



NEVADA DIVISION OF
WATER RESOURCES



Nevada Department of
**CONSERVATION &
NATURAL RESOURCES**

Smith and Mason Valleys

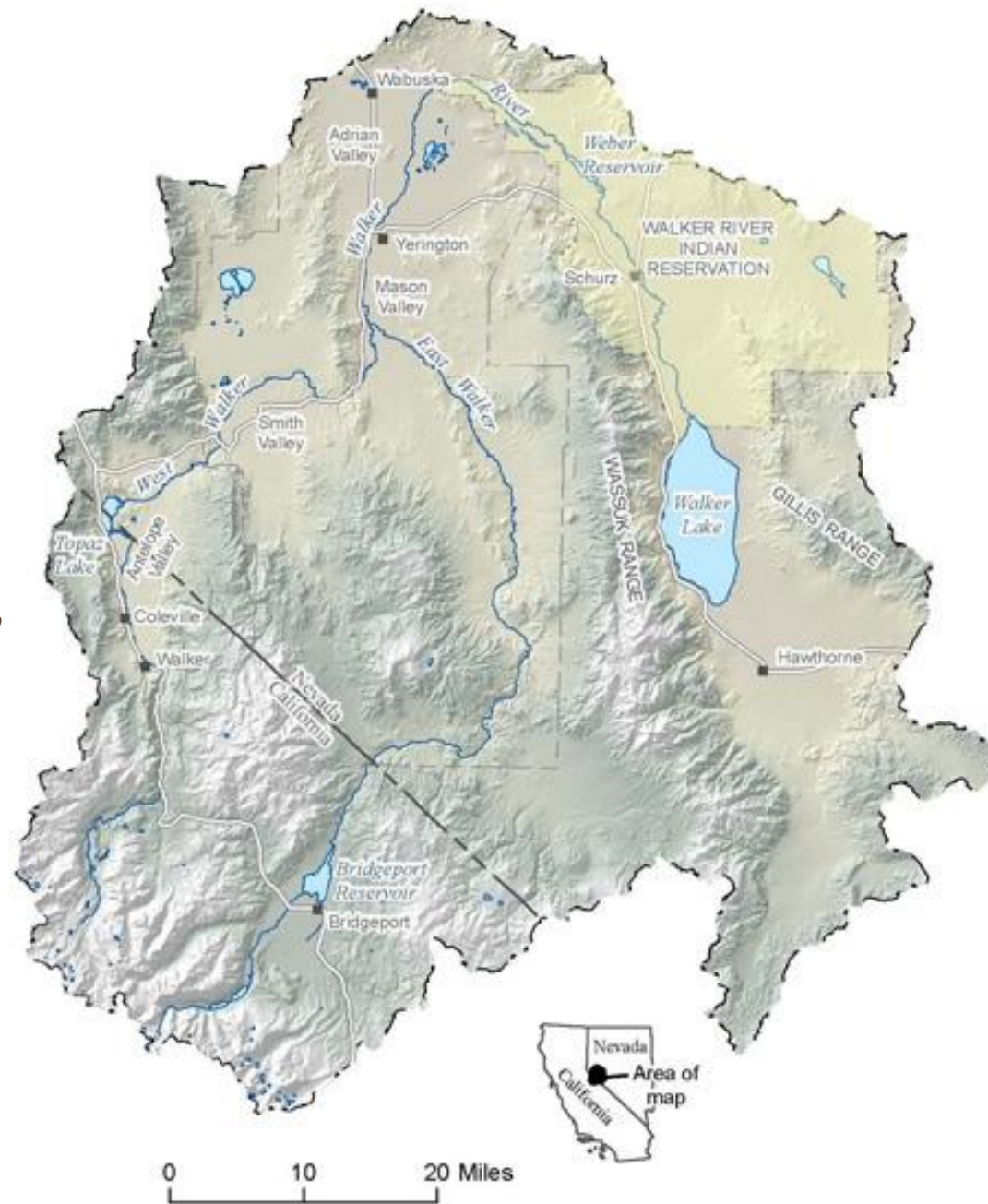
Water Rights & Groundwater Conditions

April 11, 2022, 5:00 pm Smith Valley High School, 20 Day Lane, Smith, NV

April 13, 2022, 5:30 pm Lyon County Administrative Building, 27 S. Main St., Yerington, NV

Presented by:

Nevada Division of Water Resources



NDWR STAFF

- **Adam Sullivan**
State Engineer
- **Wyatt Fereday**
Lead Water Resource Specialist
- **Kip Allander**
Hydrogeologist
- **Chad Walling**
Drilling Regulation Manager
- **AJ Jensby**
Support Water Resource Specialist

OVERVIEW

- Walker River Surface/Groundwater Water Rights Relationship
- Meter Reporting Order
- Current Drought
- Groundwater Conditions in Smith and Mason Valleys
- Stream efficiencies in Smith and Mason Valleys
- Well Drilling Activities
- Online Resources



SURFACE WATER IRRIGATION RIGHTS



1936 Walker River Decree

- Managed by Federal Water Master
- “Natural Flow” rights based on priority



SURFACE WATER IRRIGATION RIGHTS



Storage Rights

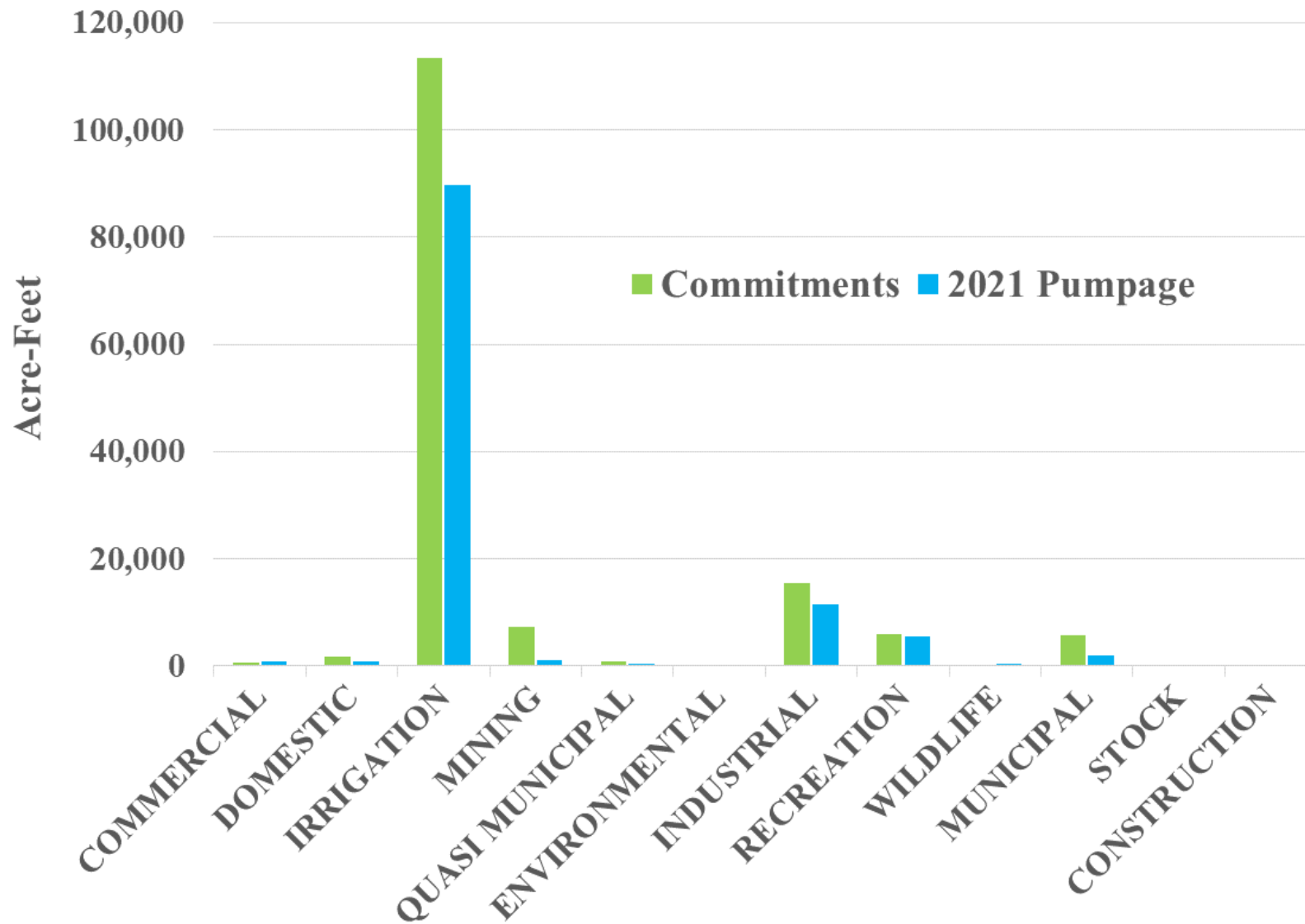
- Bridgeport and Topaz Reservoirs
- Managed by WRID
- Based on annual storage allocation

GROUNDWATER IRRIGATION RIGHTS

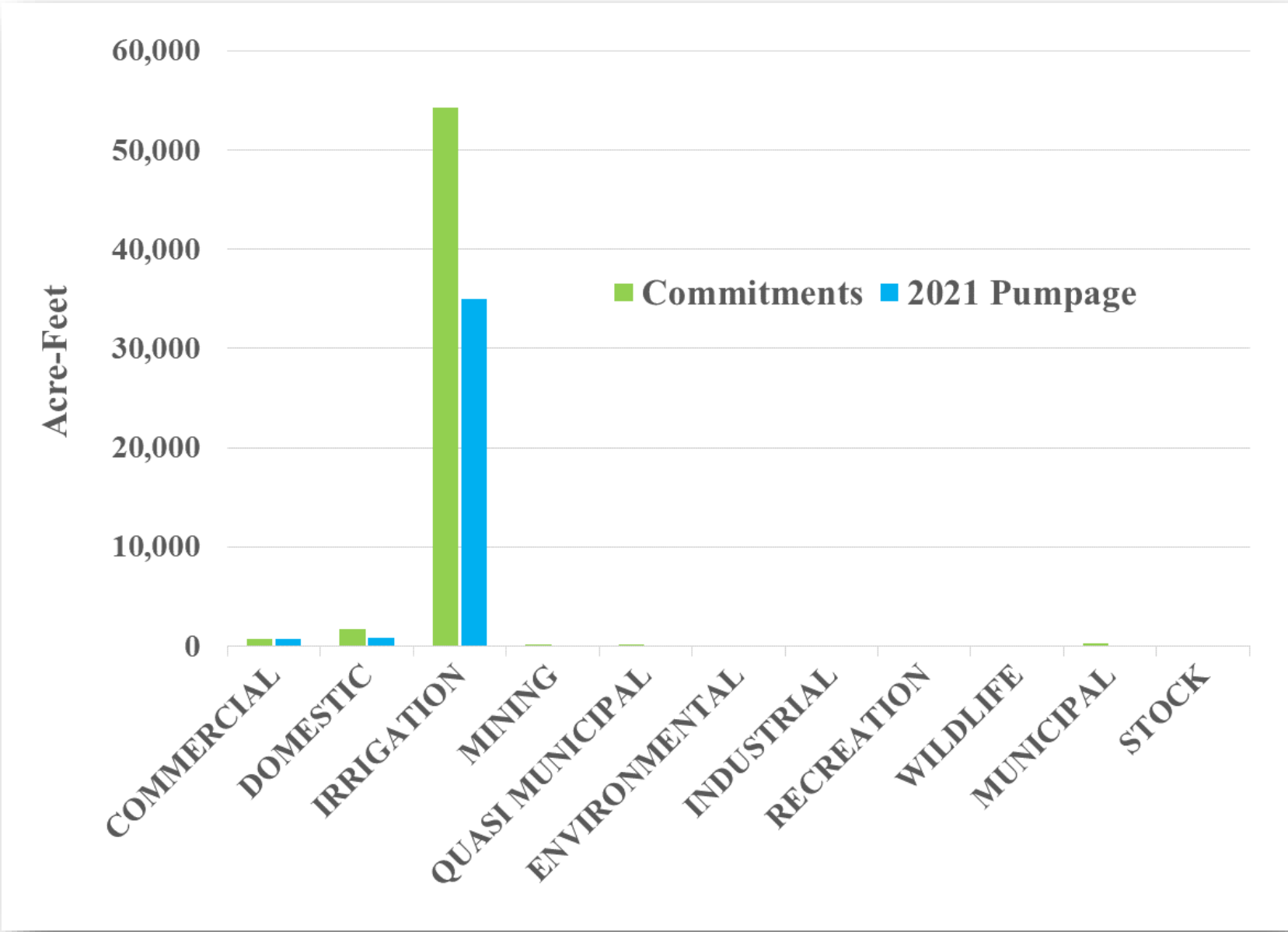
- Primary groundwater (GW) rights: stand-alone
- Supplemental GW rights: back-up to surface water (SW) rights – Decree or Storage rights
- Limited to 4.0 acre-feet per acre from all sources – cumulative primary GW, supplemental GW, and SW



