



NEVADA DIVISION OF  
**WATER RESOURCES**



Nevada Department of  
**CONSERVATION &  
NATURAL RESOURCES**

# Smith and Mason Valleys

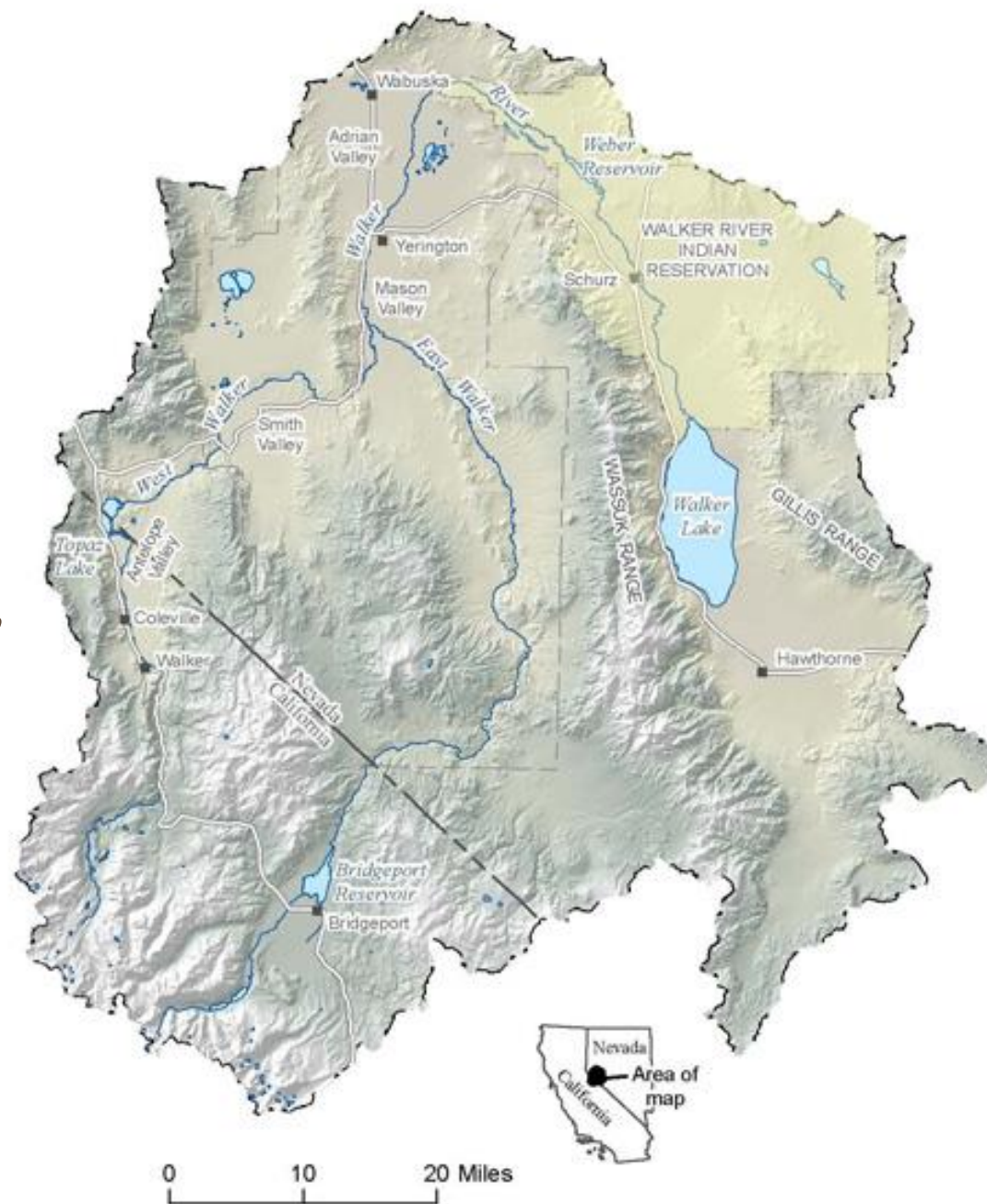
## Water Rights & Groundwater Conditions

