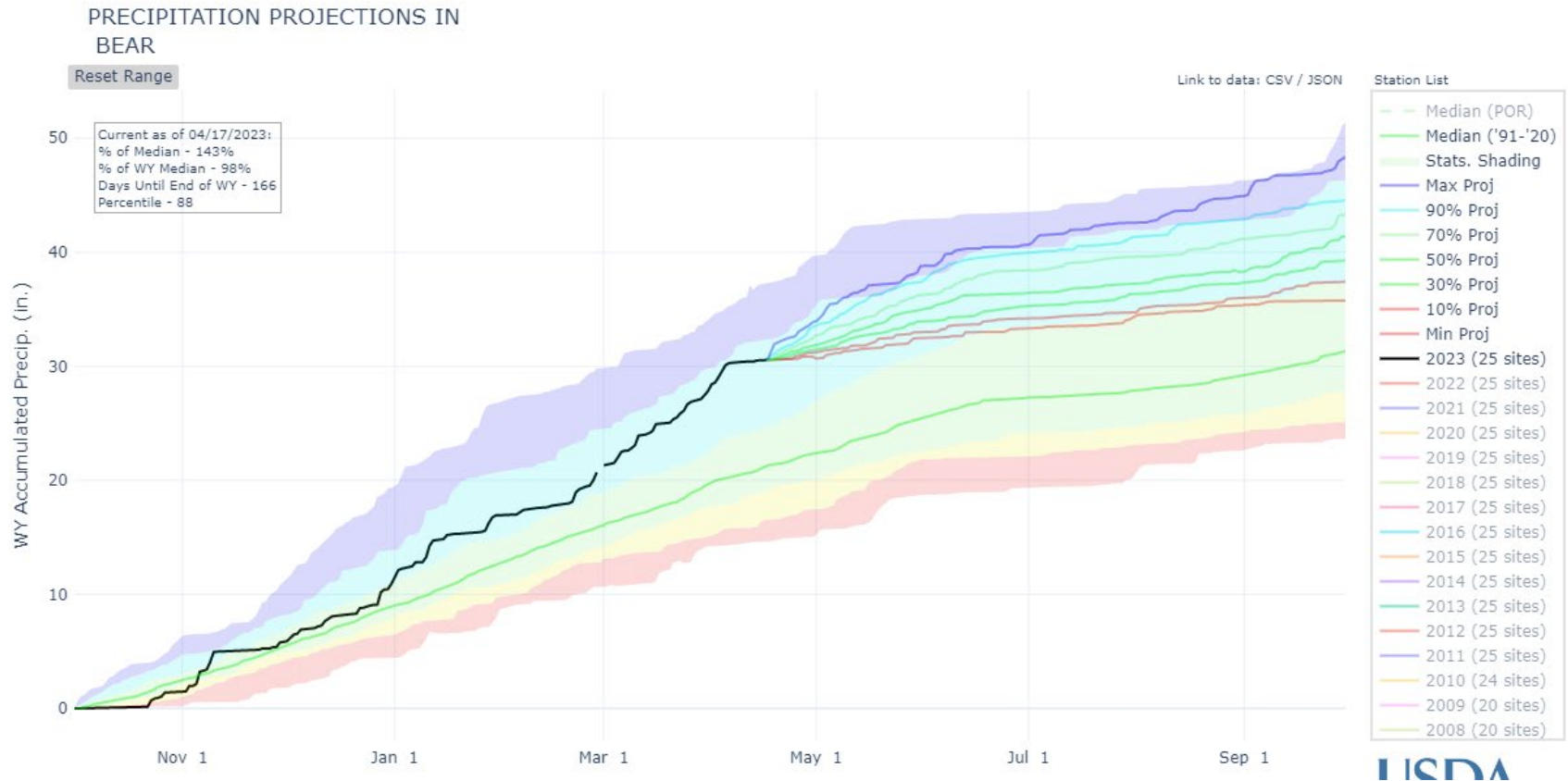


Precipitation in Bear River Basin



- Above normal precipitation at our SNOTEL sites (143%) for WY23

Precipitation projections in basin



- Most probable projection for precipitation = 41.4"
- That would be 10.1" above normal for WY23

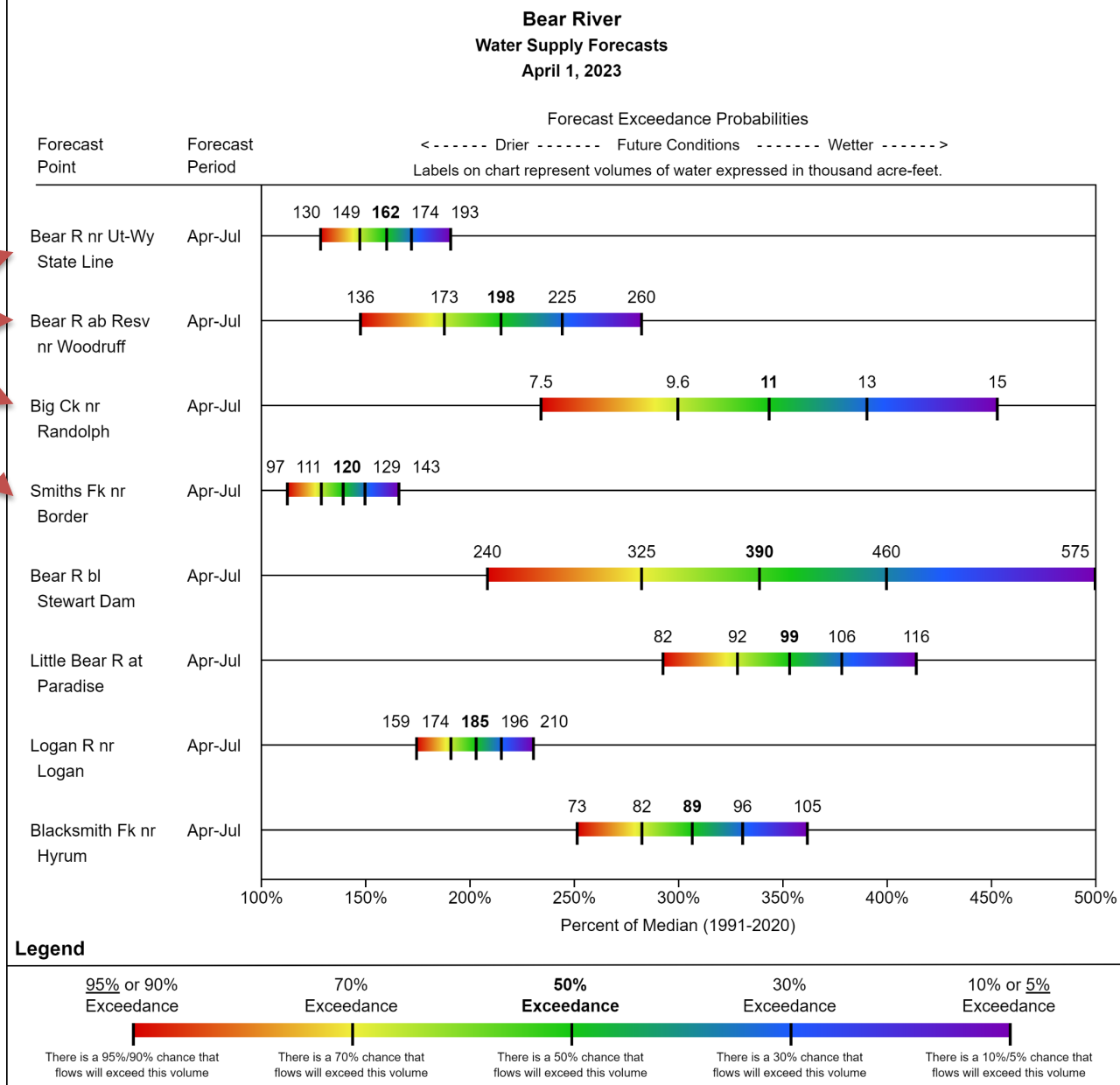
	Precipitation deficit							
	WY20	WY21	WY22	WY23	Normal	WY20-22 deficit	WY20-23 deficit	% change in deficit
Bear River Basin	27.7	25.1	30.1	41.4	31.3	11	0.9	92%

- Projected precipitation (50th %) for WY23 would nearly eliminate deficit

Streamflow forecasts for region

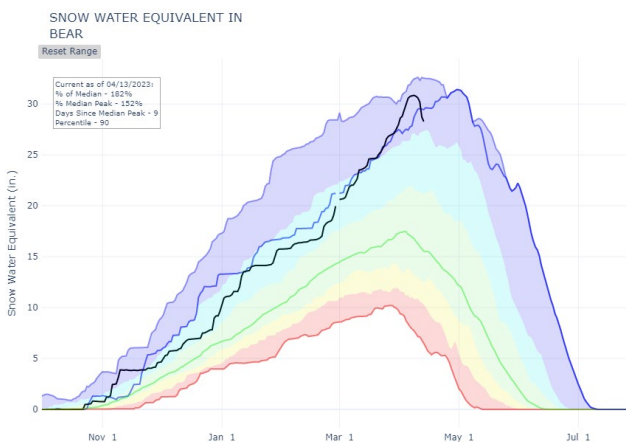
Forecast locations

- Forecast values = #'s (in KAF), with 50% exceedance (most likely) in bold
- % normal values on x-axis
- Basin-wide: 230% of normal
- Individual forecast points range from 140% to 354% of normal