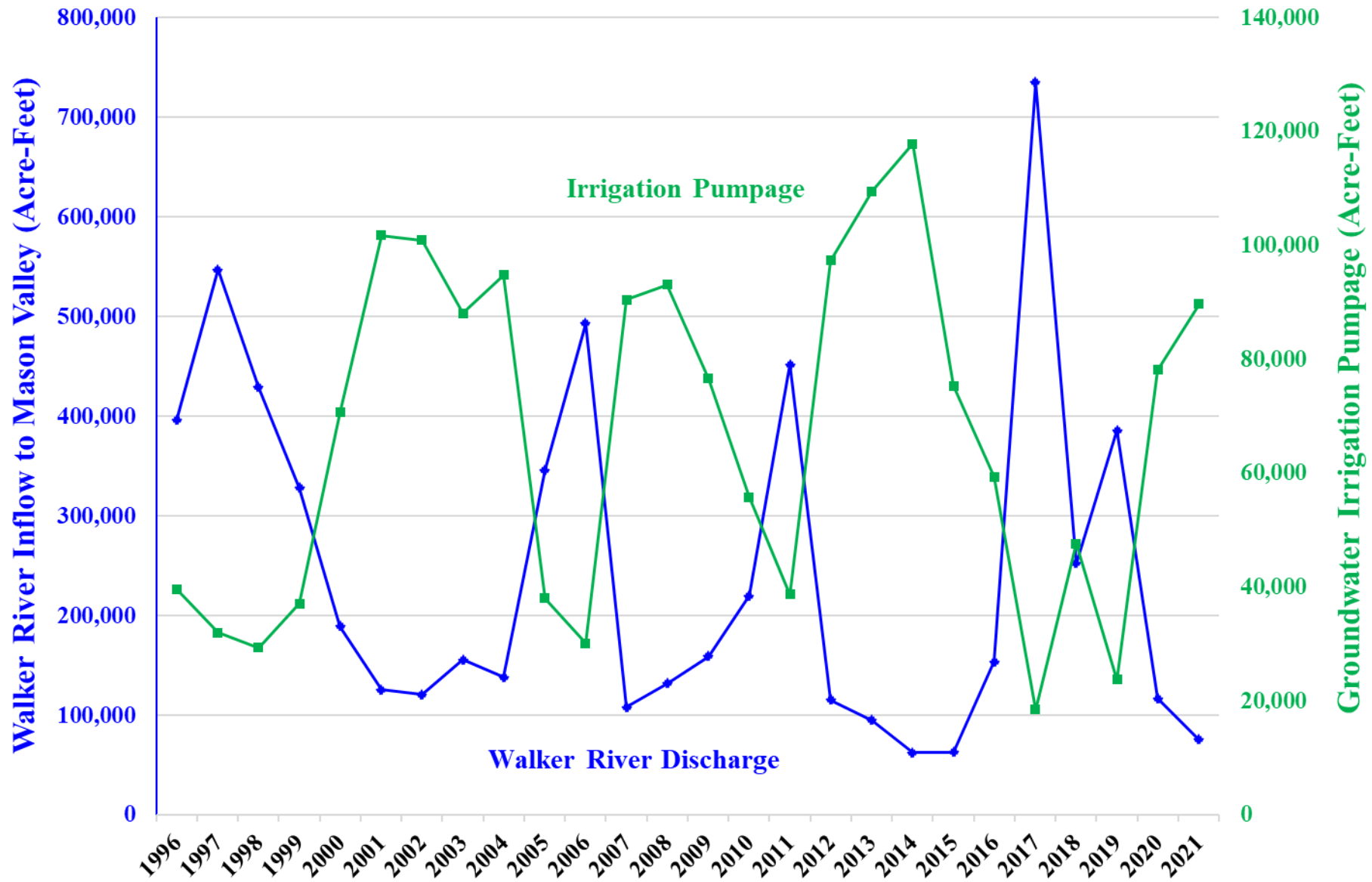
MASON VALLEY GROUNDWATER RIGHTS



SMITH VALLEY GROUNDWATER RIGHTS





MASON VALLEY SURFACE VS. GROUNDWATER USE



ORDER 1318: SELF-REPORTING GROUNDWATER USE

- Smith & Mason Valleys
- Requires **monthly** meter reporting
- Domestic, Stockwater, and wells with total duty <5 AF exempt
- meters.water.nv.gov



Manage Meter Readings: WELL A3 (Meter ID: 5756)  


Meter Details

Serial #	x0131110717
Multiplier	1
Meter Type	Digital
No. of Digits	4
Make	IFM
Model	SA4310
Units	Gallons
Injection Meter	No
Deactivated	No
Status	Meter Replaced
Replacement ID	9605

[View Meter Photo\(s\)](#)

Add Meter Reading

Enter Meter Reading Enter Quarterly Usage Enter Total Usage for Year

Reading Date: 

Meter Reading: x 1

Calculated Reading: Gallons

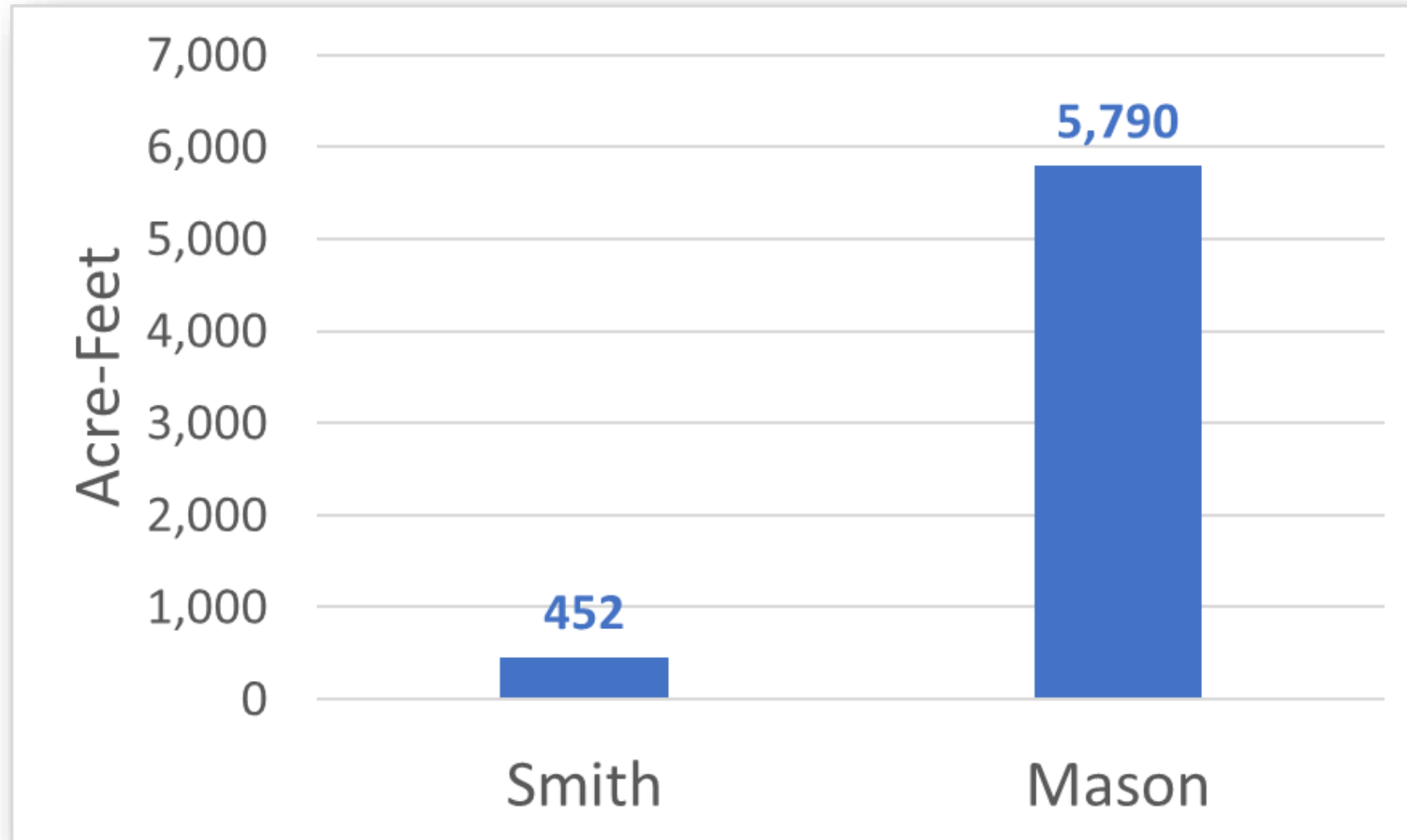
Latest Annual Usage: 906.5 2020

Remarks:

Broken Meter / Meter Replaced

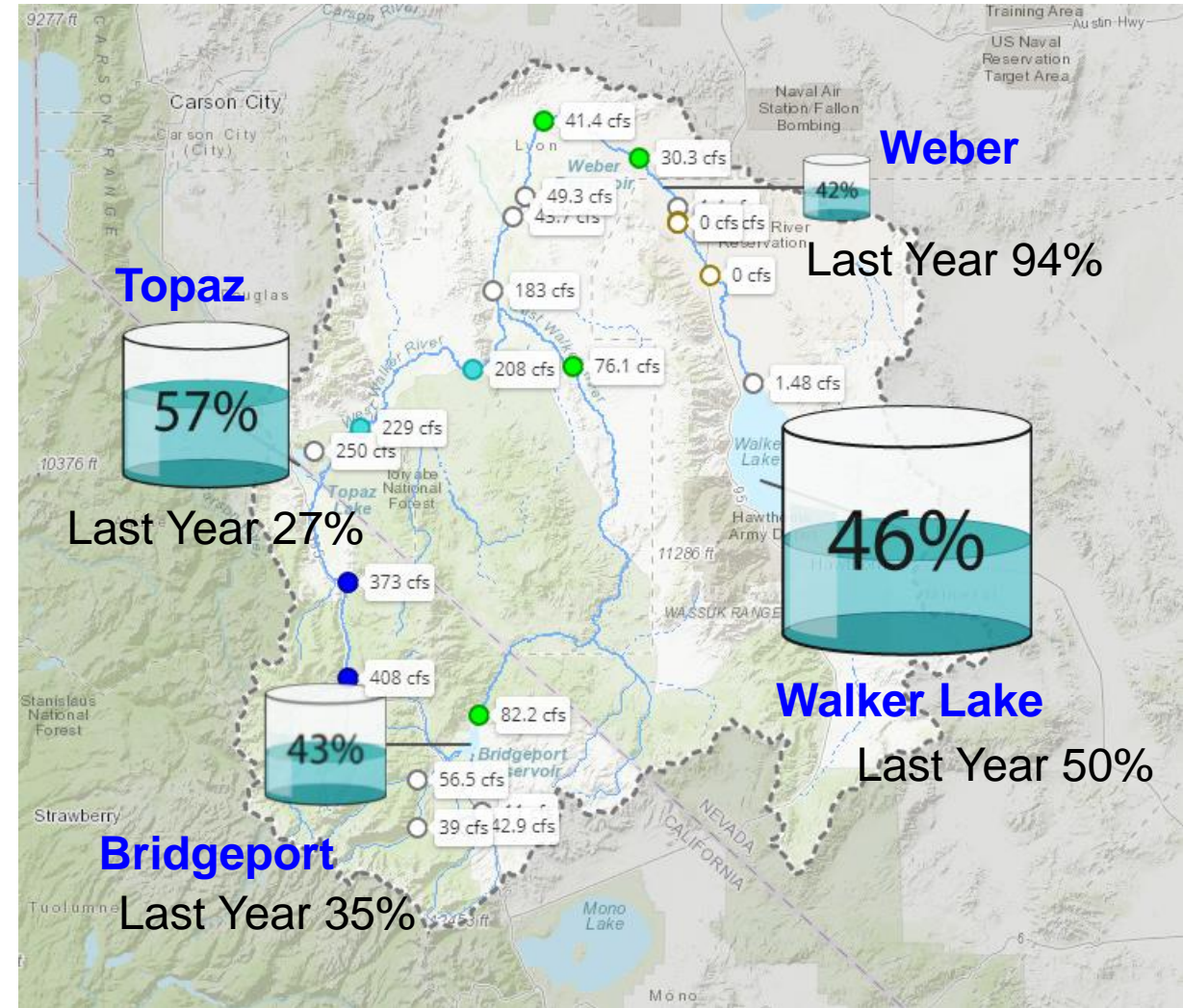
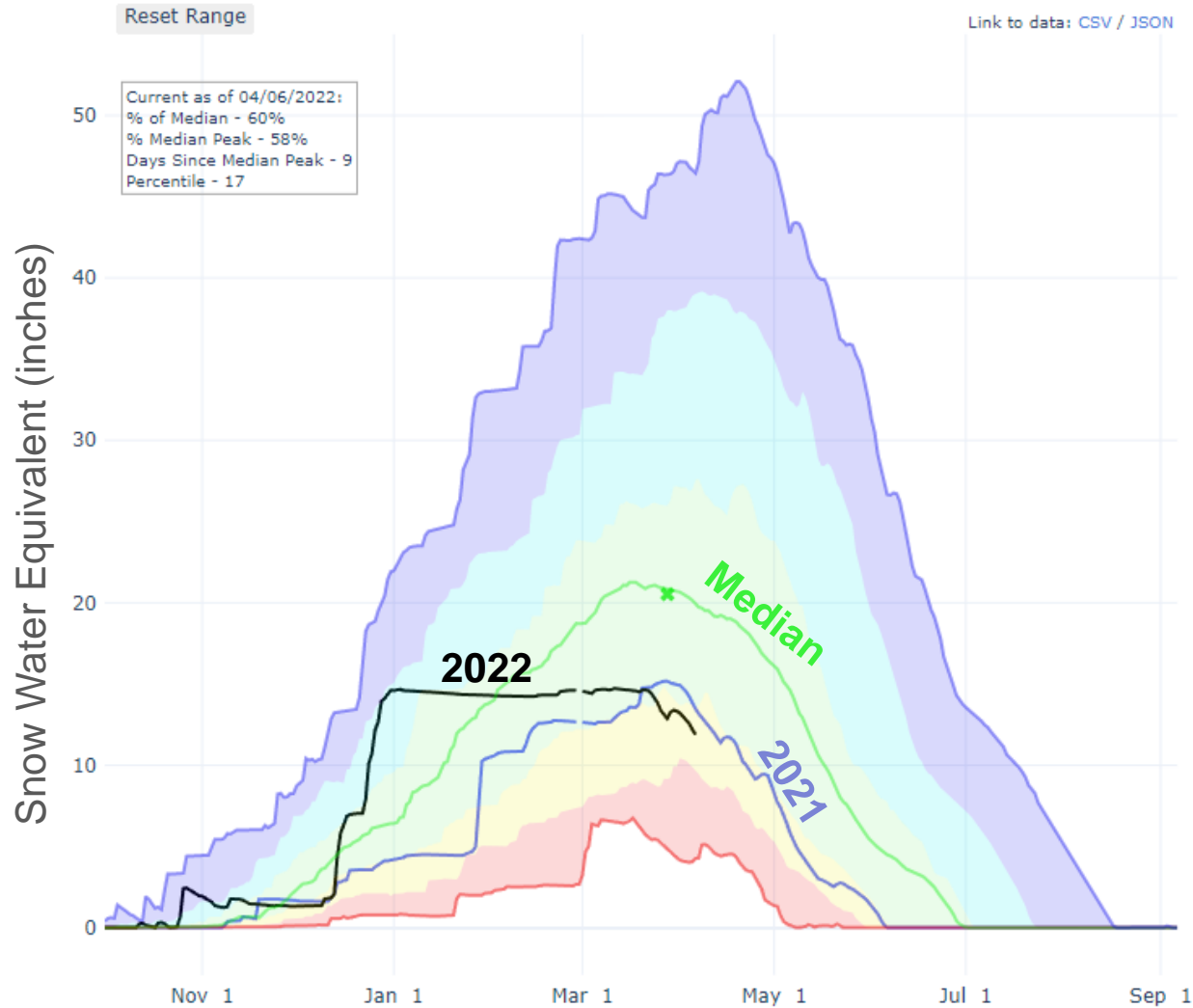
Enter direct reading without applying Meter multiplier.
Include any 'fixed' zeros, if present.

OVER-PUMPING OF PERMITTED DUTIES, 2021



CURRENT CONDITIONS (AS OF APRIL 5, 2022)

SNOW WATER EQUIVALENT IN WALKER

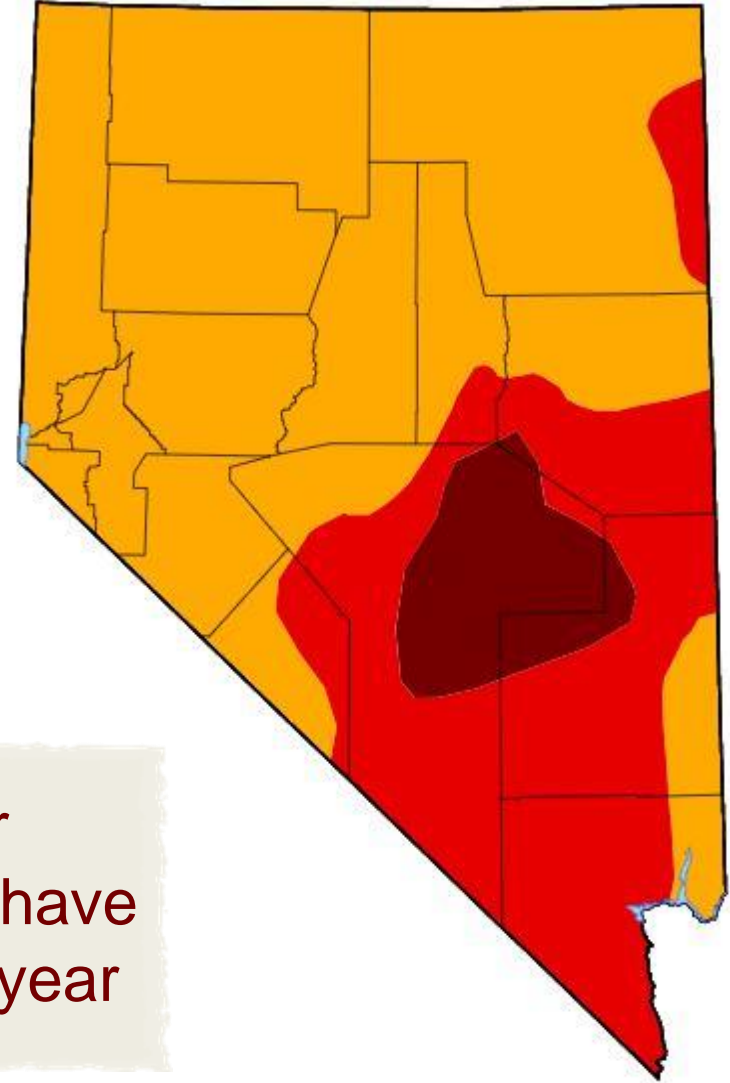
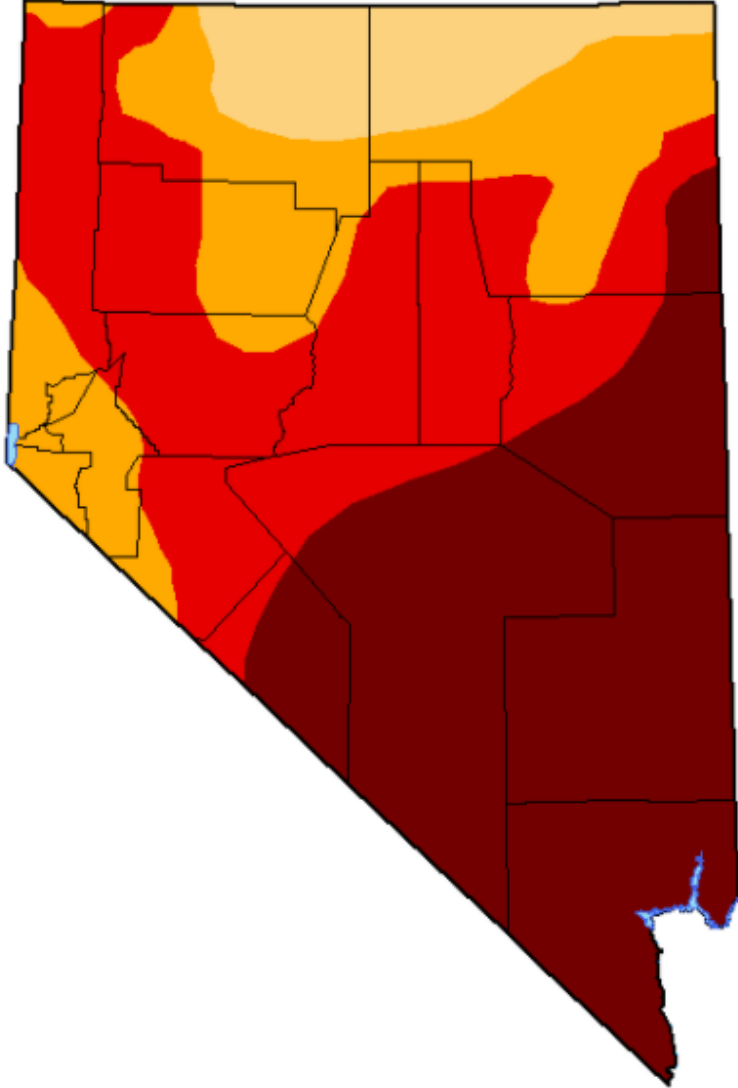