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

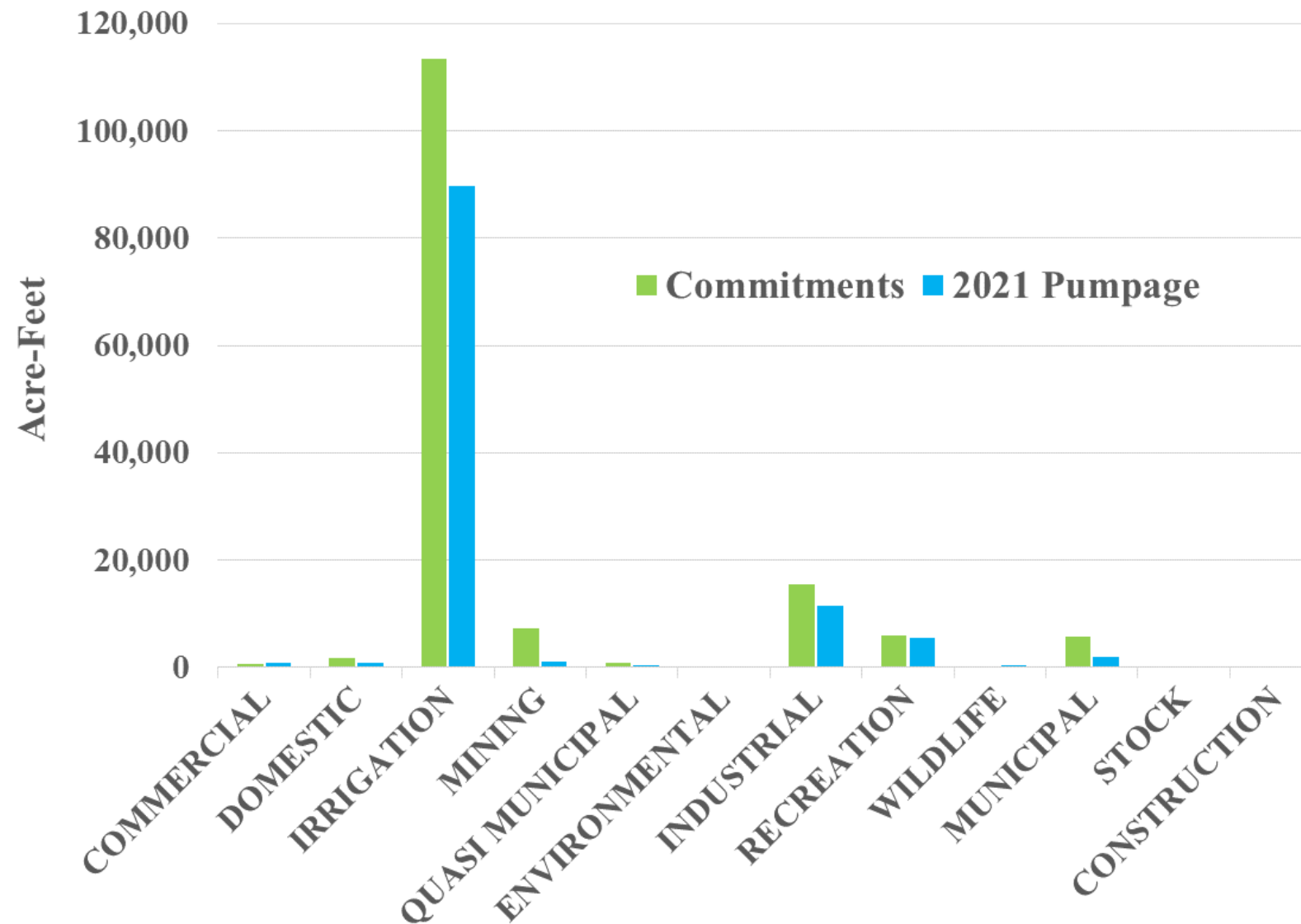


# GROUNDWATER IRRIGATION RIGHTS

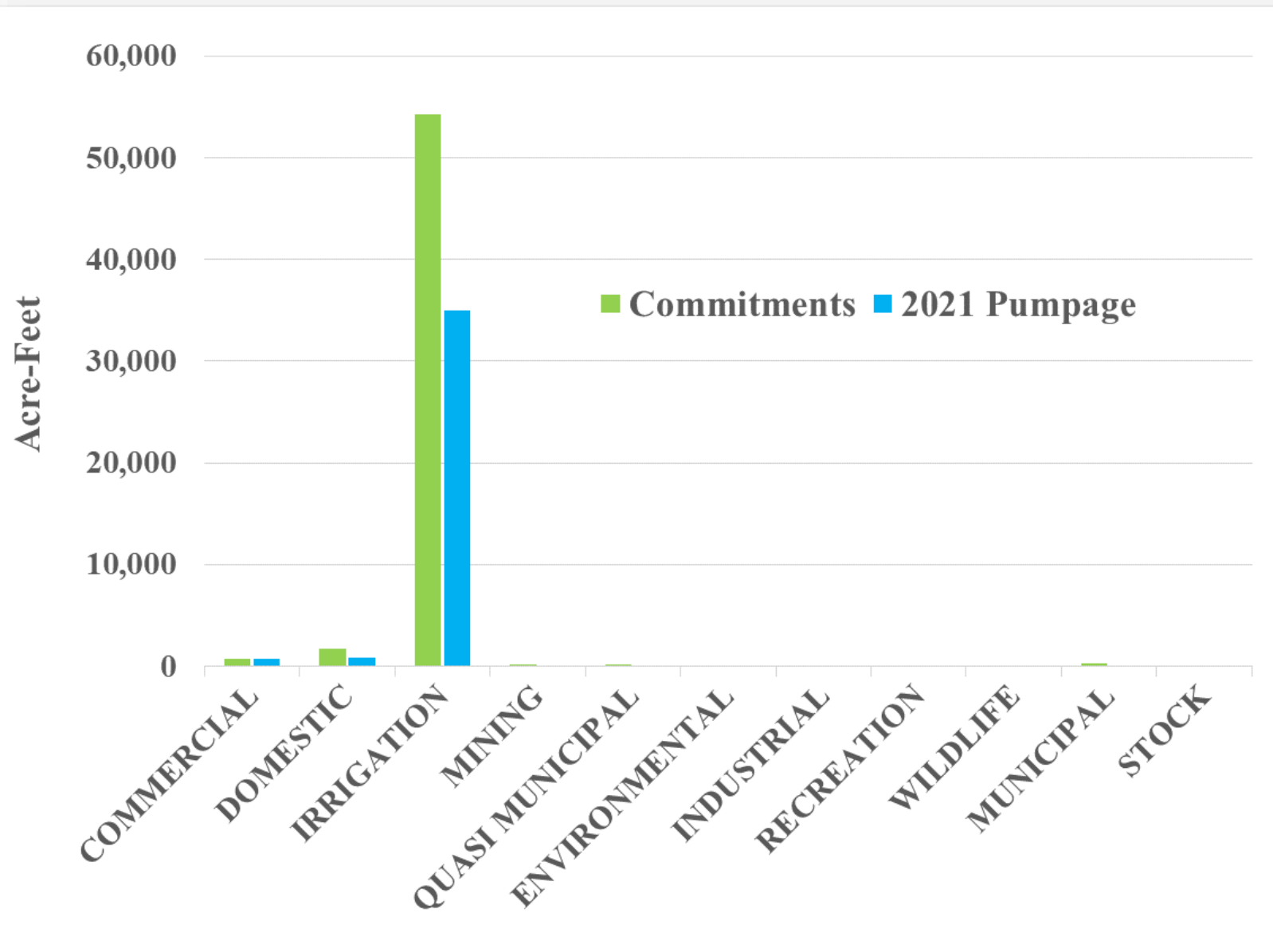
- Primary groundwater (GW) rights: stand-alone
- Supplemental GW rights: back-up to surface water (SW) rights – Decree or Storage rights
- Limited to 4.0 acre-feet per acre from all sources – cumulative primary GW, supplemental GW, and SW



# MASON VALLEY GROUNDWATER RIGHTS

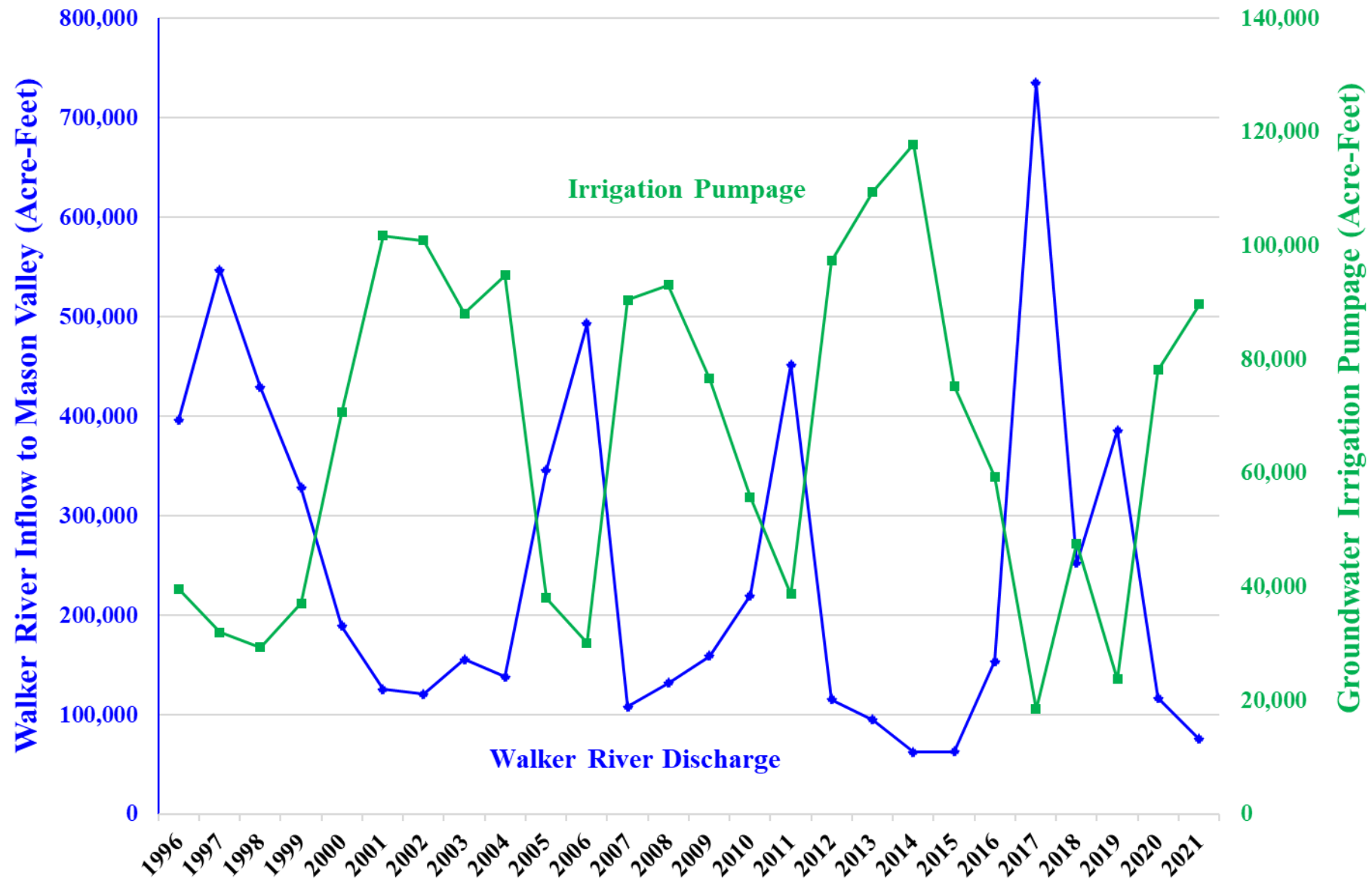


# SMITH VALLEY GROUNDWATER RIGHTS





# 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](http://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  Today