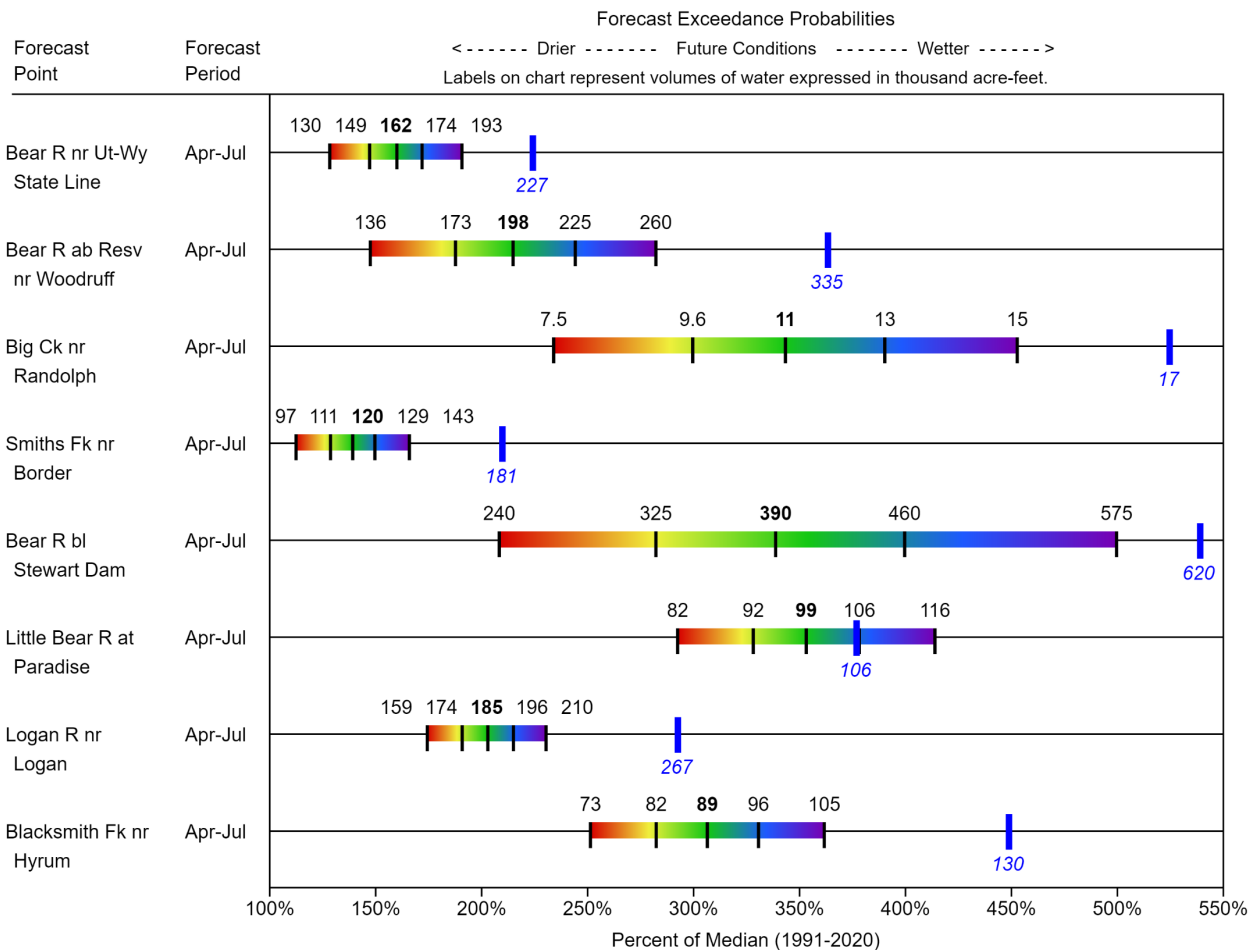


Streamflow forecasts for region

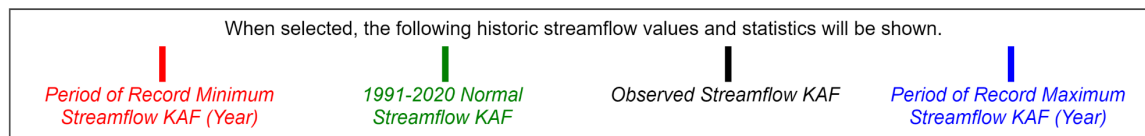
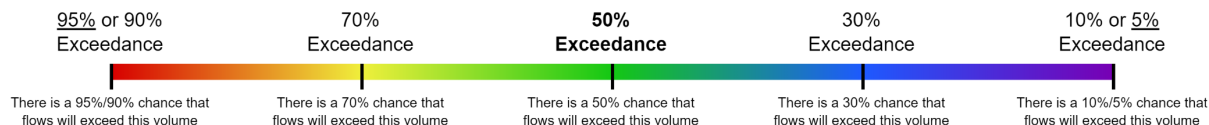
- Record maximum shown with dark blue lines
- Unlikely to break records at most locations, unless heavy snowfall is received through late spring (like 2011)



Bear River Water Supply Forecasts April 1, 2023

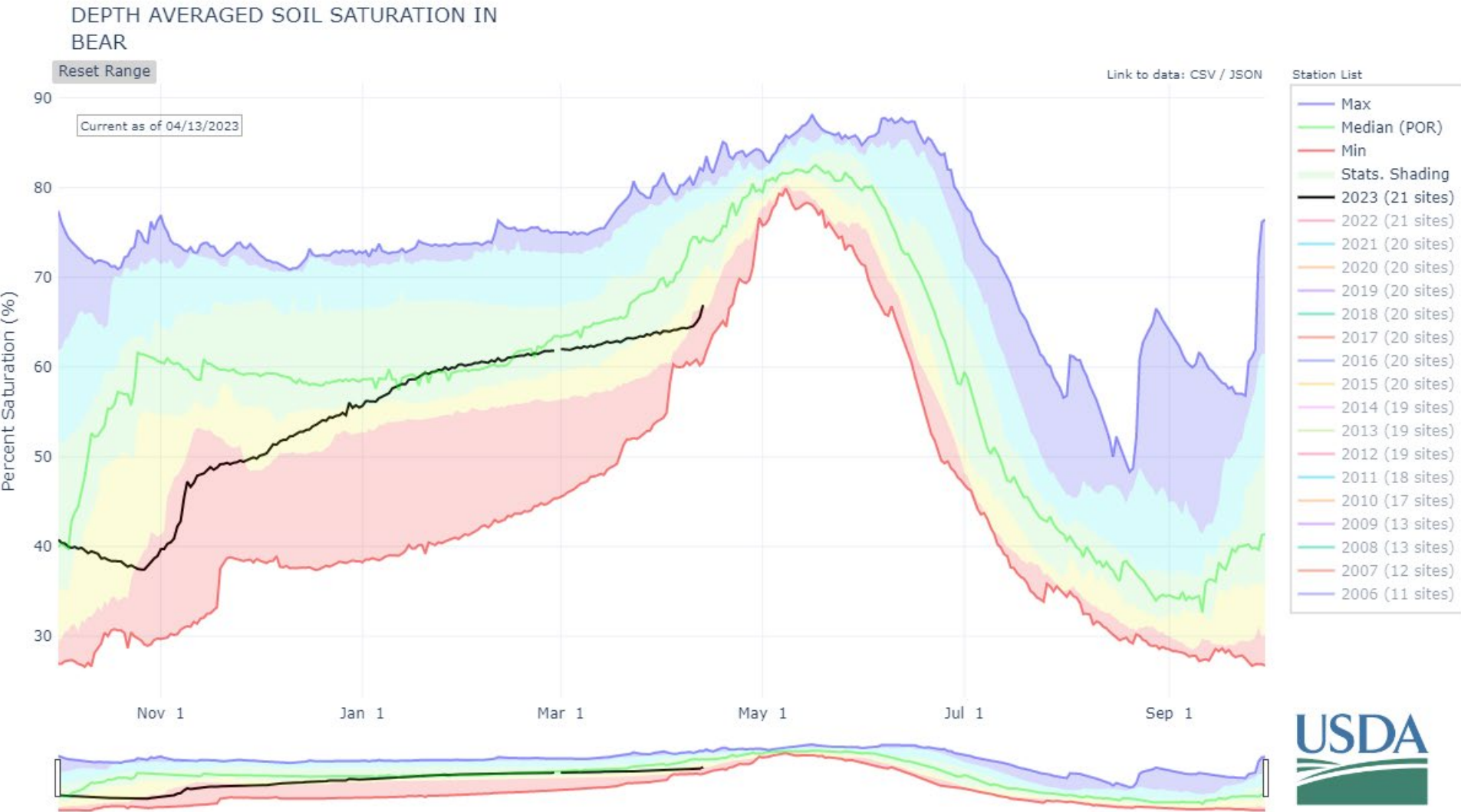


Legend



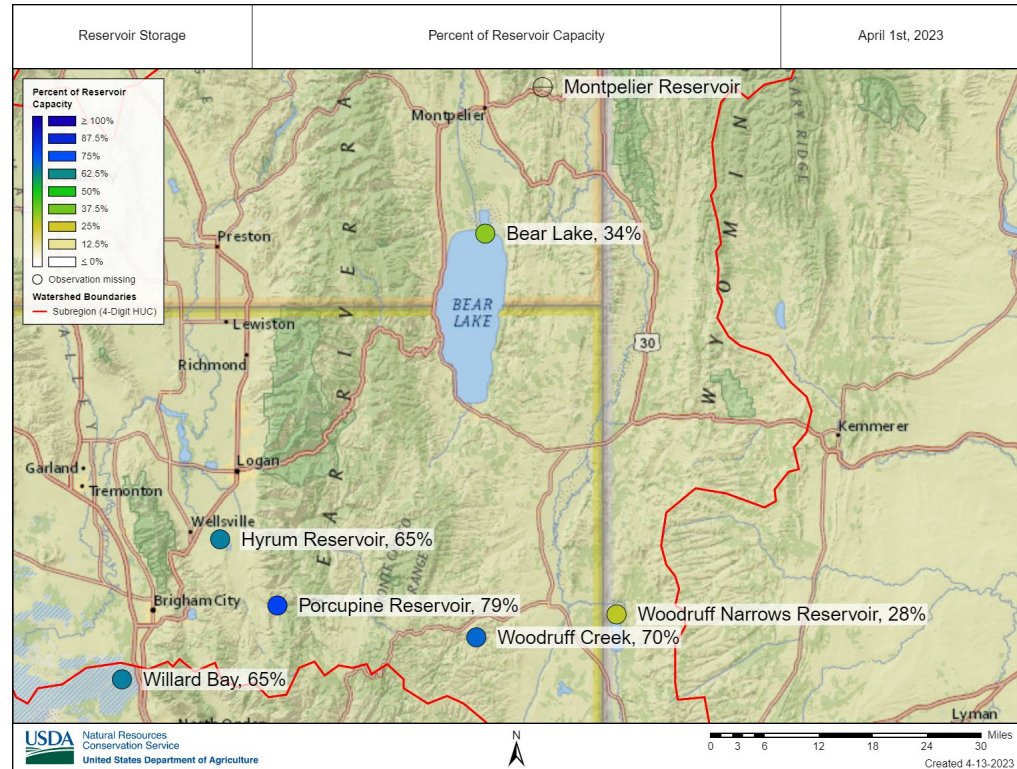
Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

Soil Moisture



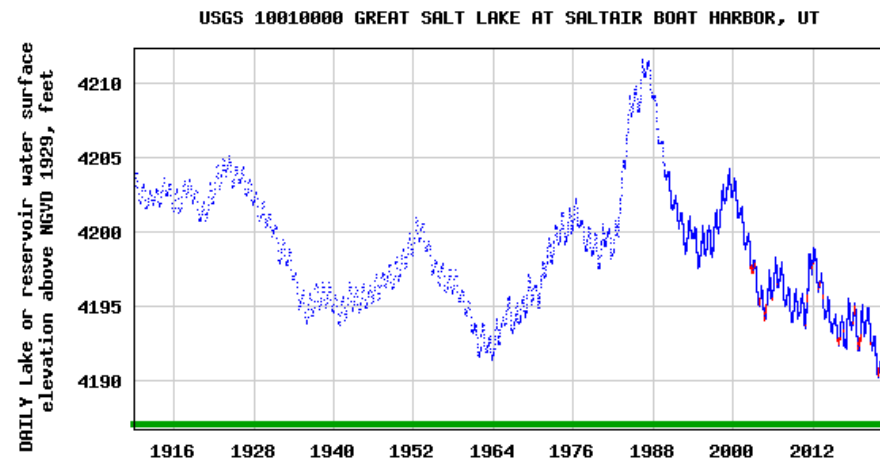
- Soil moisture is 7% below normal for the Bear River basin
- Likely due to later start of snowmelt, which wets soils

Reservoirs in region



- Reservoirs range from 28-79% capacity
- Basin-wide storage is 34% capacity, down from 45% last year.
- Bear Lake currently at around 444 KAF compared with 1302 KAF capacity → not likely to fill

- Great Salt Lake still near historically low elevation



April 1, 2023 | Surface Water Supply Index (SWSI)

Basin or Region	Reservoir Storage ¹ (KAF) ²	Apr-July Forecast (KAF) ²	Forecast + Storage (KAF) ²	SWSI ³	Percentile ⁴ (%)	Similar Years
Bear	443.5	162.0	605.5	-1.33	34	[2007, 2016]
Woodruff Narrows	16.3	198.0	214.3	2.46	79	[1993, 2017]
Little Bear	9.9	99.0	108.9	3.65	94	[1998, 2011]
Ogden	42.3	280.0	322.3	3.6	93	[1986, 1998]
Weber	257.6	625.0	882.6	3.22	89	[1982, 1984]
Provo	817.6	436.4	1254.0	-0.28	47	[2001, 2019]
Western Uintas	173.1	90.0	263.1	2.84	84	[1986, 1999]
Eastern Uintas	28.9	194.0	222.9	2.84	84	[1999, 2011]
Blacks Fork	11.4	110.0	121.4	2.34	78	[1999, 2005]
Smiths Fork	6.7	36.0	42.7	2.95	85	[1986, 1999]
Price	18.3	95.0	113.3	3.41	91	[1985, 1986]
Joes Valley	30.4	90.0	120.4	2.65	82	[1986, 2006]
Ferron Creek	9.0	57.0	66.0	3.03	86	[2017, 2019]
Moab	1.8	9.9	11.7	3.72	95	[1993, 2005]
Upper Sevier	57.0	203.0	260.0	3.41	91	[1995, 2011]
San Pitch	1.1	26.0	27.1	0.0	50	[1994, 2007]
Lower Sevier	58.0	275.0	333.0	2.65	82	[1995, 1997]
Beaver River	8.7	60.0	68.7	3.6	93	[1984, 1998]
Virgin River	38.7	195.0	233.7	3.65	94	[1993, 2005]

¹ End of Month Reservoir Storage; ² KAF, Thousand Acre-Feet; ³ SWSI, Surface Water Supply Index; ⁴ Threshold for coloring: >75% Green, <25% Red

- SWSI is a combination of forecasted streamflow and current reservoir storage
- Bear River basin is an exception to generally high SWSI values in UT
- Current surface water supply in Bear is greater than only 34% of years on record

Utah Water Supply Outlook Report

April 1, 2023

- Current conditions summarized in Snow Survey's April 1st Water Supply Outlook Report
- go to: [Utah Snow Survey webpage](#) → “Water Supply” for pdf



Tall Poles snow course, near Parowan

Photo by Jason Bradshaw (NRCS-Utah)

QUESTIONS?