Last Year

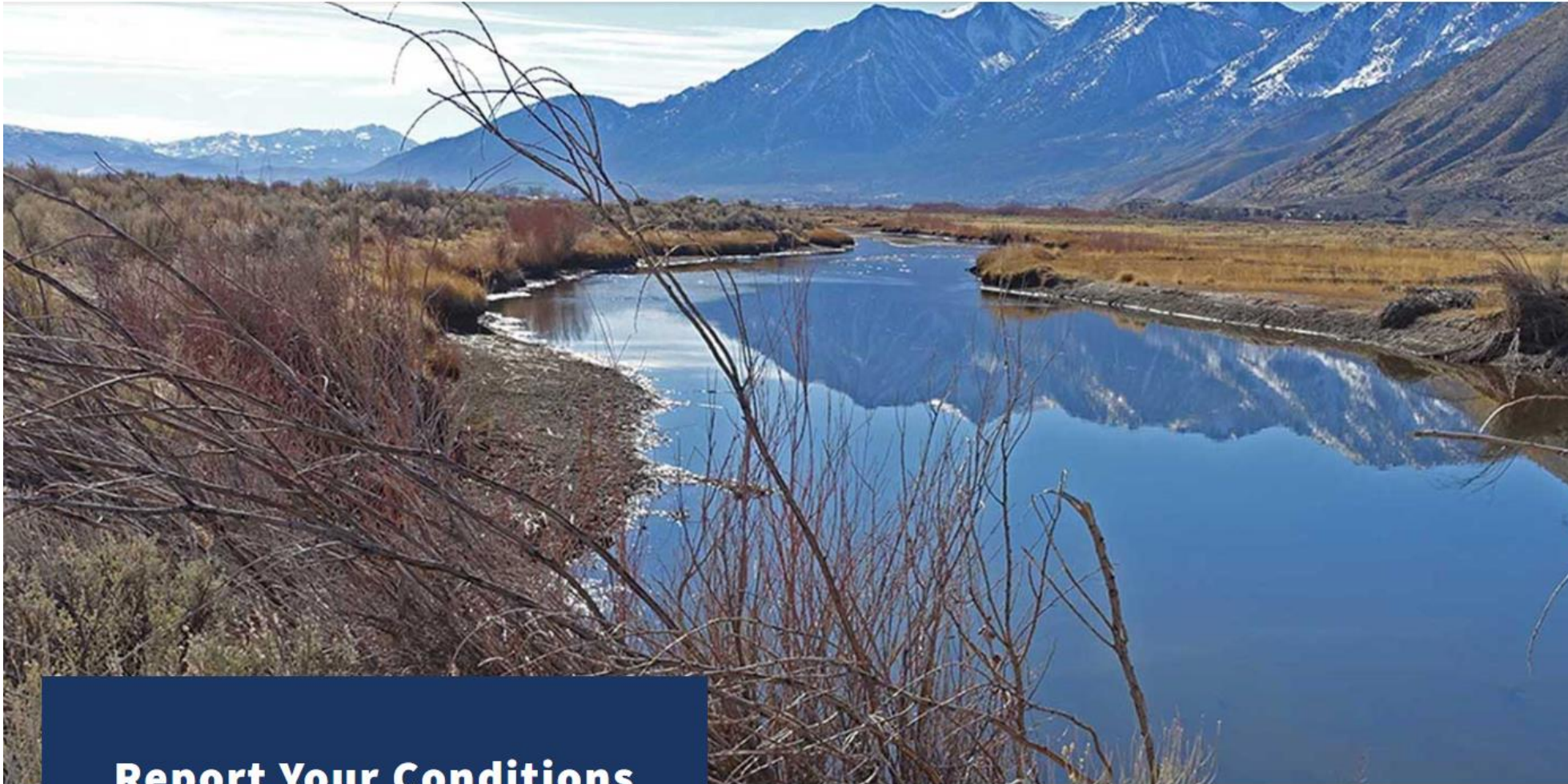
DROUGHT STATUS

Last Week

Moderate
Severe
Extreme
Exceptional



The Drought Monitor indicates conditions have improved some this year



Report Your Conditions



<https://livingwithdrought.com/report-your-conditions/>

GROUNDWATER MONITORING NETWORK

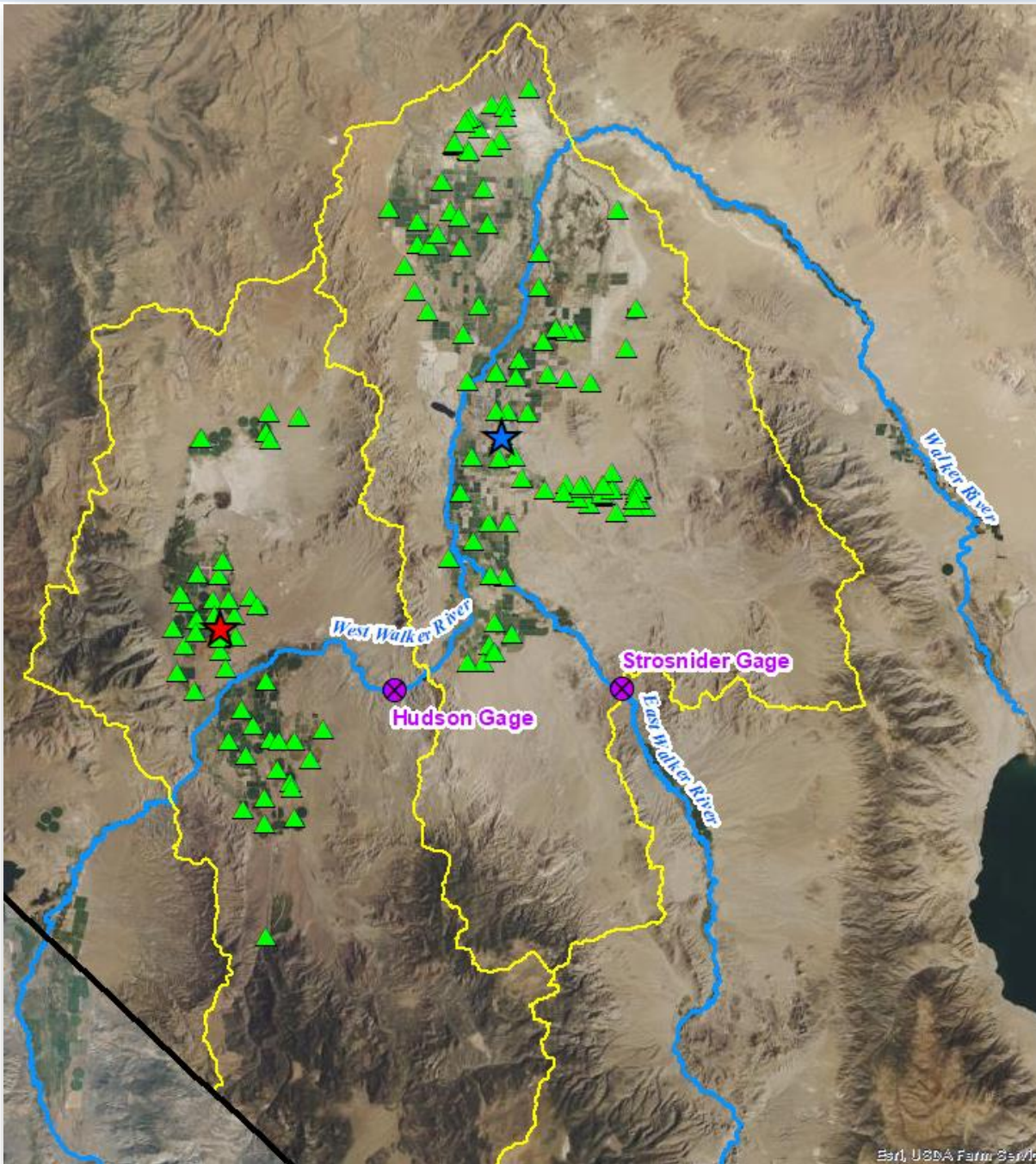
Mason Valley

- 106 monitoring sites

Smith Valley

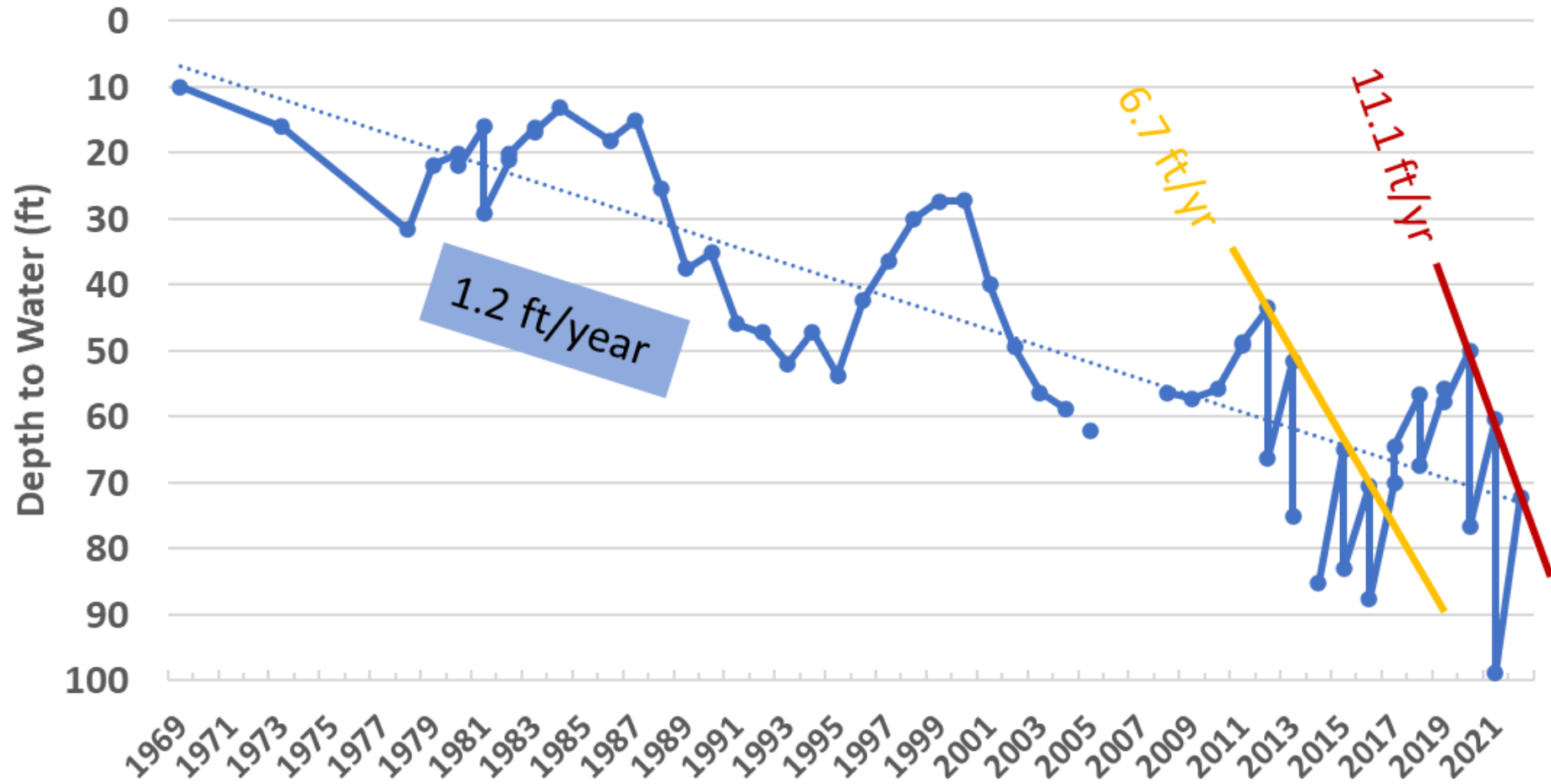
- 37 monitoring sites