Meter Reading  x 1

Calculated Reading  Gallons

Latest Annual Usage 906.5 2020

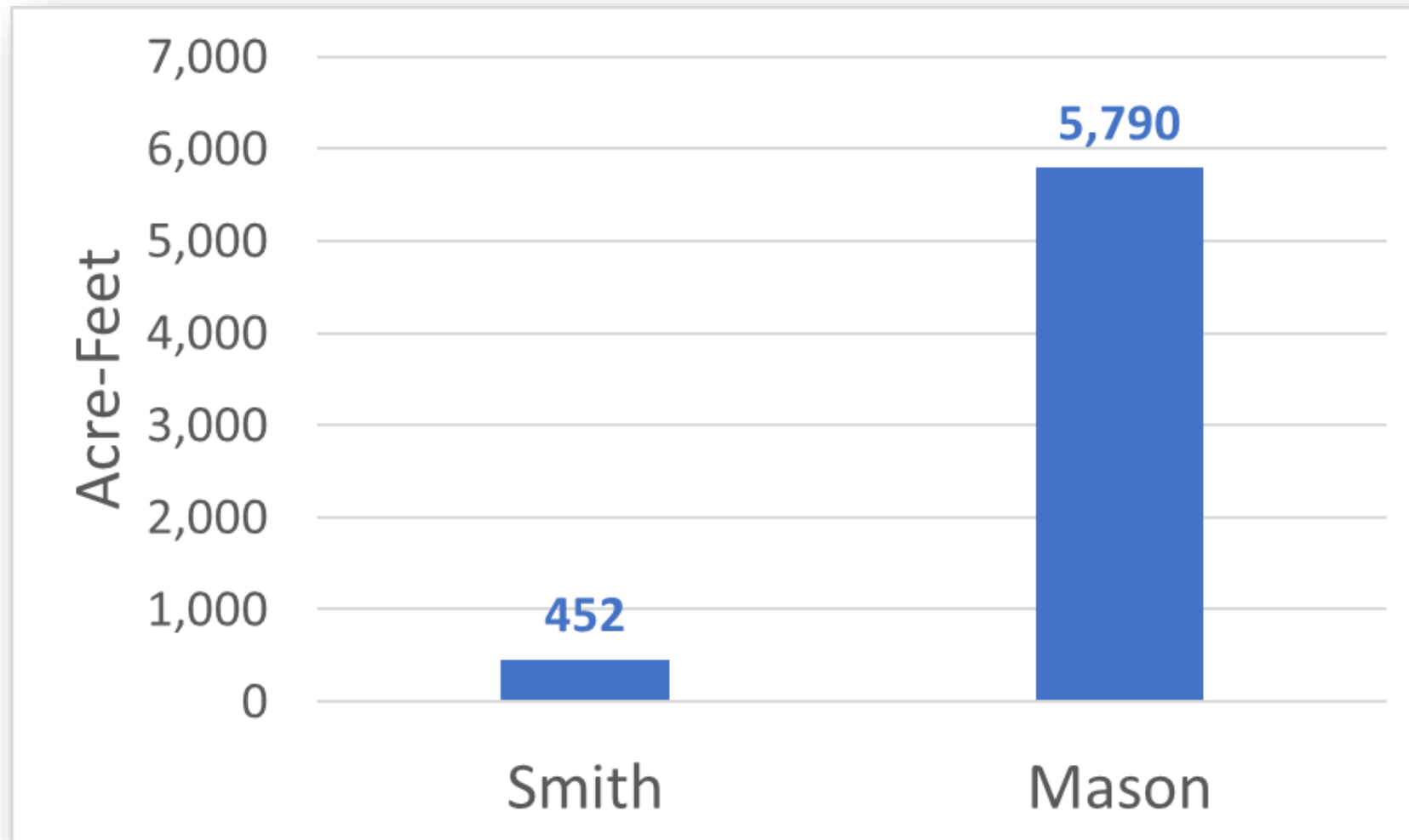
Remarks

Broken Meter / Meter Replaced ☐

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

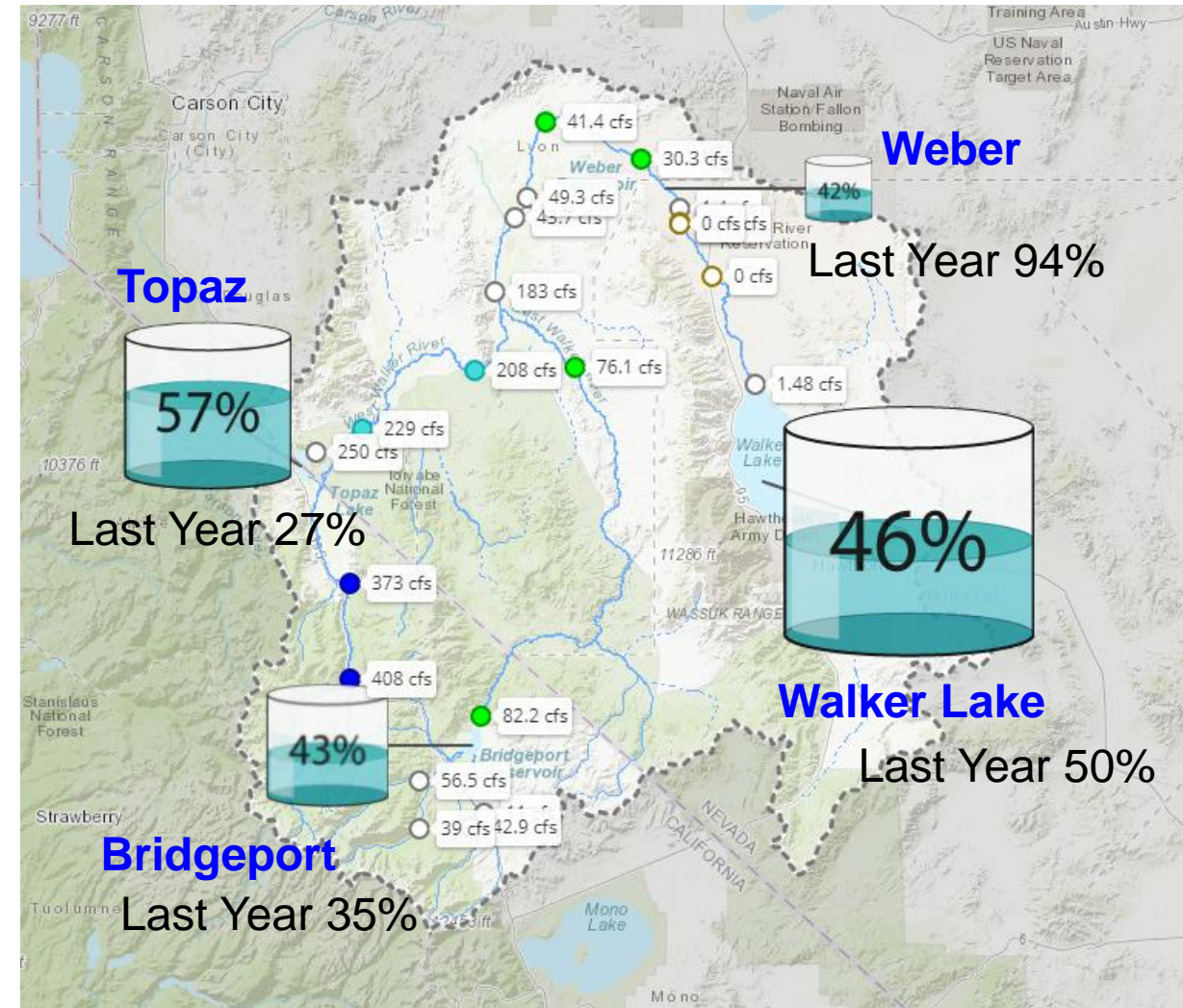
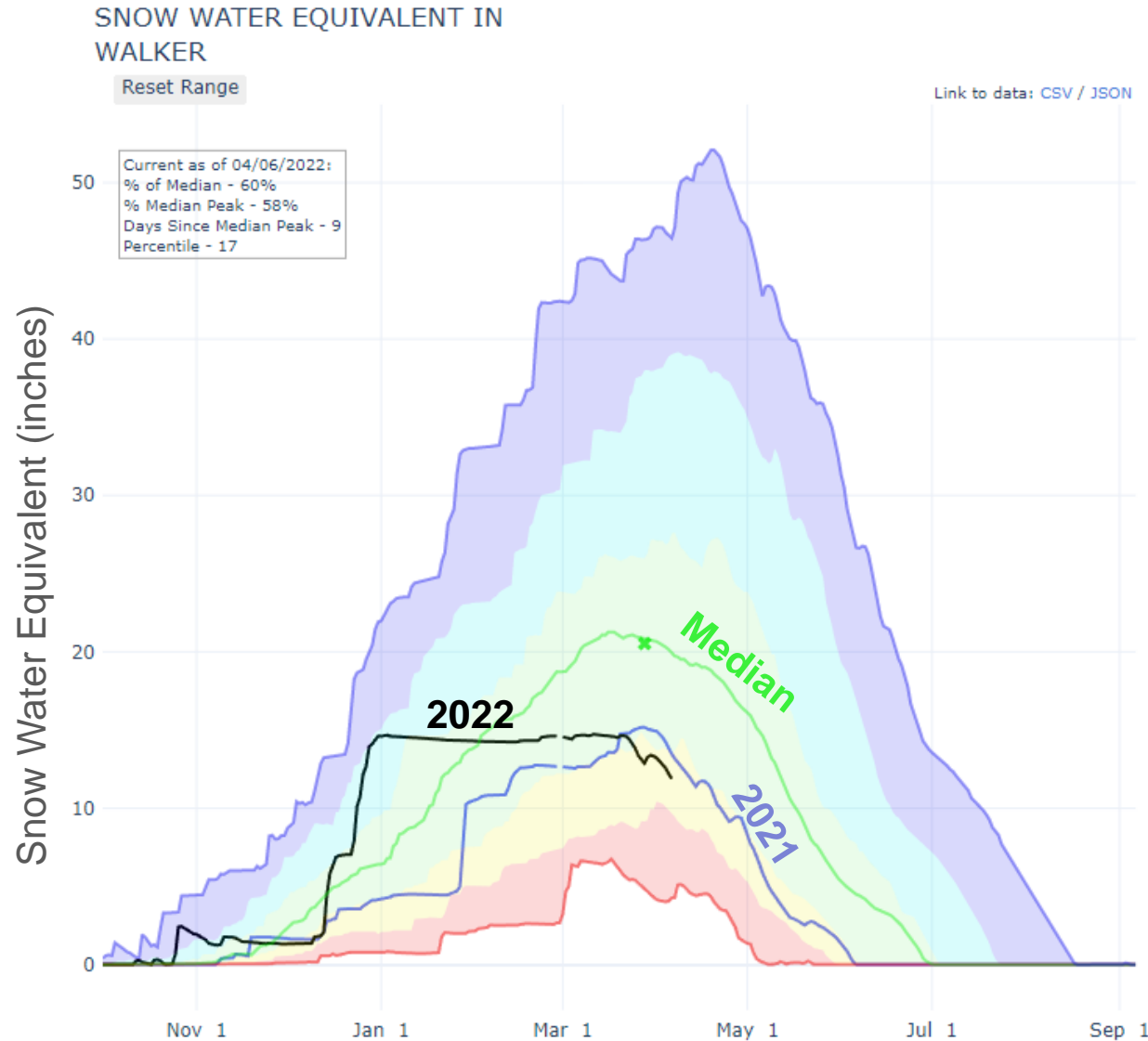
Submit