BEAR RIVER COMMISSION MEETING

April 18, 2023



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jordan.clayton@usda.gov
385-285-3118

Appendix D
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Proposed Edits to: *Procedures for Depletion Estimates*

Bear River Commission Meeting
April 18, 2023
Brigham City, UT



**BEAR RIVER
COMMISSION**
COMMISSION

BEAR RIVER COMMISSION MEETING

April 18, 2023

Appendix E
Page 1 of 9

Depletion Procedures

PROCEDURES FOR DEPLETION ESTIMATES

April 19, 2016

HISTORY OF REVISIONS

November 23, 1993 - Initially adopted
November 13, 2012 - Amended procedures relative to Appendix C
April 15, 2014 - Revised
April 19, 2016 - Revised



**BEAR RIVER
COMMISSION**

BEAR RIVER COMMISSION MEETING

April 18, 2023

Appendix E
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Depletion Procedures – additional edits



BEAR RIVER
COMMISSION



BEAR RIVER COMMISSION

PROCEDURES FOR DEPLETION ESTIMATES

April 19, 2016 November 22, 2022

I. INTRODUCTION

~~Congress ratified the~~ Amended Bear River Compact (Amended Compact) ~~was ratified by Congress in 1980, and The Amended Compact established depletion amounts to which states were entitled for each state bound by the Compact.~~ The Amended Compact did not spell out in detail how depletions would be calculated. Instead, the Amended Compact directed that these depletion calculations would be completed in accordance with "Commission-approved procedures." In November of 1989, the Bear River Commission (Commission) adopted interim approved procedures with an understanding that with time and experience, the States ~~may~~ could choose to amend the approved procedures.

The phrase "Commission-approved procedure" is found twice within the Amended Bear River Compact relative to depletion calculations. These places are as follows:

Article V.C: "Water depletions permitted under provisions of subparagraphs (1), (2), (3), and (4) above, shall be calculated and administered by a Commission-approved procedure."

Article VI.B: "Water depletions permitted under this Paragraph B shall be calculated and administered by a Commission-approved procedure."

~~In fulfillment of the Amended Compact, these procedures will set forth the methods the States will use to determine out how water depletions will be determined.~~ These procedures are set forth as general guidelines to be used by the states to report to the Bear River Commission (Commission) the additional depletions that have occurred as provided for under allowed by the Amended Bear River Compact. The Commission is required to will account for depletions forward from January 1, 1976. A The Commission-approved and finalized a mapping project was completed and approved in April 1992 to establish base data from which the States could prepare future maps and tabulations of new depletions could be prepared.

To account for the irrigation requirements of crops grown in the Bear River Basin, the Commission contracted with Utah State University, in cooperation with the University of Idaho and the University of Wyoming, to estimate irrigation depletions for subbasins within the Bear River bB Basin. A map illustrating of the subbasins and Compact division boundaries is shown in Appendix A. Appendix B shows summarizes the amount of depletions per acre that was estimated for each subbasin. The following narrative procedures will describes the

Depletion Procedures

II. DEPLETION PROCEDURES

A. Irrigation Depletion

1. New Irrigated Lands

Depletion amounts from new irrigated lands, put in production since January 1, 1976, will be determined by multiplying the acreage brought into production by the irrigation depletion rate of the crop being irrigated on each field. These values will be summed, and an area-weighted average depletion rate for added acres will be calculated. For irrigated lands retired from irrigation, the number of acres retired will be multiplied by an area-weighted average depletion rate computed from the pre- and post-January 1, 1976 acres within a given subbasin. These depletion values by subbasin are summarized in Appendix B. Depletion values from Appendix B will be used unless modified by the Commission. Future modifications will require supporting information, and appropriate adjusted tables to verify depletion values. Any modifications to depletion values must be documented to the satisfaction of the Commission. Justification as to why the depletion values were modified will be documented in the report and approved by the Commission.



Depletion Procedures

An example depletion calculation for new acreage brought into irrigated agricultural production is made as follows:

Example area: Thomas Fork Subbasin

Criteria: 40 new acres of irrigation brought into production

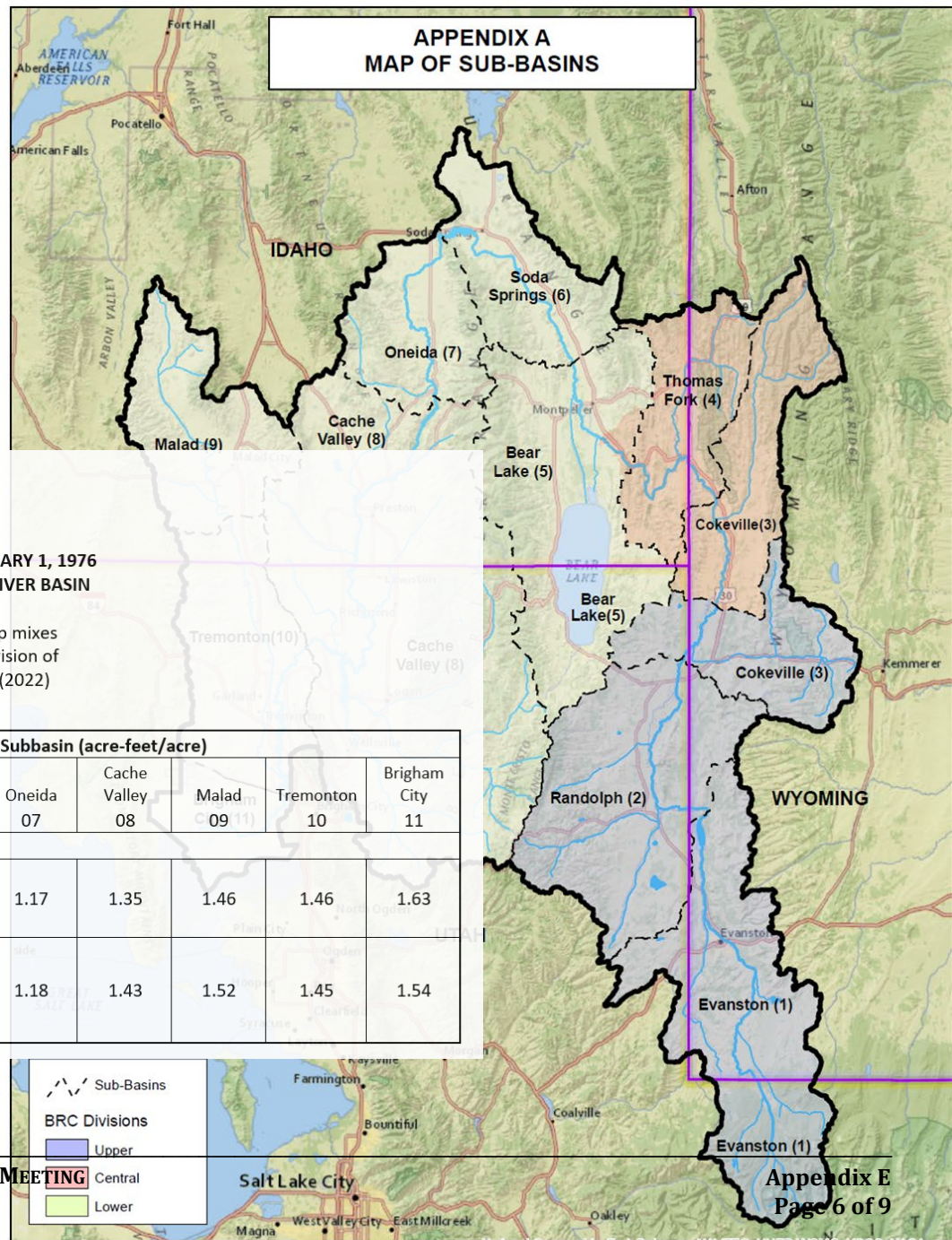
$40 \text{ acres} \times 1.17 \text{ acre-feet/acre}^* = 46.8 \text{ acre-feet of annual depletion}$

*(Based on Estimated Depletion from Appendix B)

Similar calculations will be made for lands which were irrigated prior to January 1, 1976 which have since been retired from irrigation, except that the “Subtracted” depletion value will be used for the respective subbasin. The calculated subtraction depletion value will then be subtracted from the new or added depletion value to determine the net irrigation depletion change since January 1, 1976 for each subbasin.



APPENDIX A MAP OF SUB-BASINS



APPENDIX B

ESTIMATED DEPLETION FOR POST JANUARY 1, 1976 LANDS FOR SUBBASINS OF THE BEAR RIVER BASIN

Based on average (2015 - 2019) crop mixes
and updated ET rates from Utah Division of
Water Resources' GridET program (2022)

	Bear River Irrigation Depletion Rates by Subbasin (acre-feet/acre)										
	Evanston 01	Randolph 02	Cokeville 03	Thomas Fork 04	Bear Lake 05	Soda 06	Oneida 07	Cache Valley 08	Malad 09 (11)	Tremonton 10	Brigham City 11
Rate for Added Acres	1.24	1.36	1.25	1.17	1.15	1.09	1.17	1.35	1.46	1.46	1.63
Rate for Subtracted Acres	1.30	1.34	1.28	1.22	1.20	1.09	1.18	1.43	1.52	1.45	1.54



**BEAR RIVER
COMMISSION**

BEAR RIVER COMMISSION MEETING

April 18, 2023

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Depletion Procedures

b. Other Supplemental Irrigation Development

The depletion estimate assigned to smaller supplemental rights or filings will be calculated by each state in a manner acceptable to the Commission. For depletions associated with the use of supplemental irrigation water rights, each state will apply the factor of 40% of the full supply depletion rate to acres irrigated with a post-1976 supplemental water right.



Depletion Procedures

D. Banking Procedures

When determining the net increase of irrigated acres in a subbasin, each state may subtract its post January 1, 1976, decrease in irrigated acres from the post January 1, 1976, increases in irrigated acres to determine a net change in irrigated acres, which it shall report to the Commission. In the alternative, at their discretion, individual states may elect to use either of the following options to account for pre-1976 depletions that are no longer occurring.



Depletion Procedures

b. Reporting Intervals

For the Upper and Central Divisions (above Stewart Dam), the states will determine the changes in depletion every five years, or as determined by the Commission. For the Lower Division (below Stewart Dam), the states will determine depletions every ten years.



Technical Advisory Committee (TAC) 2019 Depletion Study Update

Matt Anders
Idaho Department of Water Resources



**BEAR RIVER
COMMISSION**
COMMISSION

BEAR RIVER COMMISSION MEETING

April 18, 2023

Appendix F
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Technical Advisory Committee (TAC) Participants

Bear River Commission

Don Barnett
Jody Williams

Wyoming

- Kevin Payne
- Mike Johnson
- Mel Fegler
- Travis McInnis
- Sam Swartz
- Charlie Ferrantelli

Utah

- Will Atkin
- Jake Serago
- Skyler Buck
- Thomas Moore
- Clay Lewis

Idaho

- Ethan Geisler
- Margie Wilkins
- Phil Blankenau
- Mat Weaver
- James Cefalo
- Cody Parker
- Matt Anders



BEAR RIVER
COMMISSION
COMMITTEE

What is a Depletion?

- Water that was put to beneficial use on or after January 1, 1976, that reduces the flow of the Bear River and its tributaries.
 - Equivalent to Consumptive Use
- Categories
 - Irrigation
 - Municipal
 - Industrial
 - Reservoir Evaporation
 - Ordinary Domestic & Stockwater – Exemption in Article VI.E



Agricultural Depletions

- Sources of depletion
 - Water that transpires from plants as they grow.
 - Water that evaporates from the soil surface and foliage.