Available at: water.nv.gov



SMITH VALLEY WATER LEVELS

★ 107 N11 E23 02ADDD1

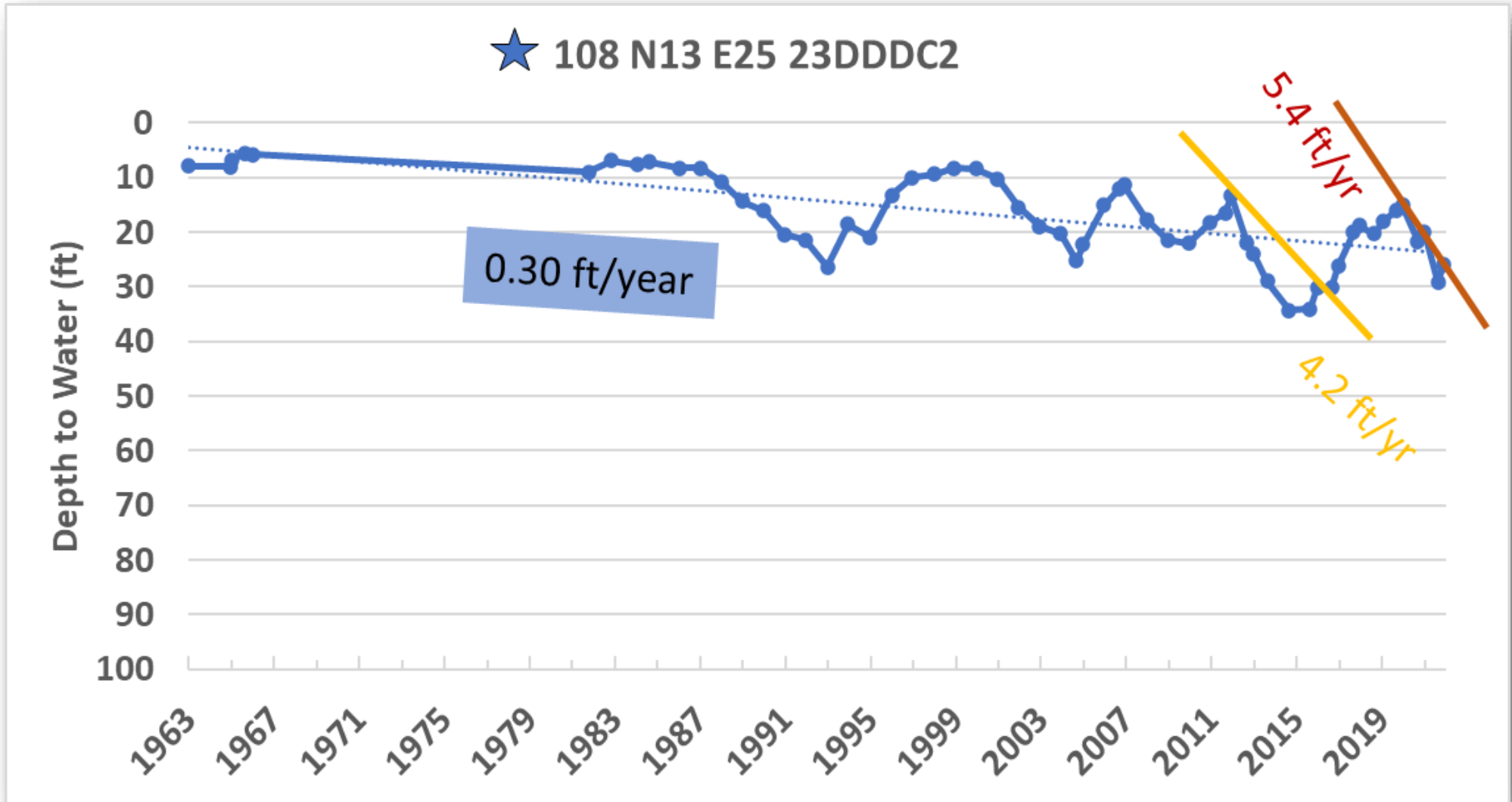


Average Smith Valley Water Level Declines (ft/yr)

2012-16	5.0
2020-22	7.4

MASON VALLEY WATER LEVELS

Average Mason Valley Water Level Declines (ft/yr)	
2012-16	3.4
2020-22	4.1



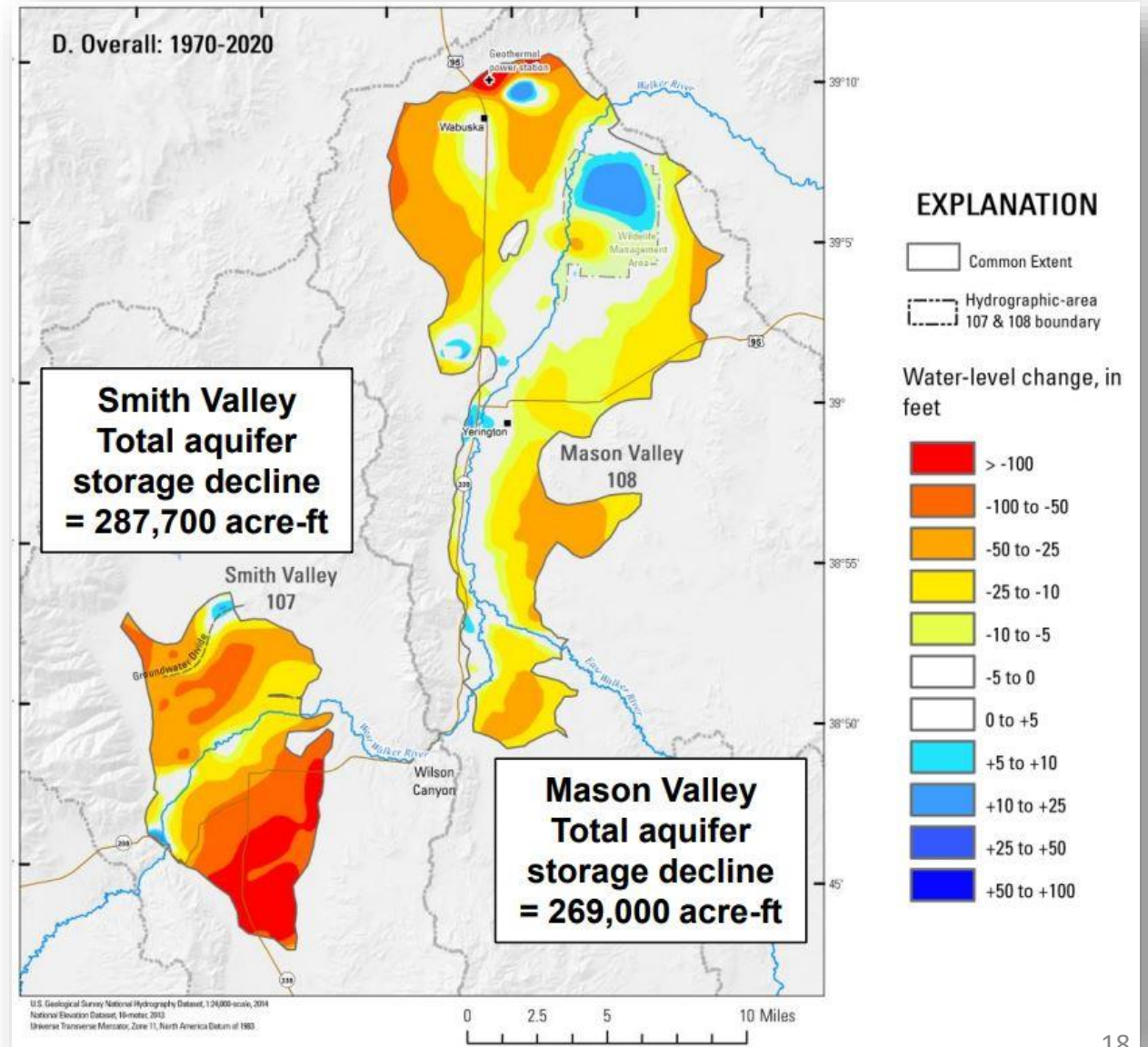
LONG-TERM WATER LEVEL DECLINES (1970 – 2020)

From Davies and Naranjo (USGS)
2022 NWRA Presentation:

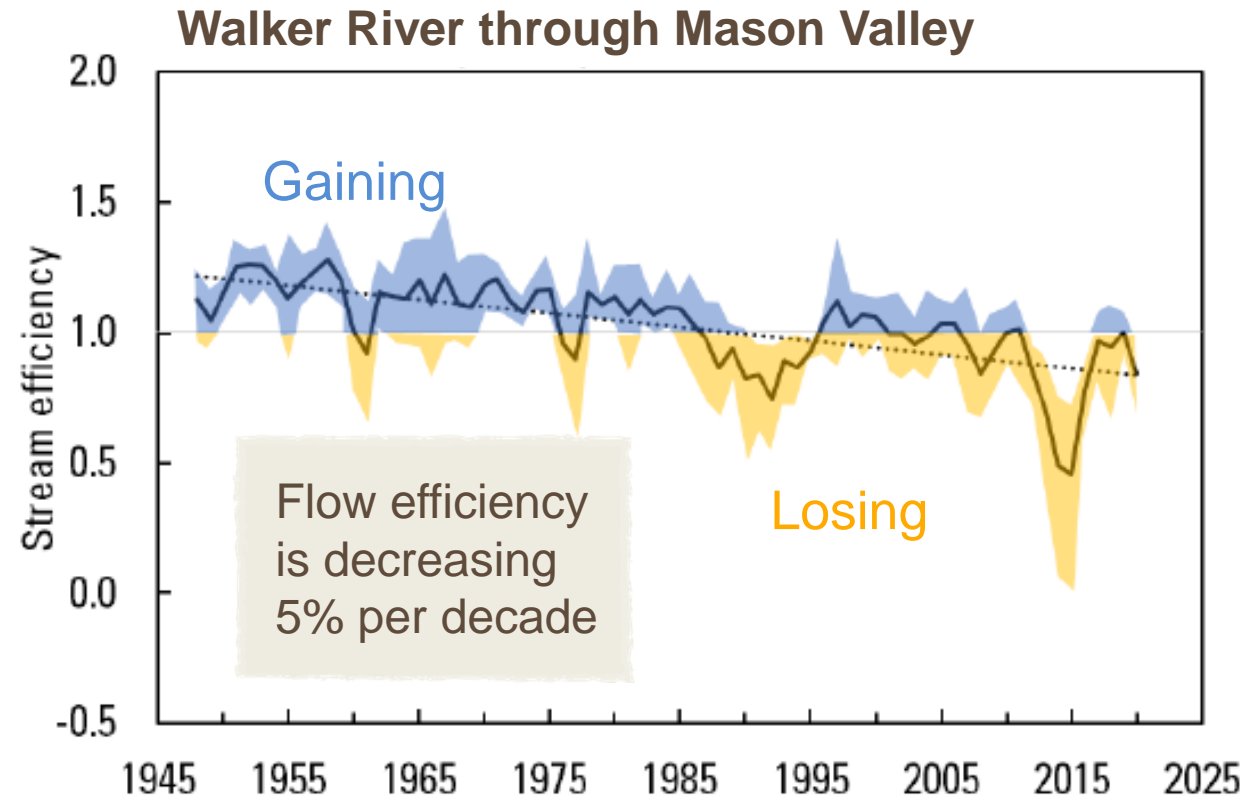
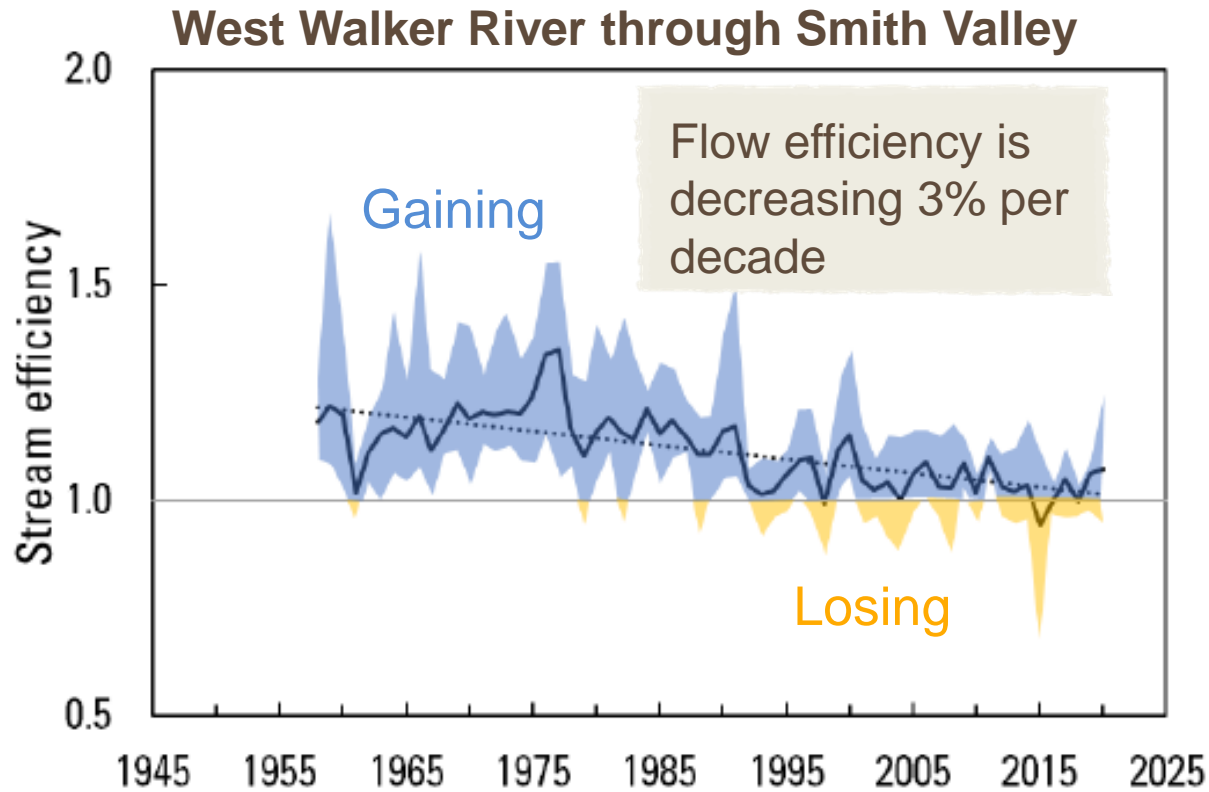
'Estimated effects of pumping on groundwater storage And Walker River stream efficiencies in Smith Valley and Mason Valley, West-Central Nevada'

Total volume removed from groundwater reservoir:

- Smith: **5 Topaz Reservoirs**
- Mason: **6 Bridgeport Reservoirs**



LONG TERM EFFECT OF PUMPING ON WALKER RIVER FLOW EFFICIENCY DURING IRRIGATION SEASON



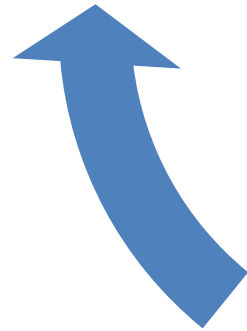
Source: Davies and Naranjo, 2022 NWRA presentation