## OVER-PUMPING OF PERMITTED DUTIES, 2021



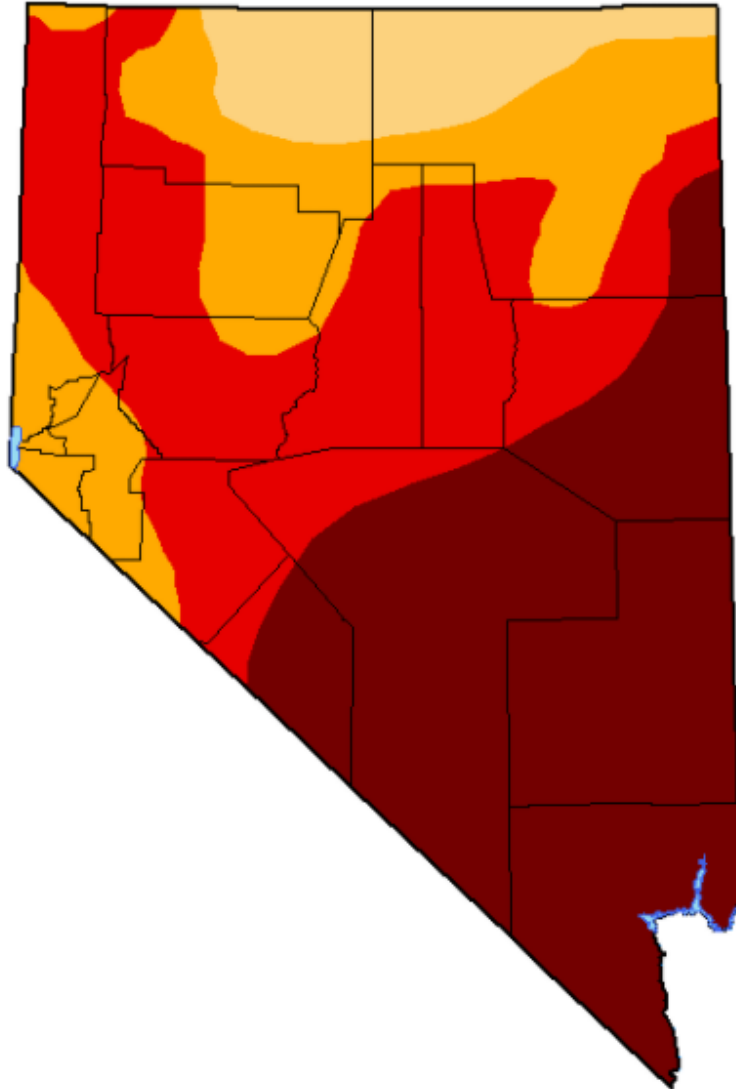


## CURRENT CONDITIONS (AS OF APRIL 5, 2022)



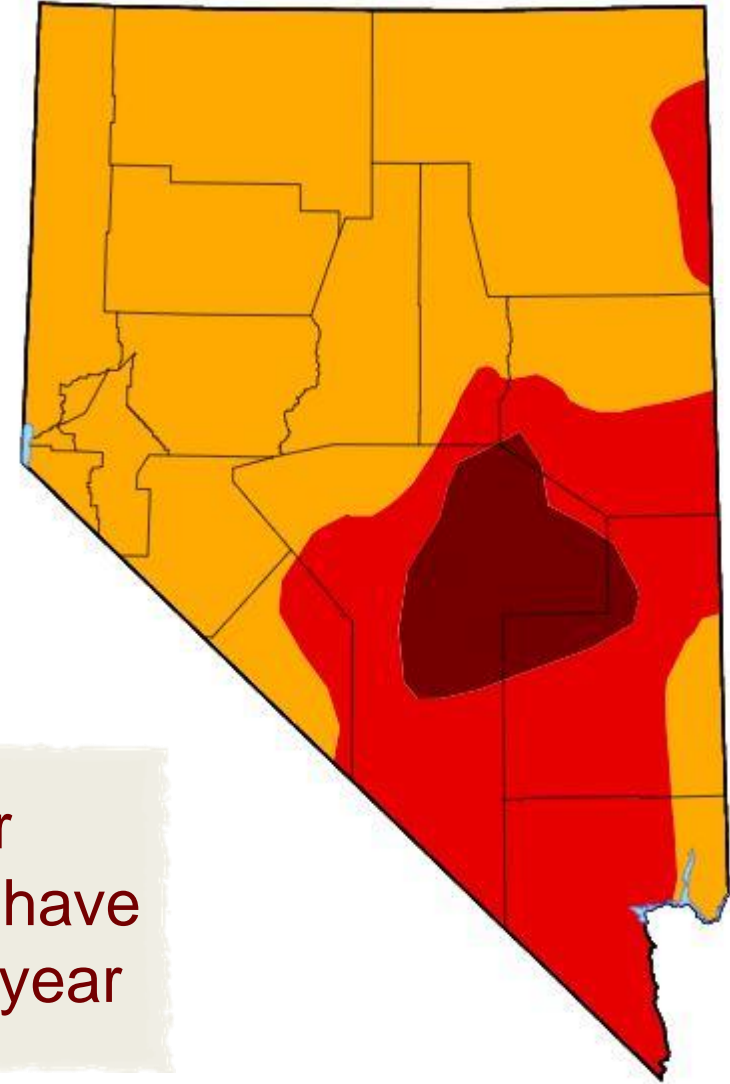
## DROUGHT STATUS

Last Year



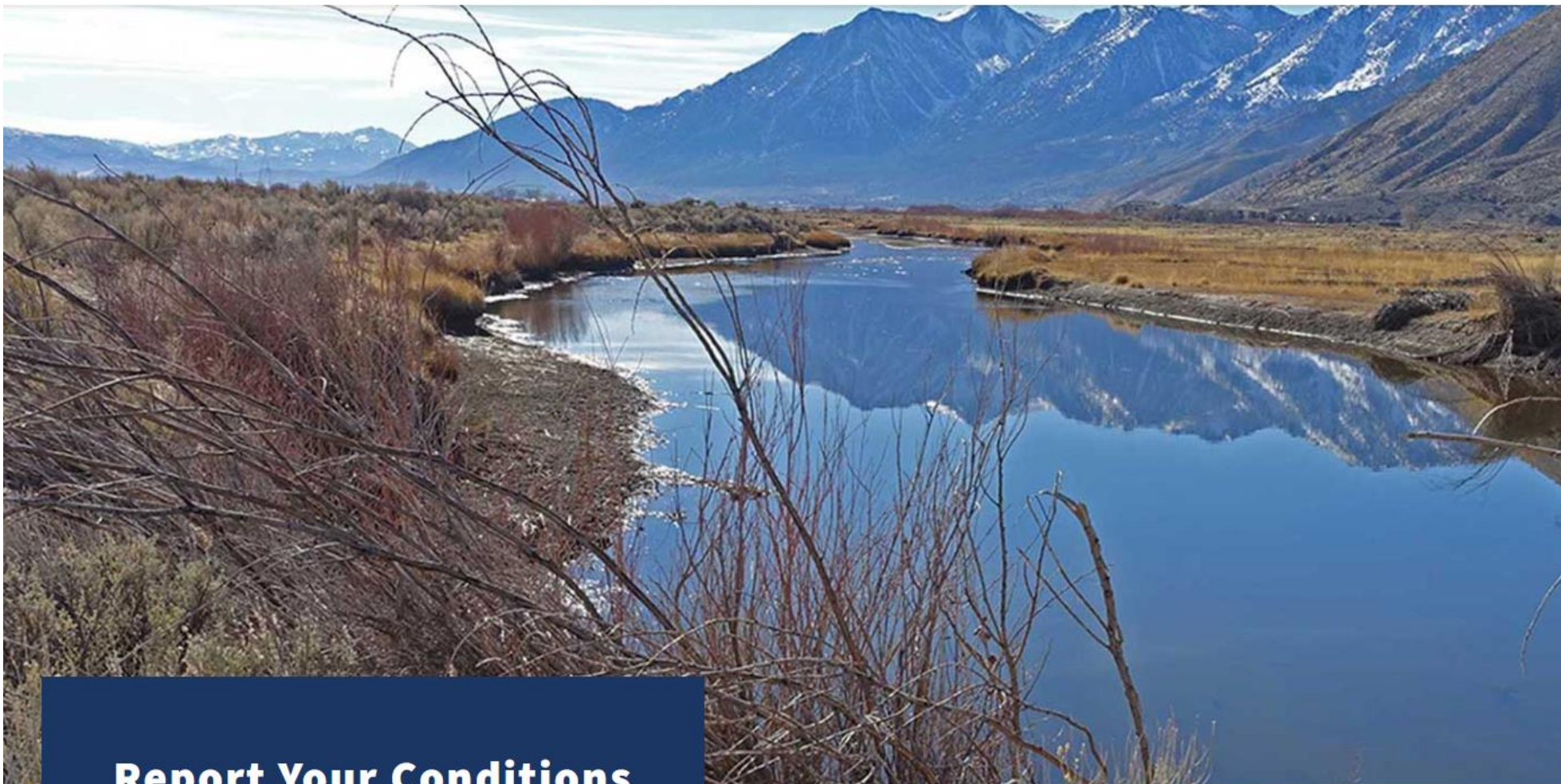
Moderate  
Severe  
Extreme  
Exceptional