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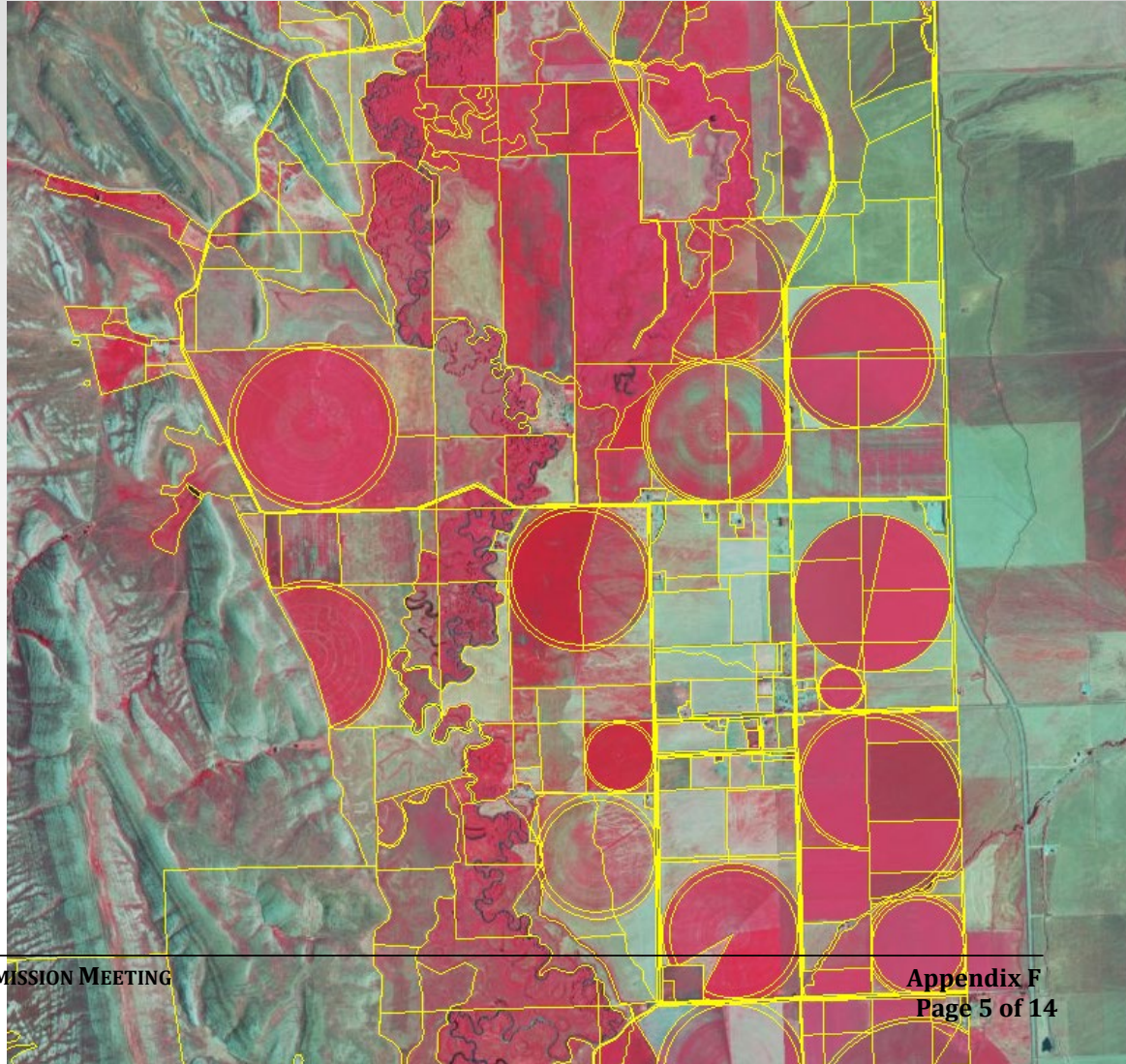
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Agricultural Depletions - Mapping

- Mapped all agricultural fields in the Bear River Basin.
- New irrigated land since 1976.
- Land irrigated in 1976 that was retired or changed use.



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Agricultural Depletions – ET Rates

- Calculated depletion from irrigation that started after January 1, 1976, on a field-by-field basis using GridET software created by Utah.

	Bear River Irrigation Depletion Rates by Subbasin (acre-feet/acre)										
	Evanston 01	Randolph 02	Cokeville 03	Thomas Fork 04	Bear Lake 05	Soda 06	Oneida 07	Cache Valley 08	Malad 09	Tremonton 10	Brigham City 11
Rate for Added Acres	1.24	1.36	1.25	1.17	1.15	1.09	1.17	1.35	1.46	1.46	1.63
Rate for Subtracted Acres	1.30	1.34	1.28	1.22	1.20	1.09	1.18	1.43	1.52	1.45	1.54



Agricultural Depletions – Supplemental

- Land with a water right with a priority date prior to January 1, 1976, that is also irrigated with a water right established after January 1, 1976.
- The TAC was unable to develop a universal method, so it was determined to use 40% of the full depletion for the subbasin as a common method, based on averages of estimated usage.
- Wyoming determined that for the 2021 water year, supplemental depletion was 80%.



Municipal Depletions

- Public water systems or county population data
- Sources of depletion
 - Production, exterior
 - washing, irrigation, etc.
- Calculation method
 - Depletion =
people * 0.11 AF



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Industrial Depletions

- Industrial use not included in the municipal depletion.
- Sources of depletion
 - Water consumed by products or processing: Cement plant and phosphate processing.
- Calculation method
 - Depletion was estimated for each facility using water right or water usage data.

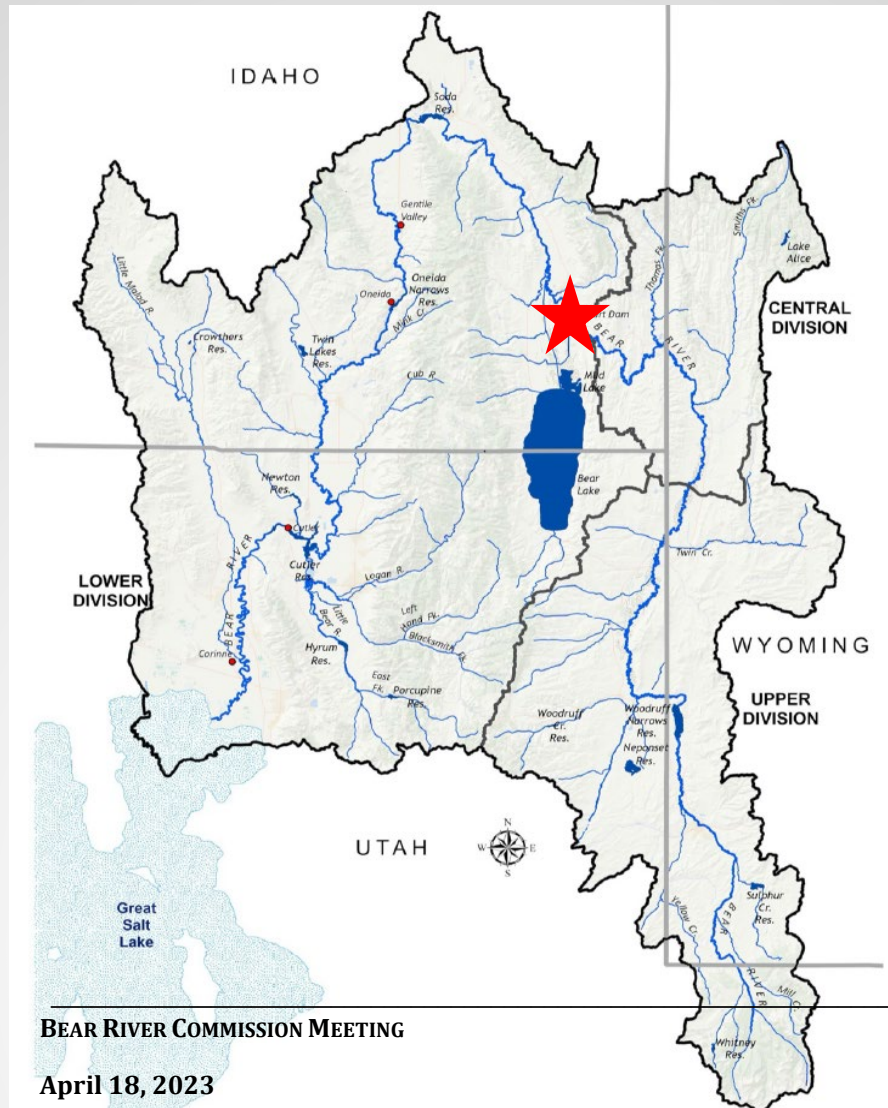


Reservoir Evaporation Depletions

- Evaporation from new reservoir storage since January 1, 1976.
 - Includes new reservoirs and expansion of pre-1976 reservoirs.
- Calculation methods
 - $\text{Depletion} = \text{surface area} \times \text{ET (GridET)}$
 - Woodruff Narrows was estimated using a computer model and ET (GridET)



Depletion Study Results



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Bear River Commission
Estimated Annual Depletions (Acre-Feet)¹
Changes from January 1, 1976, to December 31, 2019

ABOVE STEWART DAM

State	Allocation	Agricultural Depletions	M&I Depletions	Reservoir Evaporation	Total Depletions	Remaining Allocation
Utah	13,000	5,839	-8	582	6,413	51% 6,587
Wyoming	13,000	5,058	826	140	6,024	54% 6,976
Idaho	2,000	1,150	3	0	1,153	42% 847

LOWER DIVISION

State	Allocation	Agricultural Depletions	M&I Depletions	Reservoir Evaporation	Total Depletions	Remaining Allocation
Idaho	125,000 ²	16,387	245	11	16,643	108,357
Utah	275,000 ³	-16,879	11,543	0	-5,336	275,000

¹Any reductions in pre-1976 depletions are reflected in the above numbers.

²First right under Compact. Compact grants additional rights.

³Second right under Compact. Compact grants additional rights.

Depletion Study Results – Total Depletions

Above Stewart Dam

State	Allocation (AF)	1990 Depletion Study (AF)	2009 Depletion Study (AF)	2019 Depletion Study (AF)	2019 Remaining Allocation (AF)
Utah	13,000	5,381	6,860	6,413	6,587
Wyoming	13,000	3,210	3,295	6,024	6,976
Idaho	2,000	1,293	1,313	1,153	847

Below Stewart Dam

State	Allocation (AF)	1990 Depletion Study (AF)	2009 Depletion Study (AF)	2019 Depletion Study (AF)	2019 Remaining Allocation (AF)
Idaho	125,000	7,300	8,977	16,643	108,357
Utah	275,000	4,114	407	-5,336	275,000

Depletion Study Results – Recommendations

- Identify ways to maintain a GIS dataset to be used for the next depletion study.
- Continue development of a methodology for supplemental water right depletions.
- Review the method used to calculate the ET for removed acres.
- Follow the development of OpenET for possible use in future depletion estimates.
- Support additional weather and eddy covariance stations to increase accuracy of future depletion estimates.
- Review the per capita method for calculating municipal depletions.
- Review the method use for industrial use in the updated Woodruff Narrows Model.



History of the Bear River Commission/Compact

Bear River Commission
April 18, 2023
BRMBR, Brigham City, UT



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The Herald Journal

Vol. 80, No. 129

Tuesday, May 30, 1989

Covering Bridgerland, Northern Utah and Southern Idaho

Logan, Utah

16 pages, 2 sections

35 cents

Bush welcomes accord

BONN, West Germany (UPI) — President Bush said today NATO's accord on a troop-cut proposal and nuclear missile talks are "a victory for the alliance" that gives the West new leverage to meet the challenge of change in the Soviet Union.

Bush called the allied backing for his plan for sharp reductions of conventional military forces in Europe and a compromise on the thorny issue of negotiations over short-range nuclear forces a "double hit" that has given the 40-year-old Western alliance "something sound and solid to build on."