FEEDBACK CYCLE OF EXCESSIVE PUMPING AND RIVER FLOW EFFICIENCY



Increased
Flow Losses

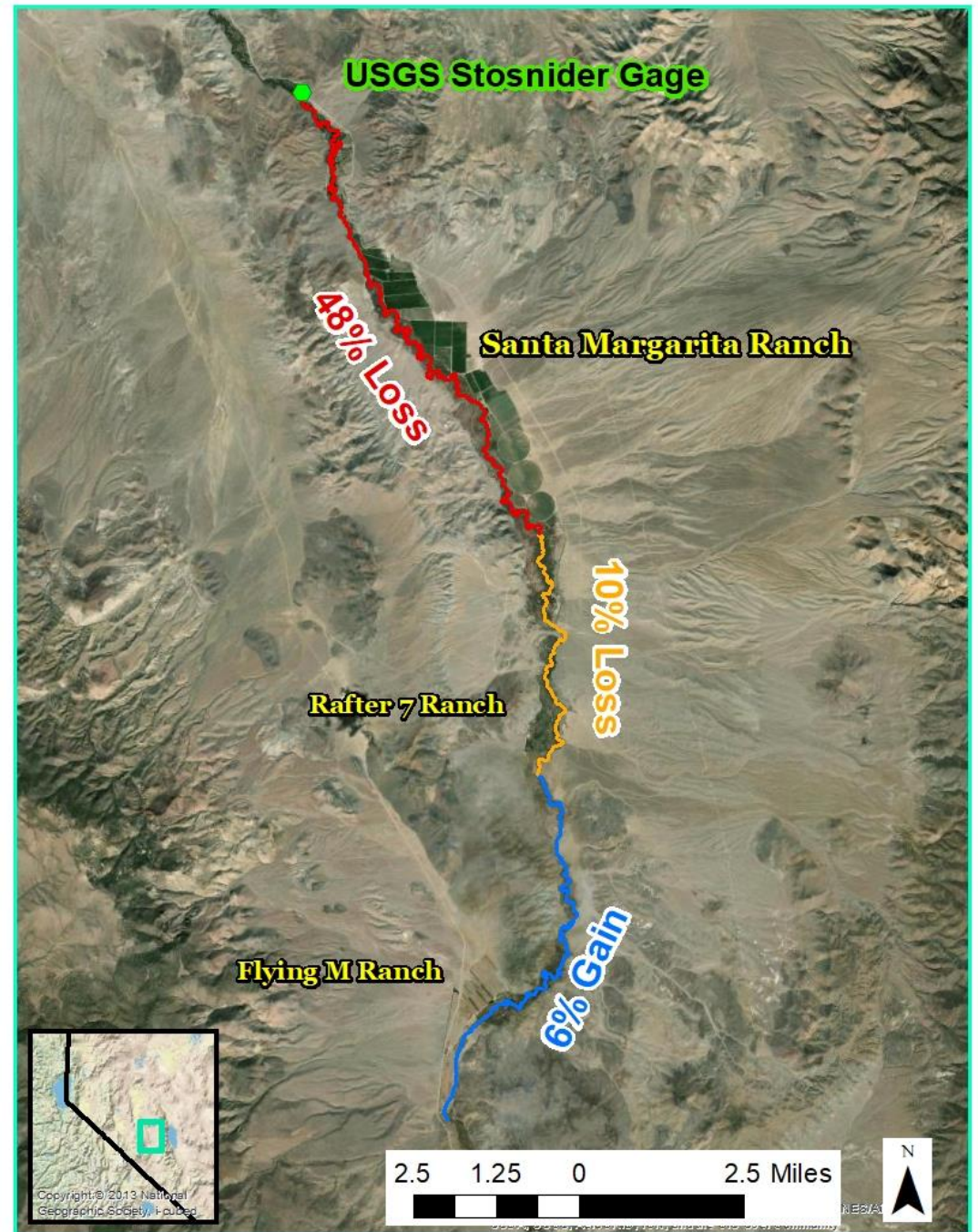
Reduced Flow
Deliveries



Increased
Pumping

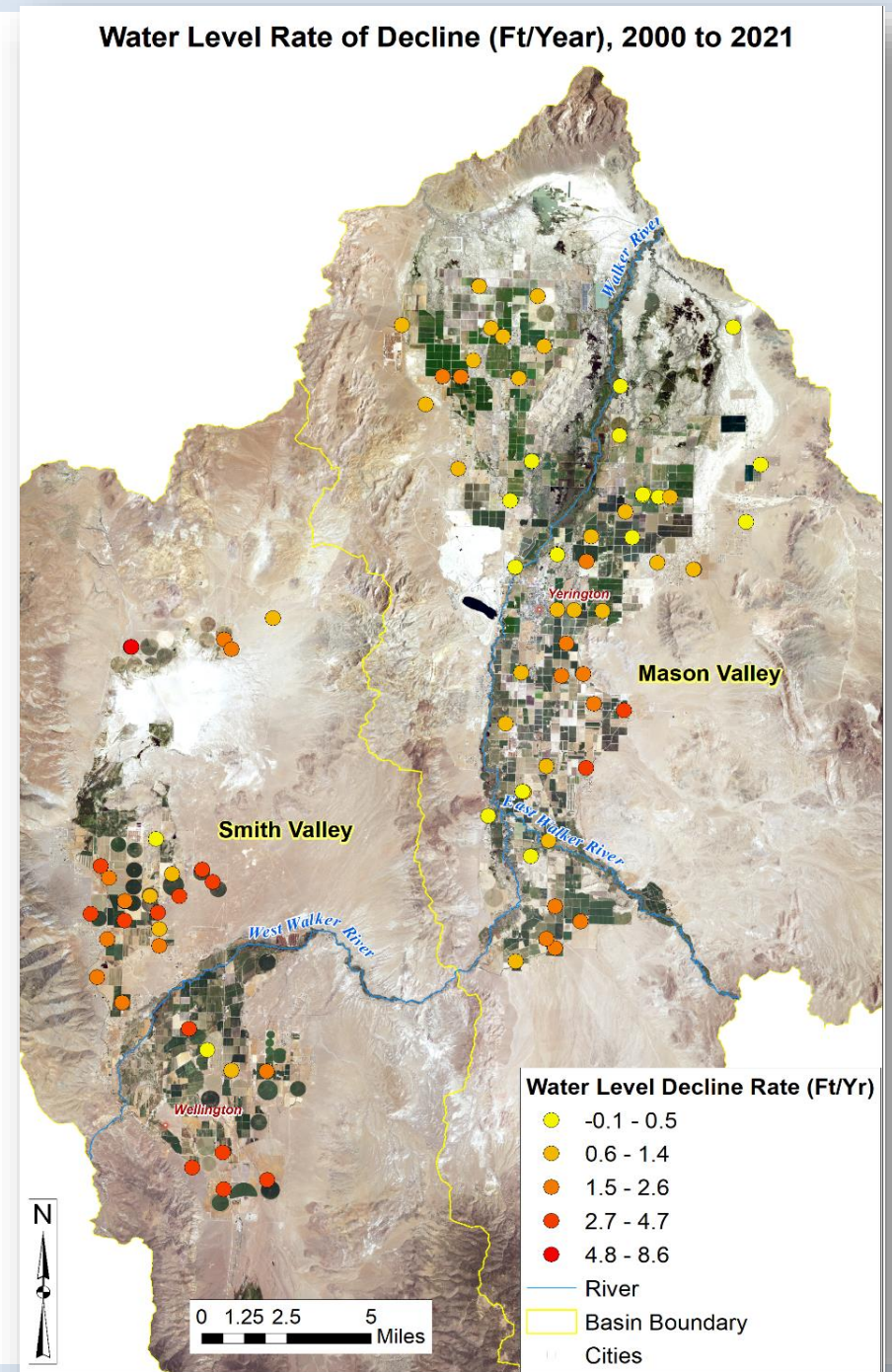


LOSSES ON THE EAST WALKER RIVER SUMMER, 2021

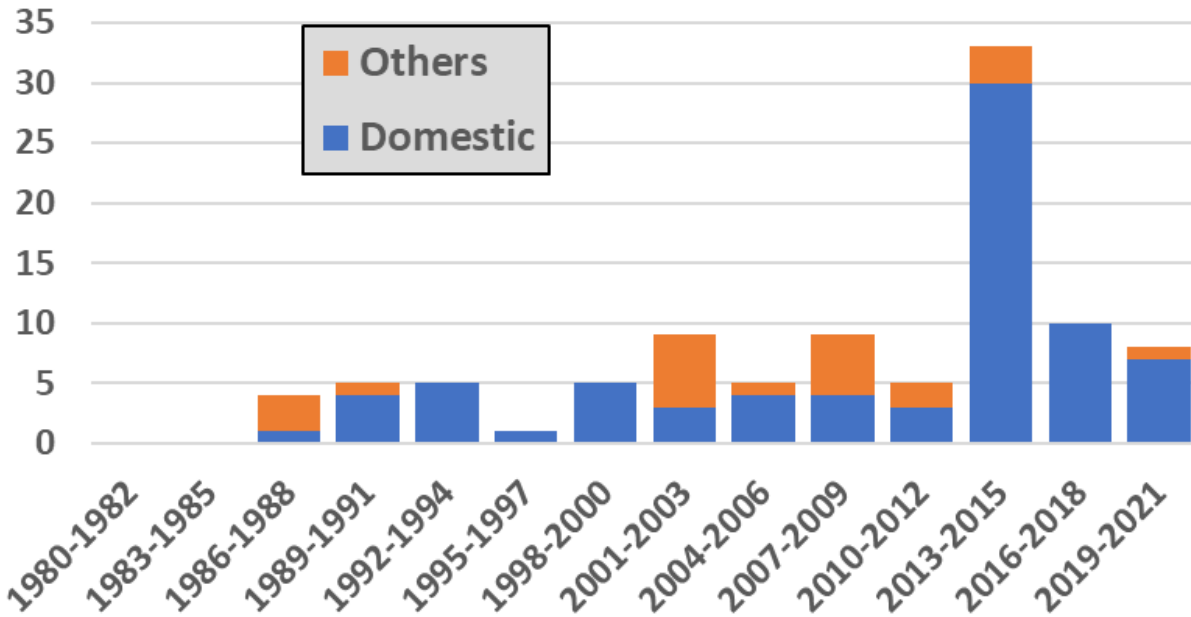


SMITH AND MASON VALLEYS GROUNDWATER AQUIFER

- Decades-long decline in water levels
- Smith Valley has greater declines than Mason Valley
 - More recharge from river & ditches in Mason Valley
- Compared with 2012-15, the 2020-22 drought has seen similar water levels in Mason, but lower water levels in Smith
- Declines in water levels are reducing the flow efficiency of the Walker River
 - Greater stream efficiency decline in Mason than Smith

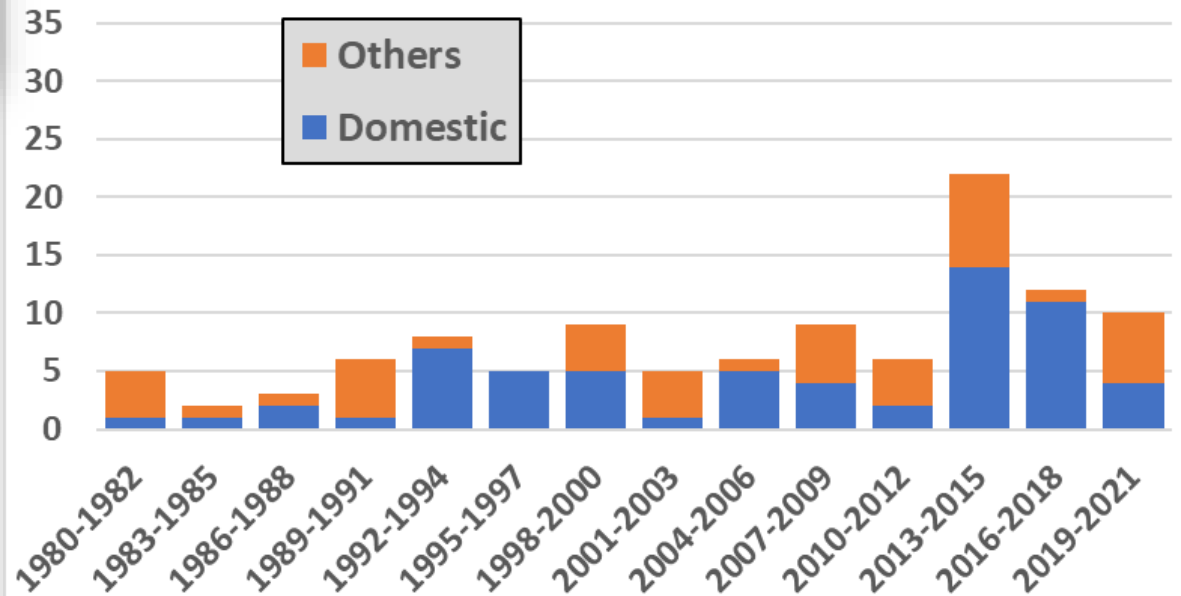


Smith Valley



WELL RE-DRILLS & DEEPENINGS

Mason Valley



Domestic wells are increasingly being impacted

WELL DRILLING ACTIVITIES

WHEN A LICENSED WELL DRILLER IS REQUIRED

Well Drillers are licensed by both the Nevada Division of Water Resources and the State Contractor's Board

“Well Drilling” Defined (NRS 534.0175, NAC 534.245)

Interpreted by the State Engineer to include, without limitation, the drilling, plugging, and rehabilitation of a well

“Rehabilitation” Defined (NAC 534.189)

A material change to the design or construction of an existing well



WELL "DRILLING" ACTIVITIES

WHEN A LICENSED WELL DRILLER IS NOT REQUIRED

"Reconditioning" (NAC 534.188)

The process of revitalizing an existing well by various methods that do not cause a material change in the design or construction of the well:

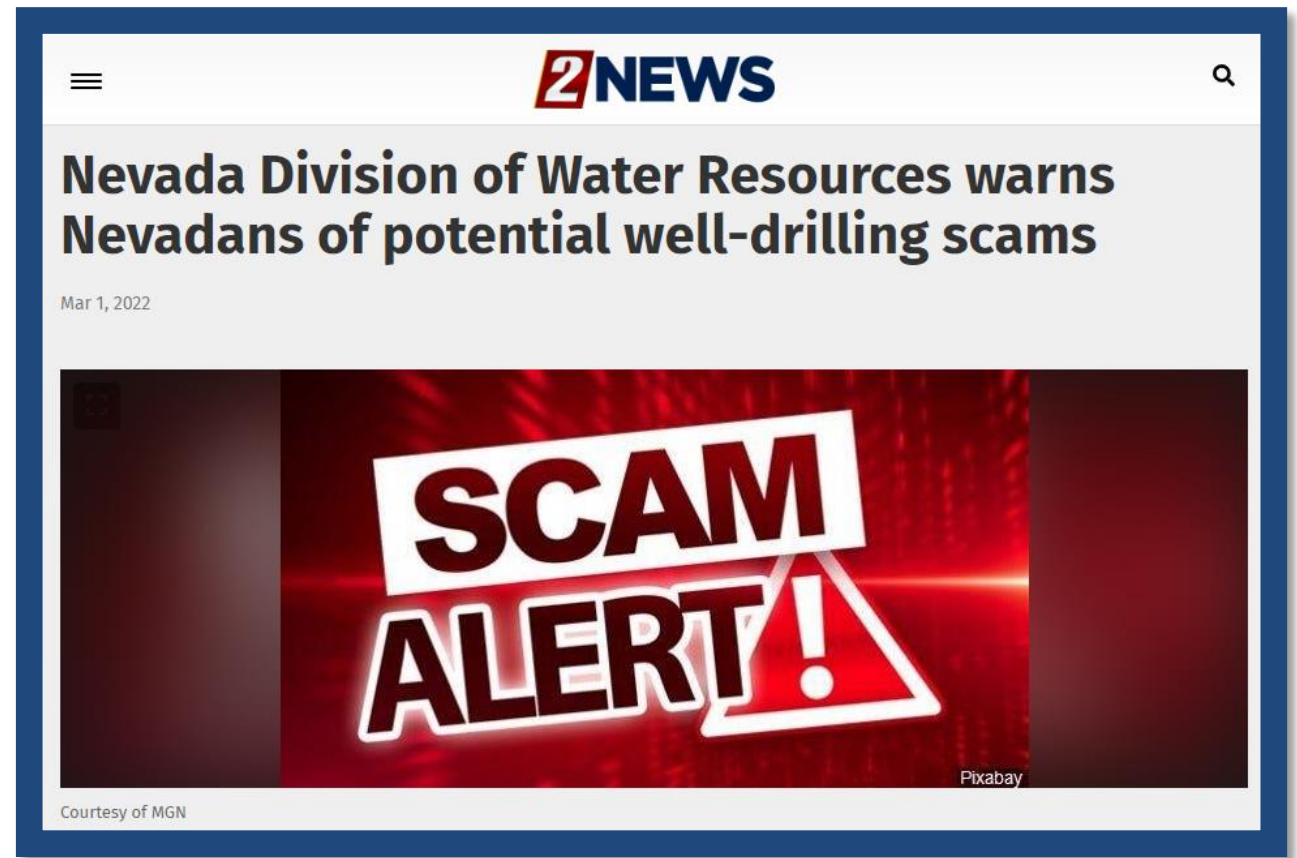
- Chemical treatment
- Brush cleaning
- Surging
- High-pressure jetting
- Changing/lowering pumps



The Division of Water Resources
does not regulate pumps

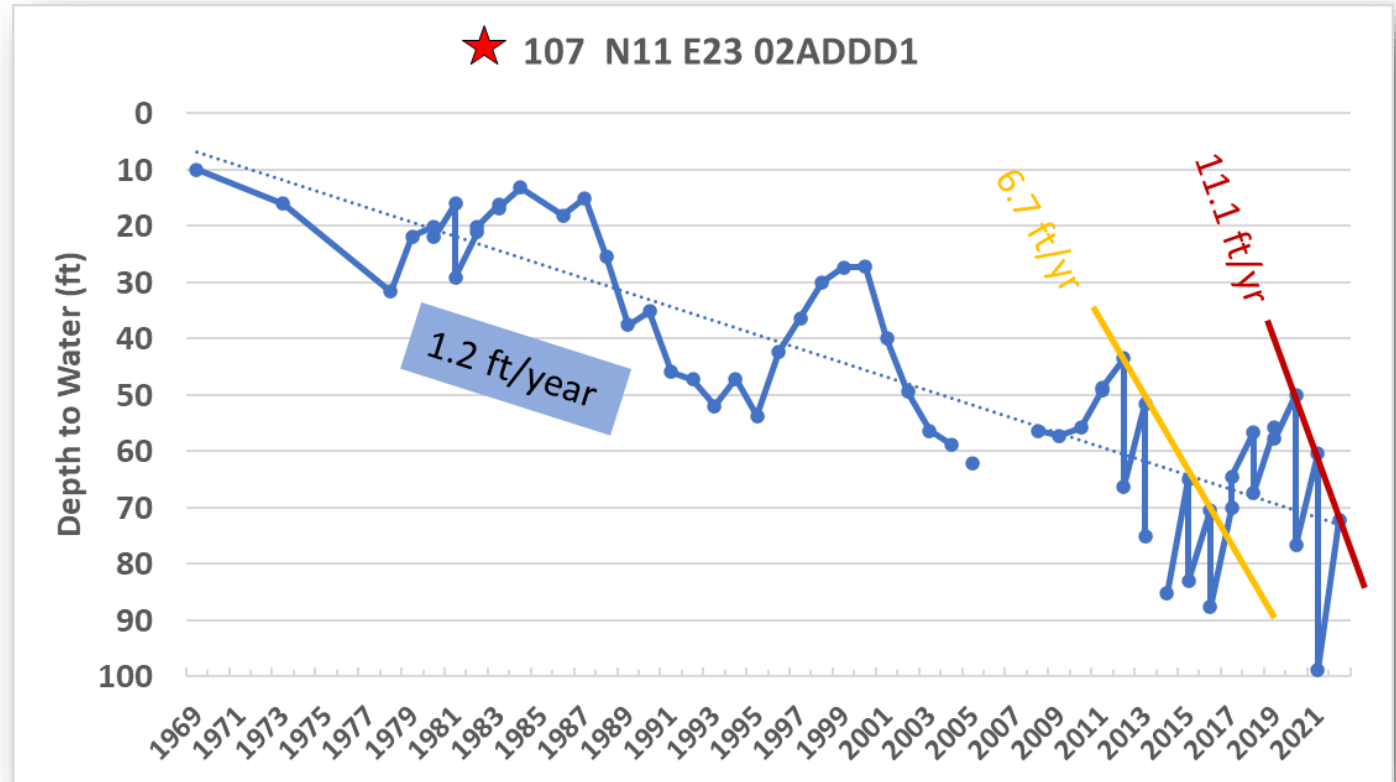
IF THE WORK REQUIRES A LICENSED WELL DRILLER

- Ensure your selected driller is license by NDWR
 - Comprehensive list available on our website
- Confirm the driller submits appropriate documentation
 - Notice of Intent to Drill
 - Well Driller's Report (well log)
- Contact the Well Drilling Regulations section for questions
- Watch out for scams



SUMMARY AND FUTURE OUTLOOK

- Smith and Mason Valley are highly susceptible to drought
- Long term sustained drawdown is a greater concern than short term drought cycles
- No curtailment this year, but may be necessary in future years
- 2015-2016 as an example
- Curtailment is avoidable
 - Community planning
 - Voluntary reduction in pumping
 - Conservation
- Continue public outreach



2022 ENFORCEMENT

- Over-pumping
- Supplemental usage
- Meter/Reporting Order in effect
- Increased field checks –
 - Meter verification, water levels
- Compliance is the goal, but fines and penalties may be assessed
 - NRS 534.193 & NRS 534.320



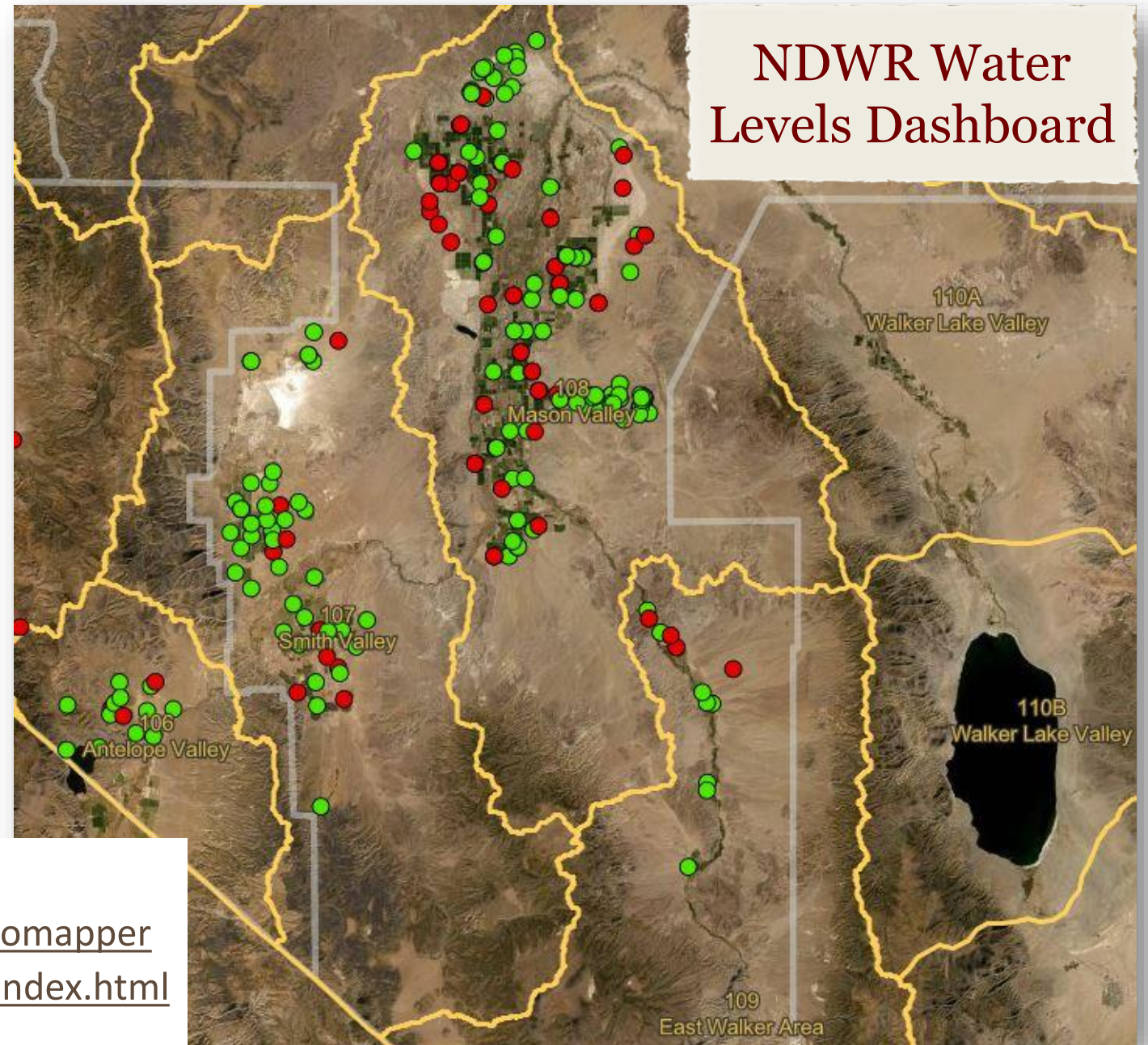
ONLINE RESOURCES

Water.nv.gov >> Mapping & Data:

- Water Rights Webmap
- Hydrology Webmap
- Meters Database
- Water Level Database
- Well Log Database
- Pumpage Inventories
- Water Levels Dashboard

Nevada.usgs.gov >>

- <https://webapps.usgs.gov/walkerbasinhydromapper>
- <https://maps.waterdata.usgs.gov/mapper/index.html>



Questions?



Contact

Division of Water Resources

901 S. Stewart Street #2002

Phone: 775-684-2800

water.nv.gov