Last Week



The Drought Monitor  
indicates conditions have  
improved some this year





**Report Your Conditions**



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



# GROUNDWATER MONITORING NETWORK

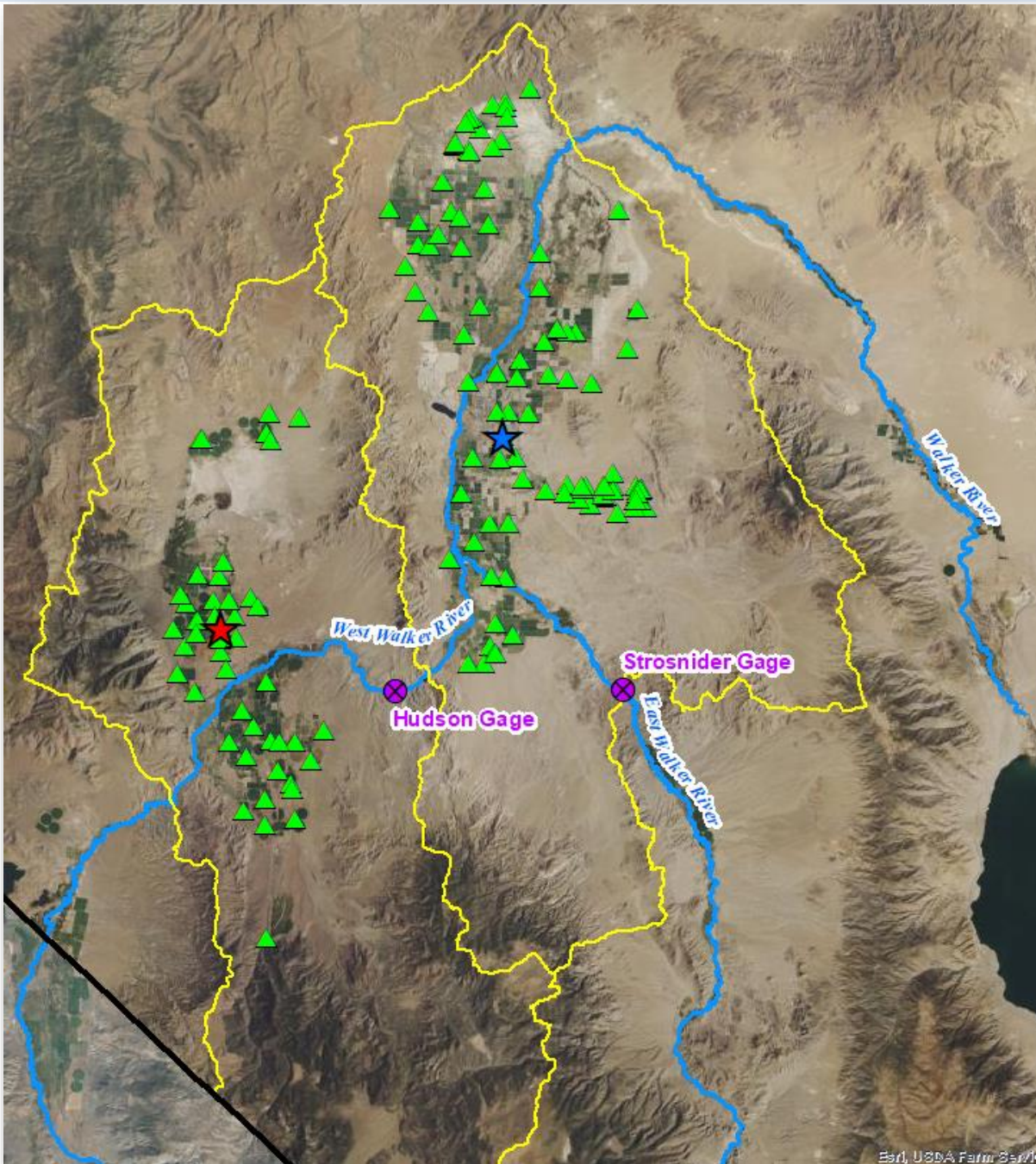
## Mason Valley

- 106 monitoring sites

## Smith Valley

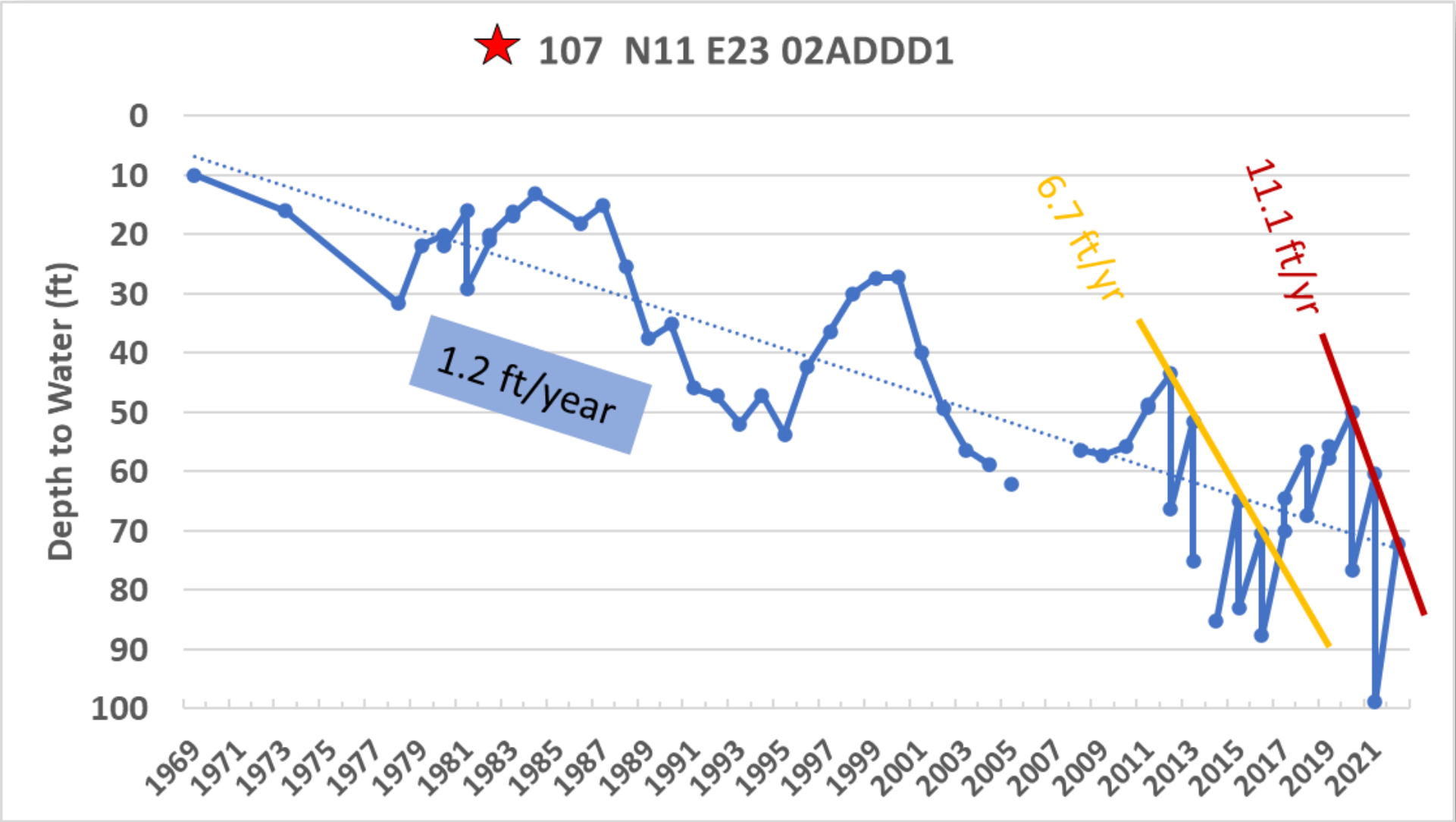
- 37 monitoring sites

Available at: [water.nv.gov](http://water.nv.gov)