Without gloating, Bush said at a summit-ending news conference in Brussels, Belgium, before flying to West Germany that the "successful results" of his first turn on the stage as a world leader vindicated his cautious approach to putting his own stamp on U.S. foreign policy.

Bush welcomed the compromise on short-range nuclear weapons that defused

a NATO rift over negotiations with Moscow on the missiles.

The issue, fanned by the public relations skills of Soviet leader Mikhail Gorbachev, pitted West Germany and other NATO members that favored early talks with the Kremlin against the United States and Britain.

"I don't view it as a victory for the United States," Bush said of the compromise, a deal in which the United States yielded little of substance. "I view it as a victory for the alliance."

"We're here as part of an alliance and I don't think we ought to have winners or losers out of a summit that everybody agrees has been very, very unified."

Similarly, Bush was pleased by the allied leaders' endorsement of his proposal to limit U.S. and Soviet troops in Europe to 275,000 — which would cut 30,000 Americans and perhaps 10 times as many Soviets — as well as negotiate reductions

in armor, artillery and combat aircraft.

"Taken in tandem, it demonstrates the alliance's ability to manage change to our advantage, to move beyond the era of containment," Bush said. "Our overall aim is to overcome the division of Europe and to forge a unity based on Western values."

"The starting point, of course, is to maintain our security while seeking lessened tensions and adapt to changing circumstances."

Bush, clearly pleased with his performance at the summit, was to meet late Tuesday with West German Chancellor Helmut Kohl, the president's main antagonist in the controversy over the nuclear missiles that had threatened to sour the 40th anniversary NATO meeting.

Opening their 25-hour visit, the president and first lady Barbara Bush were



George Bush

Soviets call for cuts in military

MOSCOW (UPI) — Soviet leader Mikhail Gorbachev revealed the nation's military budget today for the first time, listing it at \$123.6 billion and proposing to cut it by 14 percent.

Making known the once sacrosanct secret figure meets what President Bush has called one of the tests by which his administration seeks to

See SUMMIT on page 2



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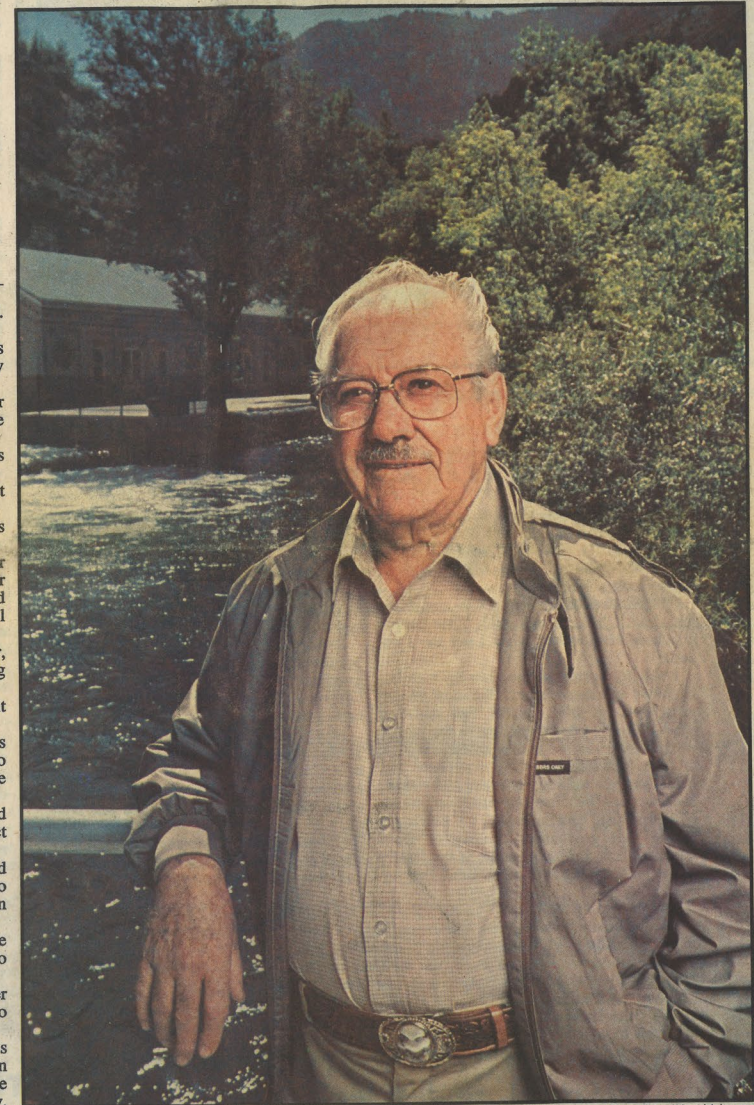
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Jibson's ties to Bear River go long way back

By John J. Wise
staff writer



Wallace N. Jibson

Dan Miller/Herald Journal

If any name is synonymous with the Bear River, it's Wallace N.

about the 500-mile long river and its tributaries. Most people probably know, or at least know of, Wally Jibson as the Bear River Compact resident, retired last month for 10 years. He spent his career in Cache Valley and in the

1980 when he wrapped up 34 years of service with the U.S. Geological Survey.

“I had a contract job,” Jibson said. “I was actually civil service.” He worked at a local USGS office on Logan’s Canyon until the office was closed in 1983.

In ’80, Jibson stayed on with the Bear River Compact that administers the important Bear River Compact. He was the federal representative and worked as its engineer/manager until April

the actual river basin figured into Jibson’s long career, the Bear River Compact between Utah, Idaho, and Wyoming may be the most significant.

In a 1982 Journal story about Jibson, a reporter summed it up well:

“The Bear River flows through an unusual area — Wally Jibson’s veins. The river is Jibson’s lifeblood. It’s the lifeblood of Utah, Idaho and Wyoming too, and Jibson has spent much of his life making sure everybody gets their fair share, no more no less.”

Anyone who retires has a story to tell. Jibson’s story is the Bear and the compact that parts its waters. In his mind, the Bear River Compact stands out as a single chapter in his career that he is most proud of.

“I wasn’t here a year when my boss had me working with him and the Bear River Commission negotiating team,” Jibson said, who chaired the engineering committee that gathered technical information for compact negotiators.

“Our committee put together all of the technical studies that the negotiators needed to help them divide the water. I’m really happy to have been involved in that,” he said.

One of three men still alive who served on the original 20-member compact negotiating team in the early 1950s, he has been asked to write the history of the Bear River Compact.

Two things led to the compact, he said: Utah Power and Light Co.’s 1928 decreed right to store water in Bear Lake; and the natural flow in the river — which he said became critical in the dry ’30s when the Bear River sent little water down its course. Users below had priority,

See JIBSON on page 2



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History of the Bear River Compact

**Paul
Holmgren**

**John
Teichert**

**Simeon
Weston**



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Key Dates

Original Compact

- 1943 informal meetings
- 1946 Congressional consent
- 1948 First official negotiation meeting
- 1955 Compact approved by states
- 1958 Compact signed

Amended Compact

- 1943 informal
- 1970 Tri-state Negotiating Committee
- 1978 signed by states
- 1980 Compact signed



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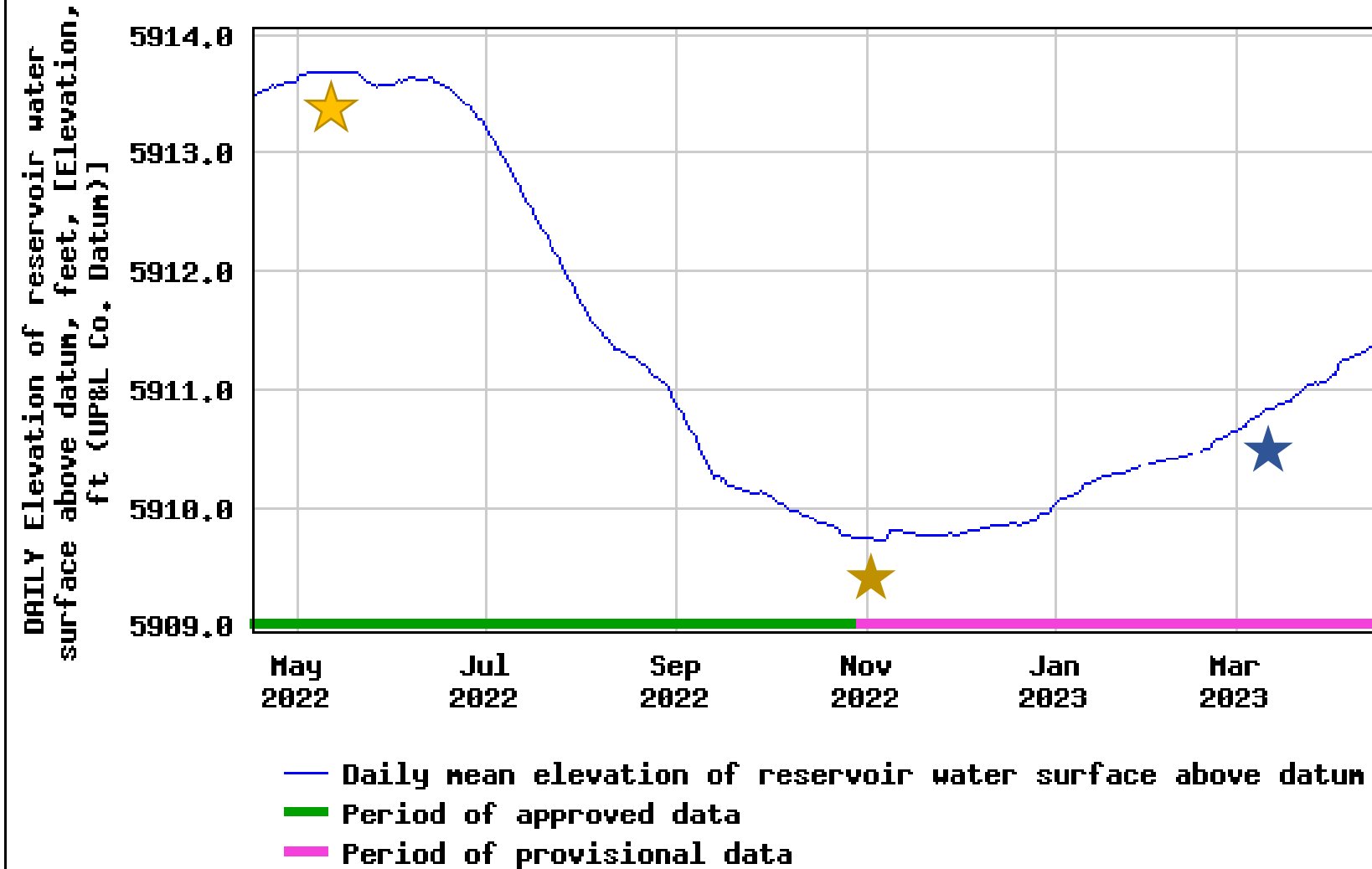


Bear Lake Conditions and 2023 Irrigation Storage Allocation

Bear River Commission
April 18, 2023



USGS 10055000 BEAR LAKE AT STATE PARK MARINA NR GARDEN CITY, UT



Notable Bear Lake Elevations

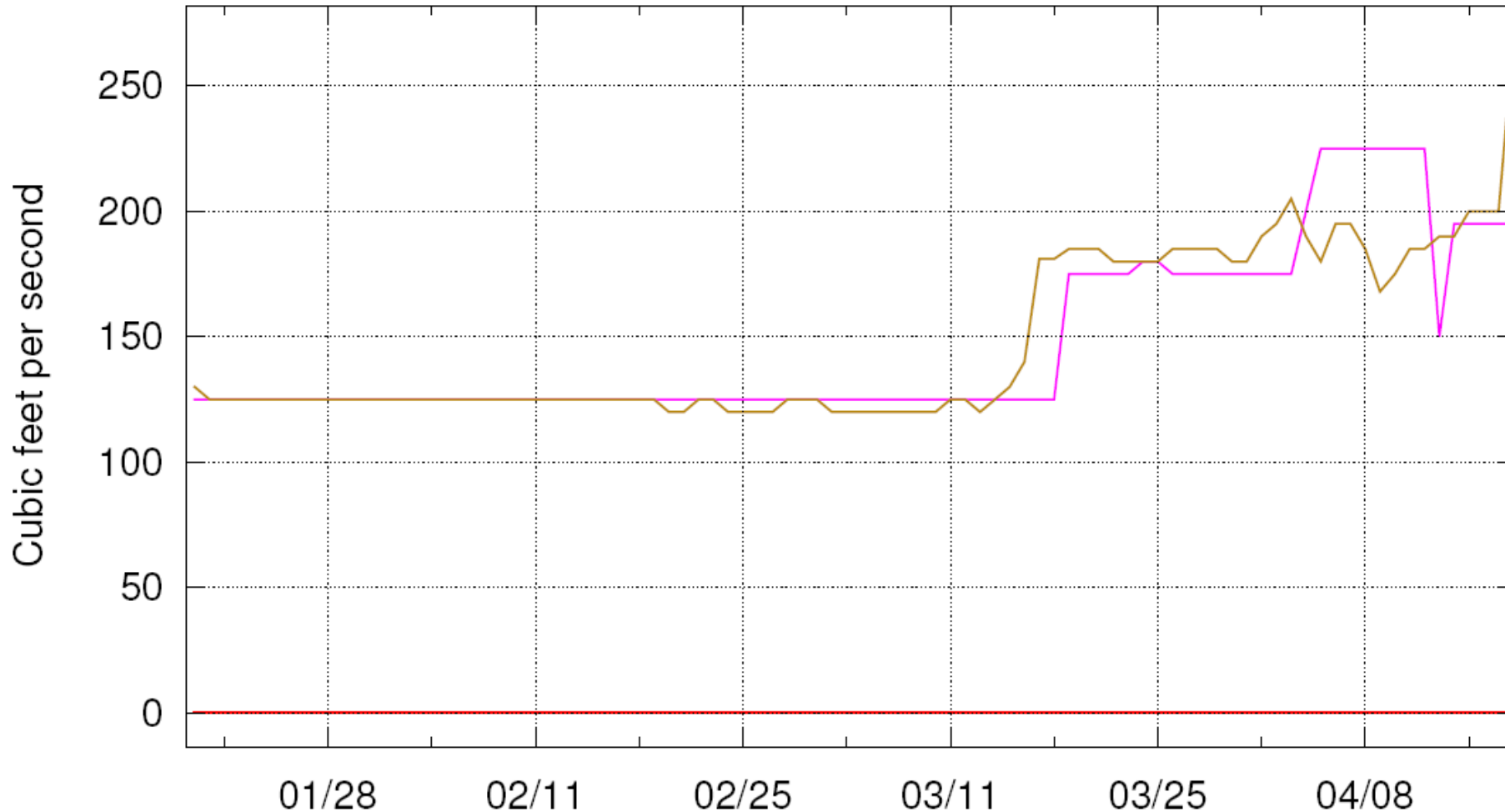
May 6, 2022
High Elevation 5,913.69' ★

October 6, 2022
Low Elevation 5,909.71' ★

Current
April 17, 2023 5,911.39'

*Bear Lake/Mud Lake Equivalent
Elevation exceeded 5911.0'*
March 9, 2023 ★

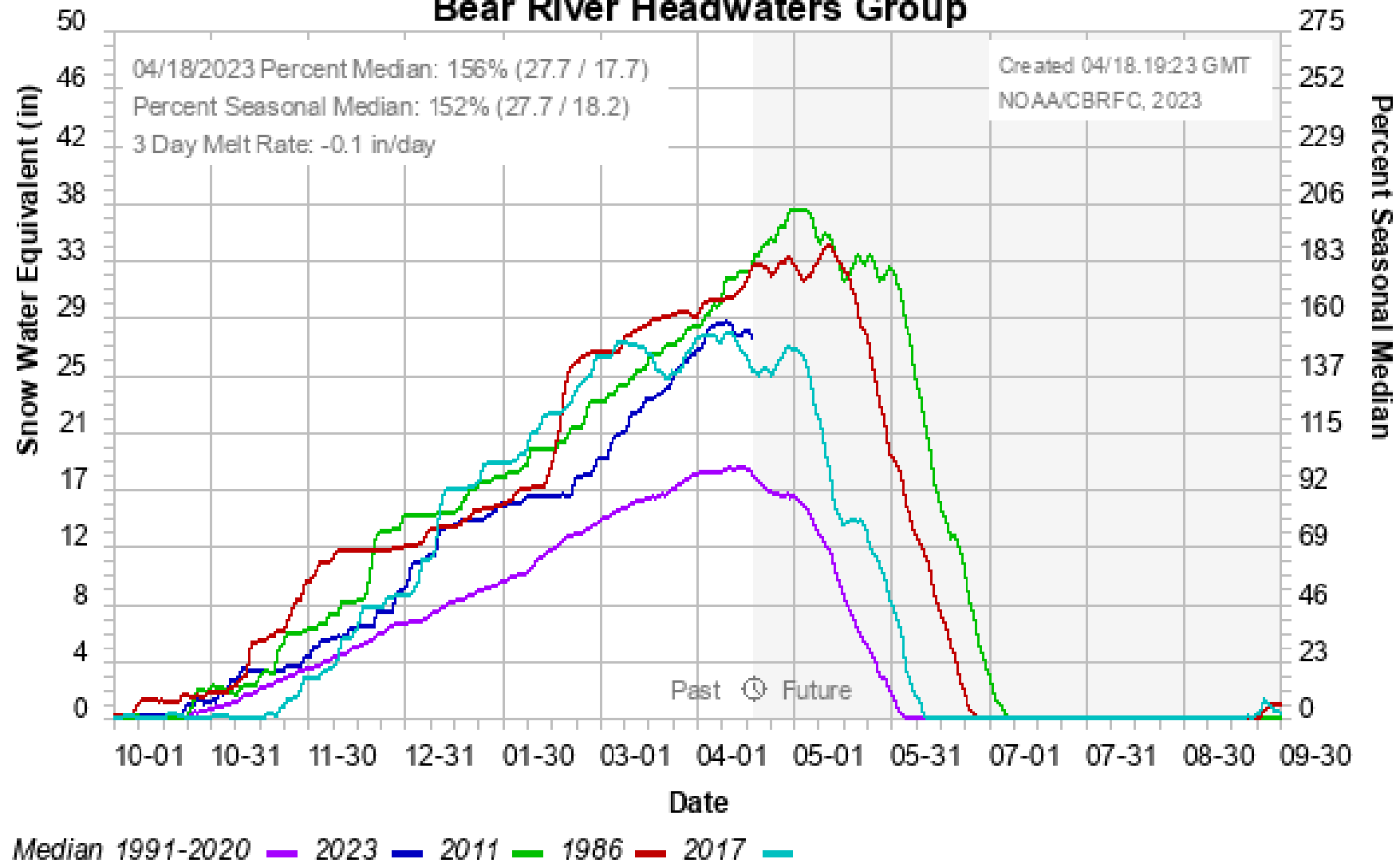
Recent Flows at Bear Lake



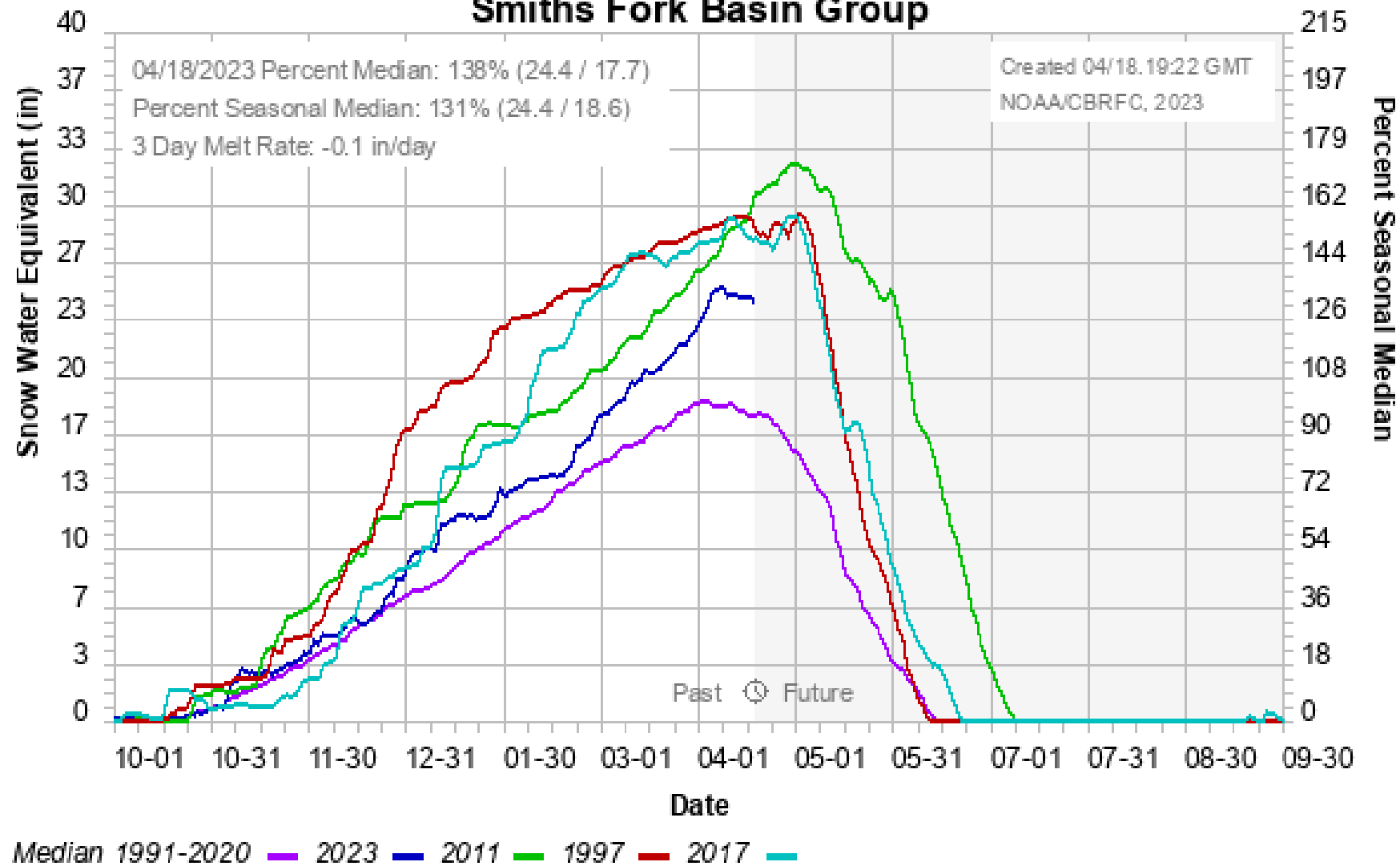
Current Flows:
April 17, 2023
Rainbow: 268 cfs
Causeway: 195 cfs
Outlet: Closed

Causeway: Daily Avg. Water Flow (cfs) — magenta line
Rainbow Inlet Canal Near Dingle: Water Flow (cfs) — olive line
Bear Lake Outlet Canal: Water Flow (cfs) — red line