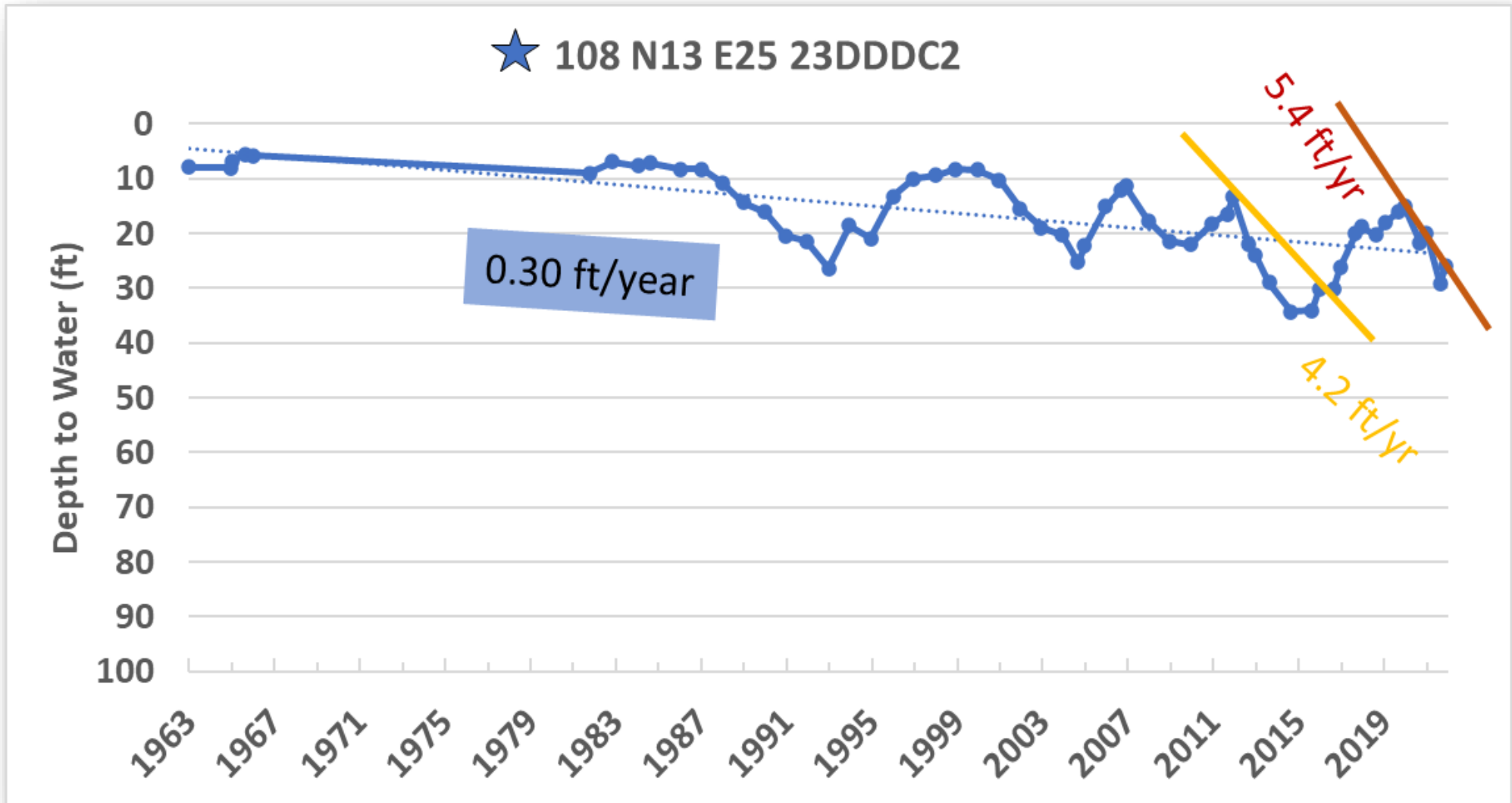
# SMITH VALLEY WATER LEVELS

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





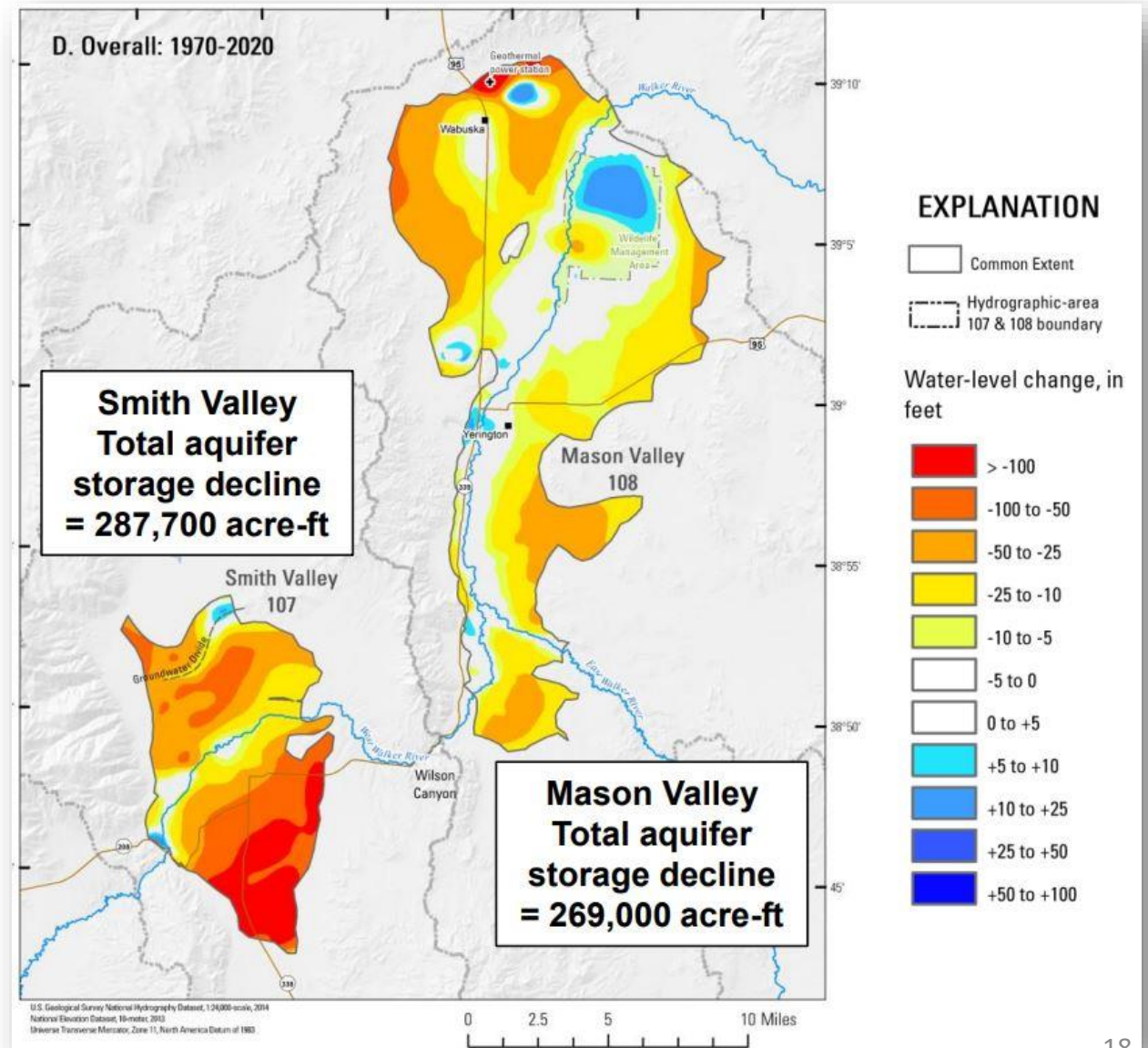
# LONG-TERM WATER LEVEL DECLINES (1970 – 2020)

From Davies and Naranjo (USGS)  