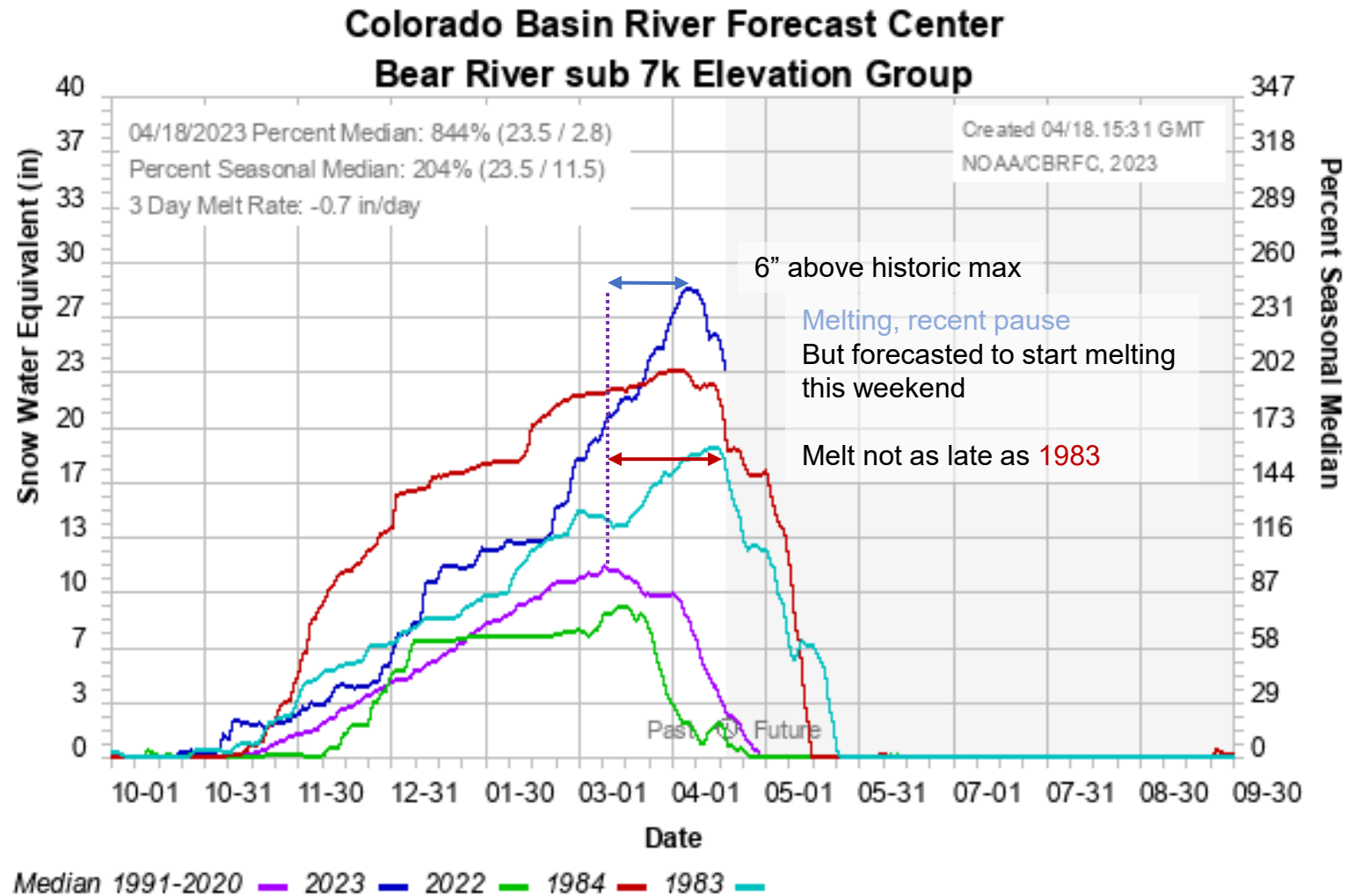
Colorado Basin River Forecast Center Bear River Headwaters Group



Colorado Basin River Forecast Center Smiths Fork Basin Group



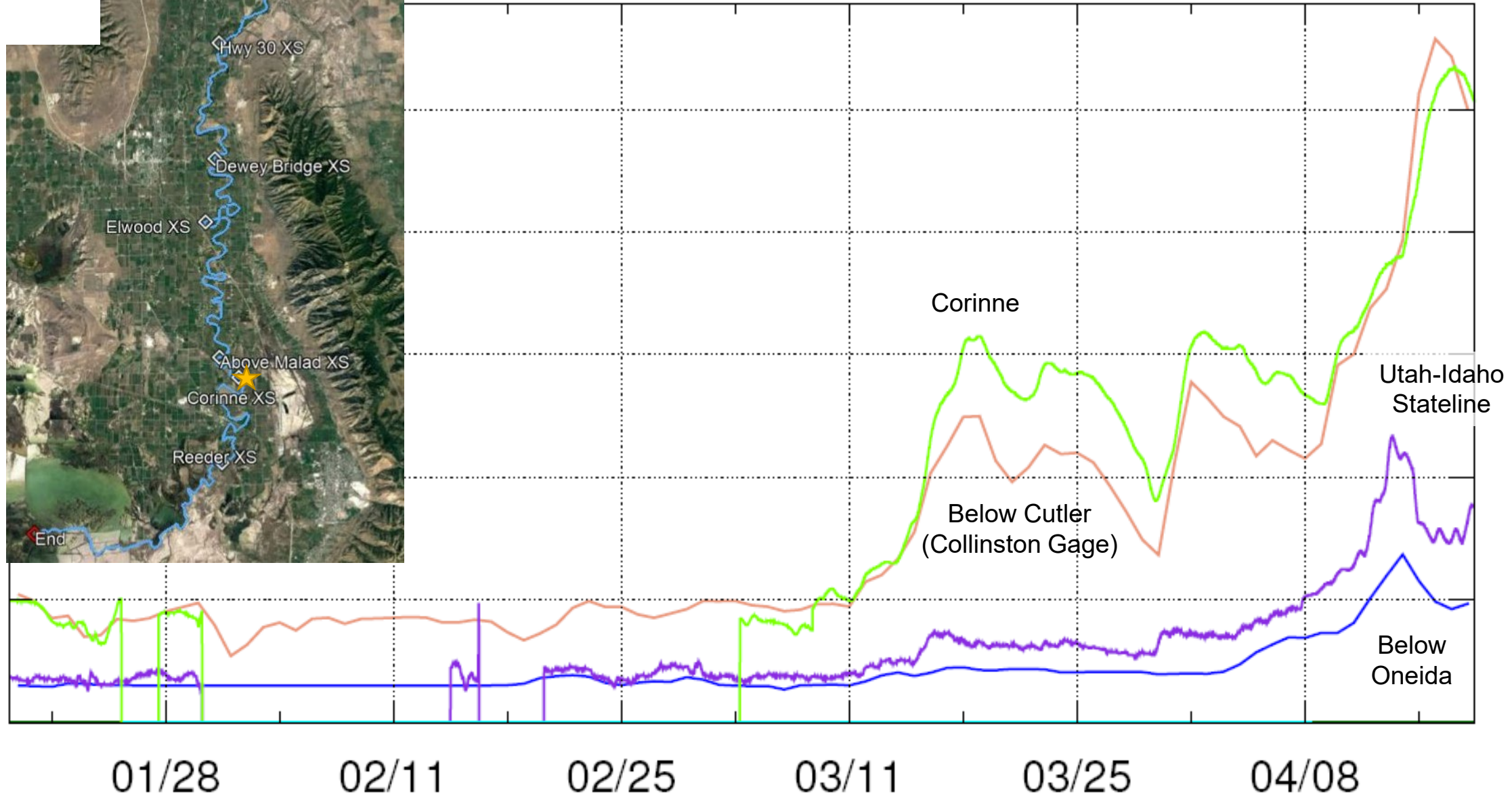
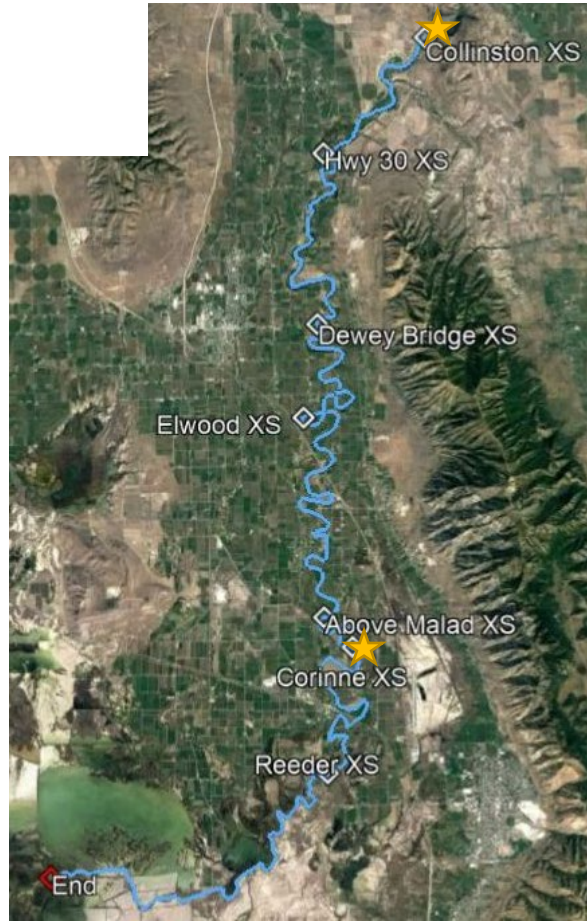
Historical Max SWE in low elevation (below 7,000 feet)

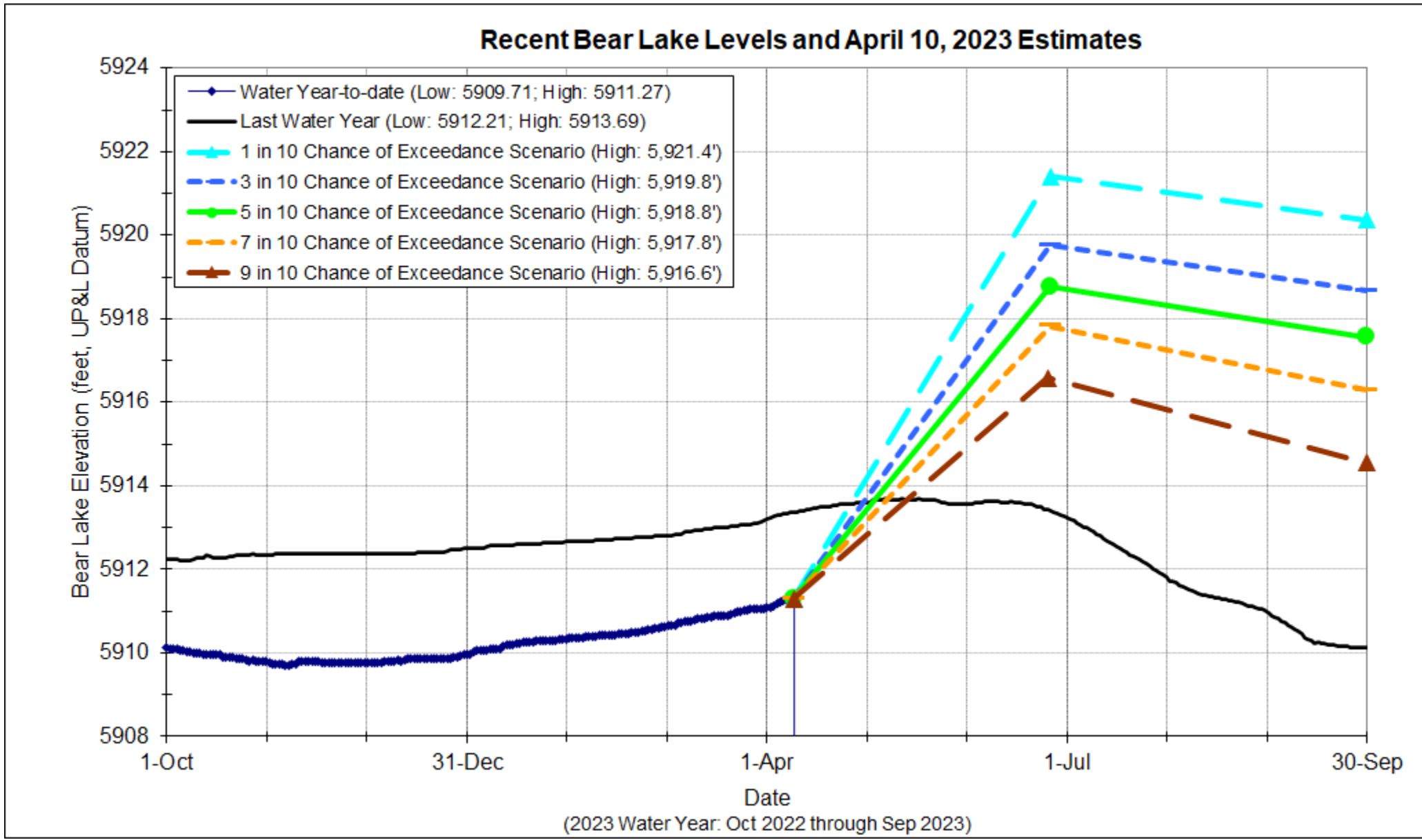


Recent Flows at Streamflow Gages below Bear Lake

Cubic feet per second

5000
4000
3000
2000
1000
0





2023 Bear Lake Irrigation Storage Allocation

- Bear Lake estimated maximum spring elevation is **5,918.8** feet
- Bear Lake Irrigation Storage Allocation is **245,000** acre-feet



Additional Estimates

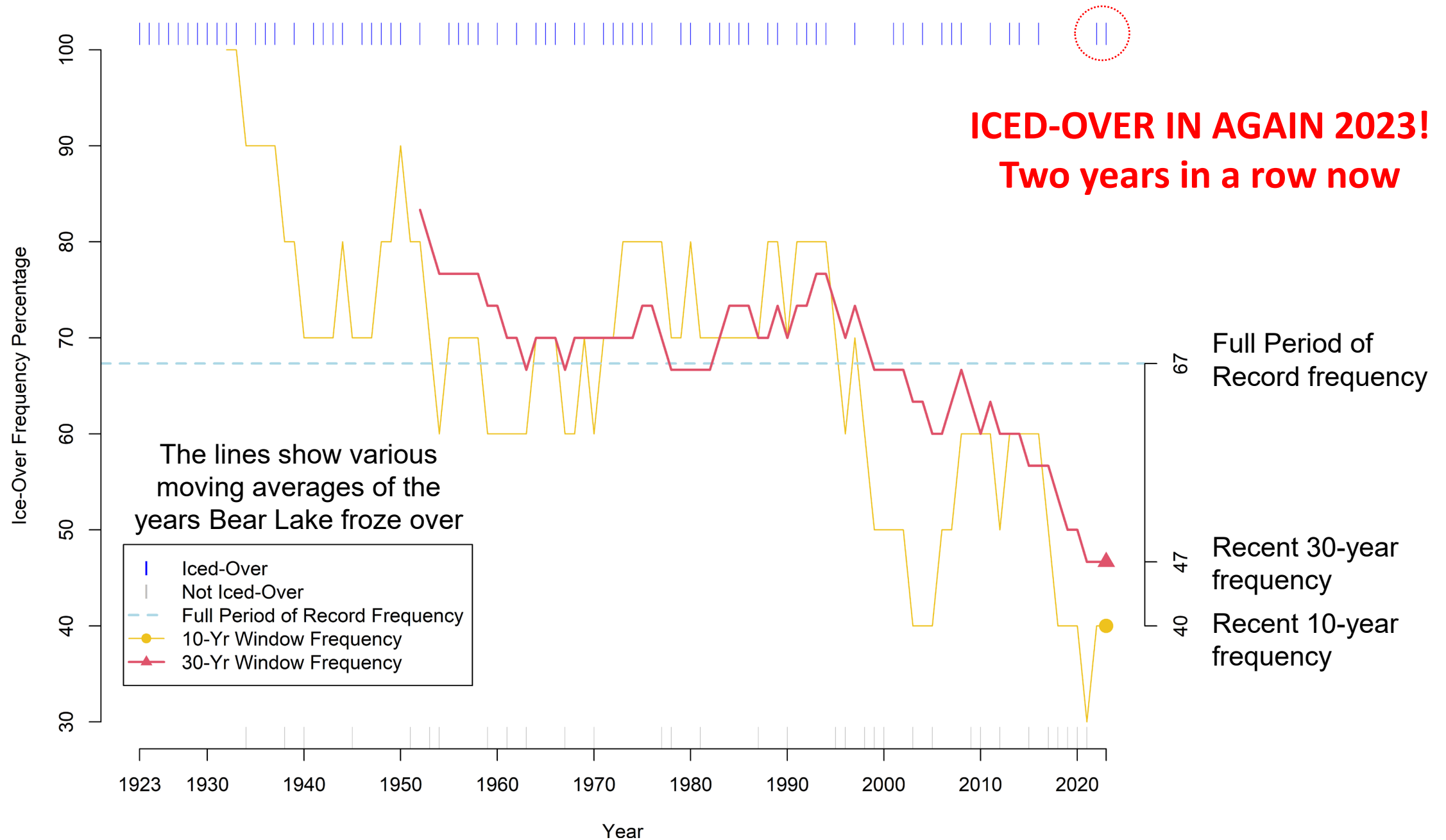
Probability of Exceedance	NRCS April 10, 2023 April-July Forecast (Thousands of AF) Bear River at Stewart Dam	Estimated Spring Maximum Bear Lake Elevation	Estimated Date of Spring Maximum Bear Lake Elevation	Increase from Previous Low Elevation	Irrigation Allocation (Thousands of AF)	Estimated Irrigation Storage Demand (TAF)	Following Fall Low Elevation using Lesser of Allocation or Estimated Storage Demand (includes Average Net Bear Lake Inflow)	Estimated Seasonal Bear Lake Decrease (Spring Max to Fall Low) in feet
10%	575	5921.4'	June 26	11.7'	245	0	5920.4'	1.0
30%	460	5919.8'	June 26	10.1'	245	3	5918.7'	1.1
50%	390	5918.8'	June 26	9.1'	245	11	5917.6'	1.2
70%	325	5917.8'	June 26	8.1'	245	33	5916.3'	1.5
90%	240	5916.6'	June 25	6.9'	245	66	5914.5'	2.0

Bear Lake Ice-Over Records

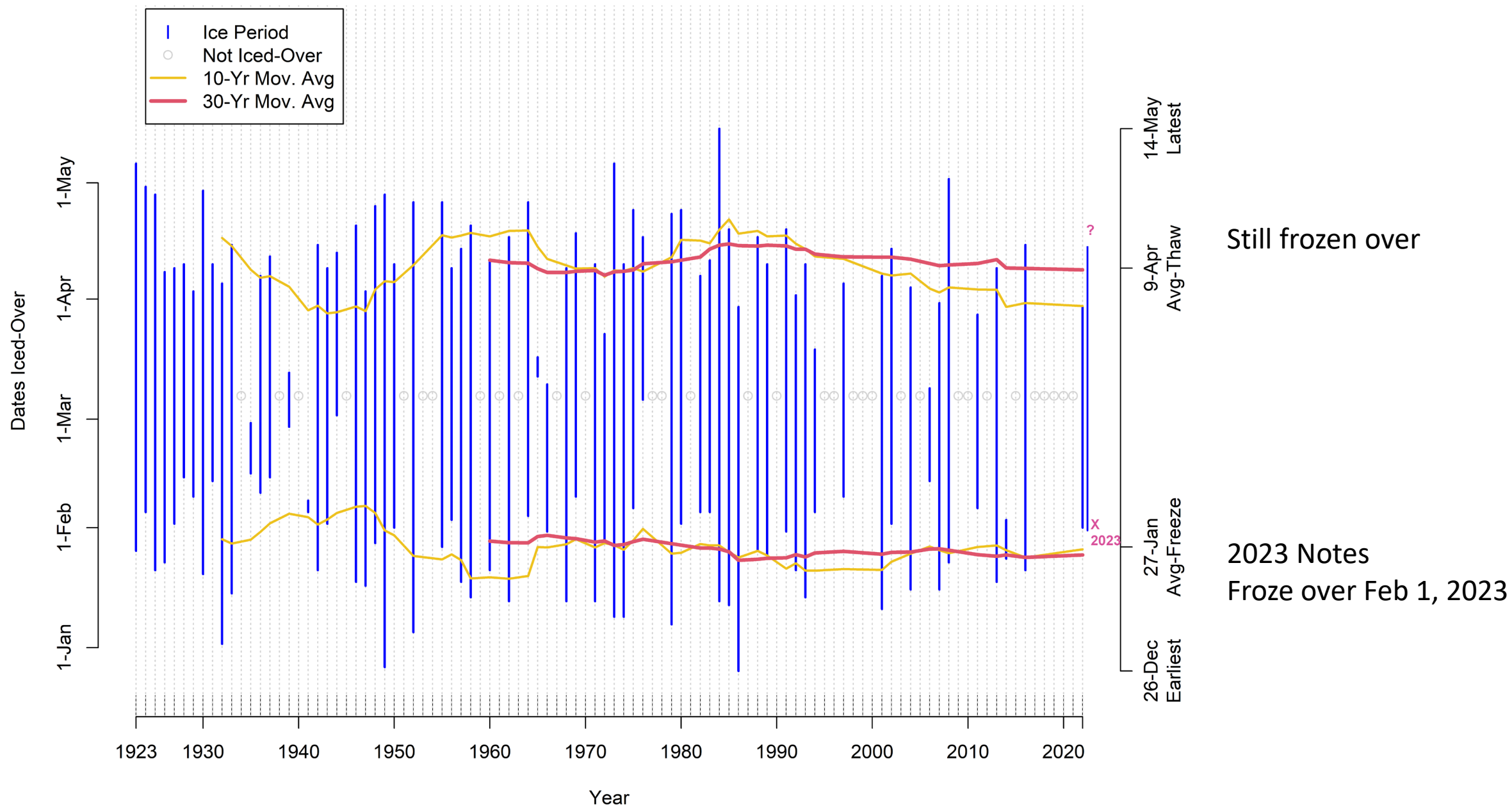
- **101 years of data**
- PacifiCorp Lifton operators started in 1923
- Now maintained by Emily Wright of Utah Division of Wildlife Resources
- If Bear Lake completely ices-over, record:
 - Date of first ice-over
 - Date of complete thaw

	A	C	E	F	G	H	I	J	K	L	M	N
1	Bear Lake Freeze and Ice Out Data (1923-present)											
2	**Bear Lake was judged to have "frozen over" when you could go up to a high point (Logan Canyon overlook) and look down and not see any open water on the lake***											
3	Data from UP&L. Rock Holbrook, retired UP&L kept data from mid-1970's-2000. After 2000, Scott Tolentino, UDWR, has kept the record											
4	Year	Julian Freeze	Julian Ice Out	# Days	Ice Over?			Fun Statistics				
5	1923	23	126	103	1	1923	- On average, since 1923, Bear Lake has froze over 68% of the time in the last 97 years, but only 44% of the time in the last 25 years (1995-2019)					
6	1924	36	120	84	1	1924						
7	1925	21	118	97	1	1925						
8	1926	23	98	75	1	1926						
9	1927	26.41538462	57	31	1	1927	- Longest period of no freeze: 3 years ('98, '99, '00 & '17, '18, '19)					
10	1928	45	100	55	1	1928	- Earliest freeze over: 12/27/1985					
11	1929	4	93	89	1	1929	- Latest freeze over: 3/12/1965					
12	1930	20	119	99	1	1930						
13	1931	44	100	56	1	1931	- Average date of freeze over: January 18					
14	1932	2	95	93	1	1932						
15	1933	15	105	90	1	1933	- Average date ice gone: April 9					
16	1934	NA	NA	0	0	1934						
17	1935	46	59	13	1	1935	- Average number of days frozen = 73					
18	1936	41	97	56	1	1936						
19	1937	45	102	57	1	1937	- Earliest date ice gone: 2/8/1941					
20	1938	NA	NA	0	0	1938						
21	1939	58	72	14	1	1939	- Latest date ice gone: 5/14/1984					
22	1940	NA	NA	0	0	1940						
23	1941	36	39	3	1	1941	- Shortest amount of time frozen: 3 days (1941)					
24	1942	21	105	84	1	1942						
25	1943	33	99	66	1	1943	- Driest period recorded: 61 days (Sep 12 - Nov 12- 1952)					
26	1944	61	103	42	1	1944						
27	1945	NA	NA	0	0	1945	- Average frost-free period 137 days					
28	1946	18	110	92	1	1946						
29	1947	17	93	76	1	1947						
30	1948	28	115	0	0	1948						
31	1949	-4	118	122	1	1949						

Bear Lake Ice-Over Frequency Trends 1923-2023



Bear Lake Ice Cover Periods with Freeze/Thaw Date Trends 1923-2022





Questions?