2022 NWRA Presentation:

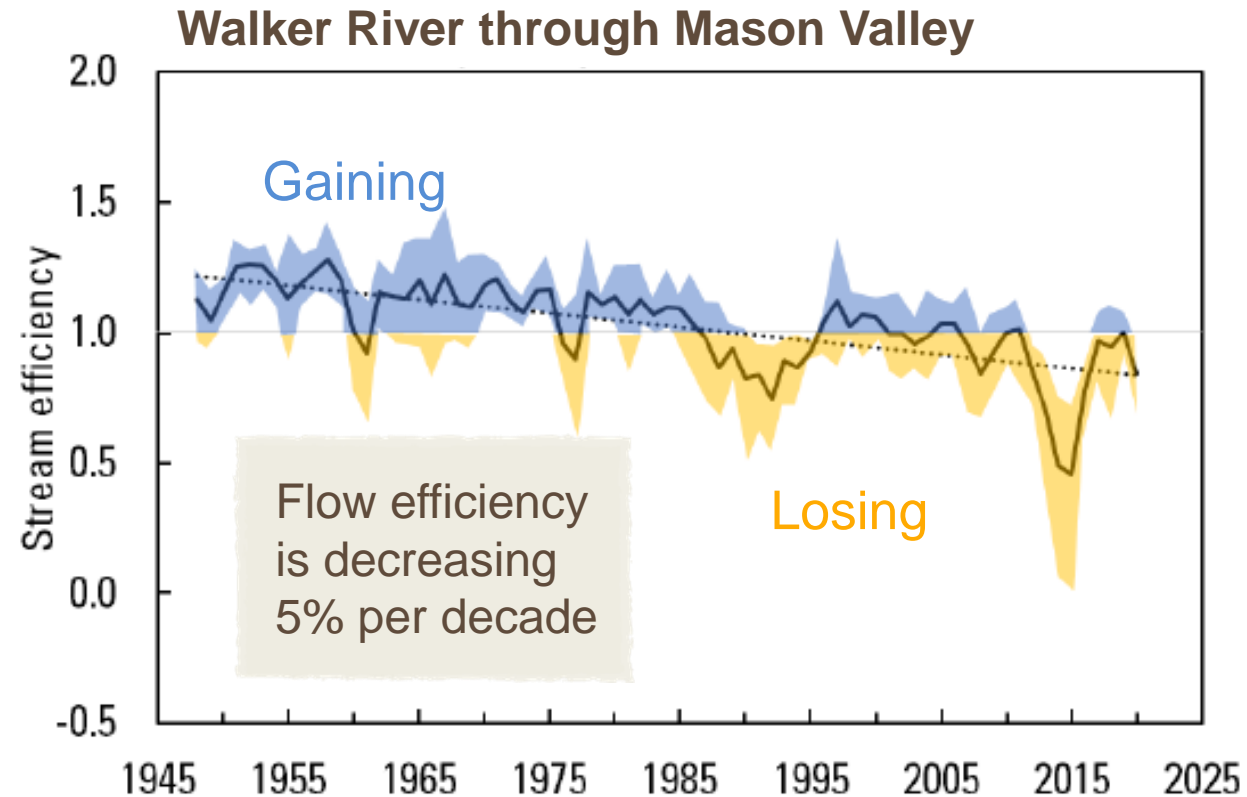
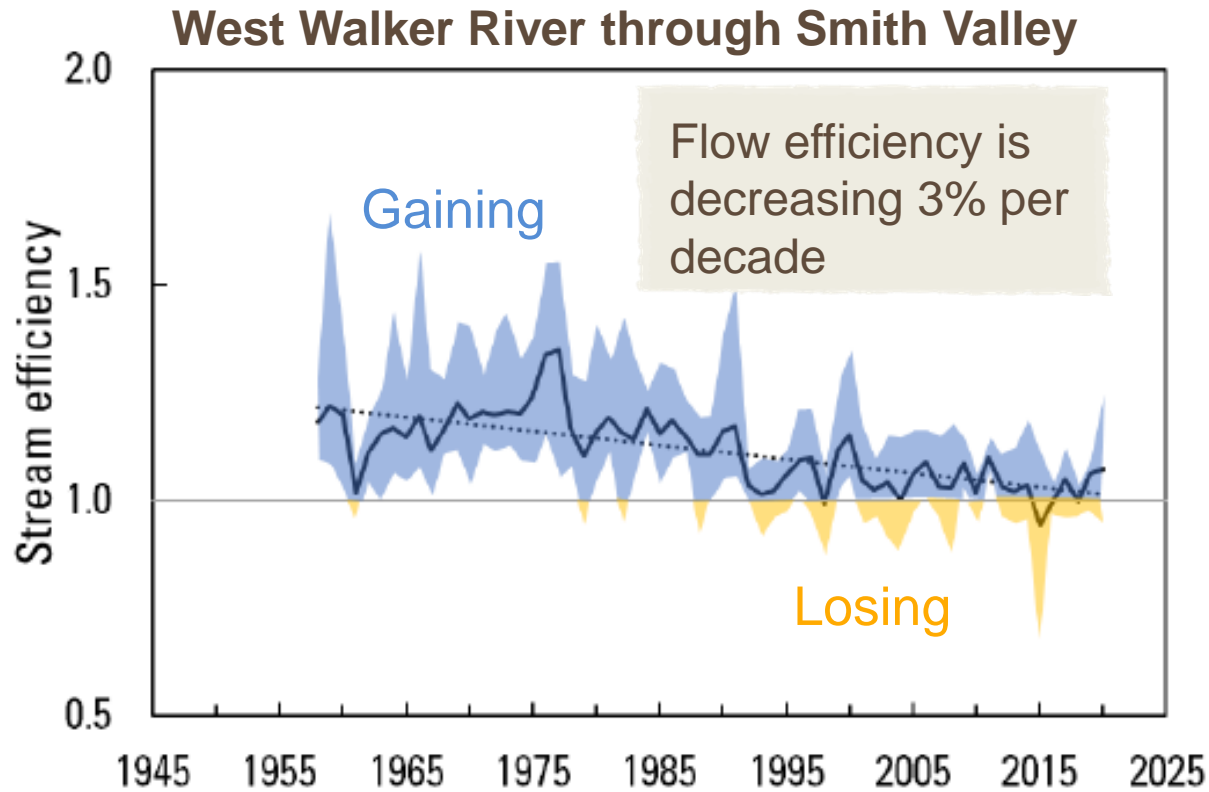
*'Estimated effects of pumping on  
groundwater storage And Walker River  
stream efficiencies in Smith Valley and  
Mason Valley, West-Central Nevada'*

Total volume removed from  
groundwater reservoir:

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

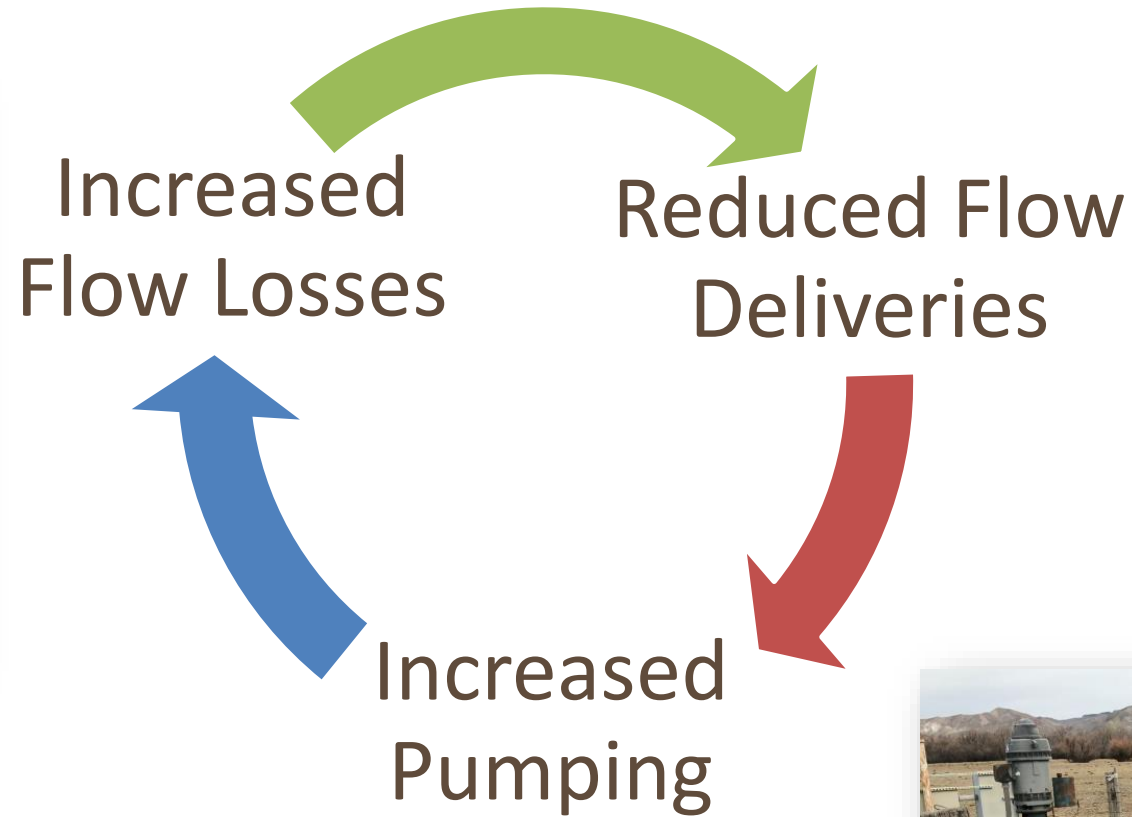


# LONG TERM EFFECT OF PUMPING ON WALKER RIVER FLOW EFFICIENCY DURING IRRIGATION SEASON



Source: Davies and Naranjo, 2022 NWRA presentation

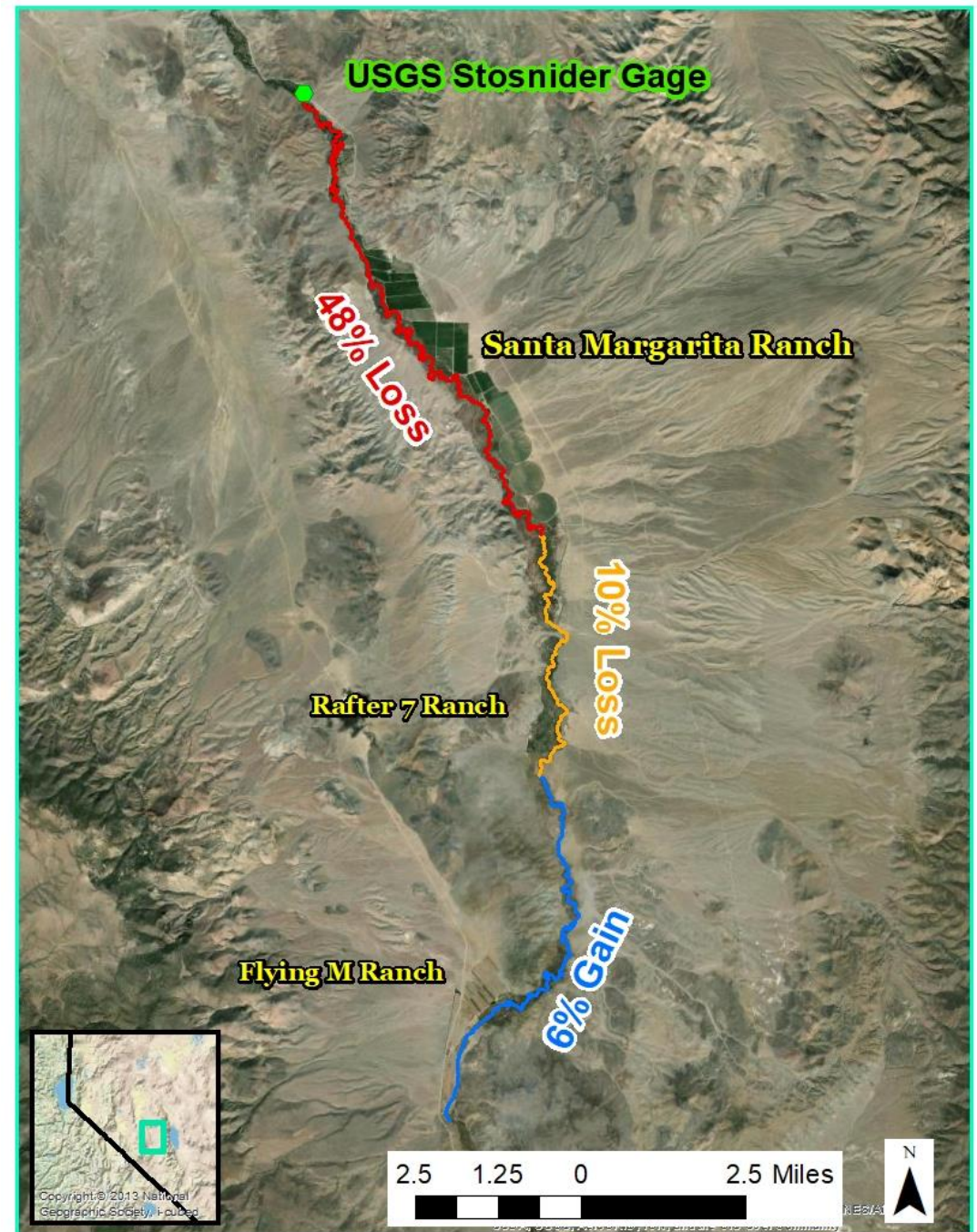
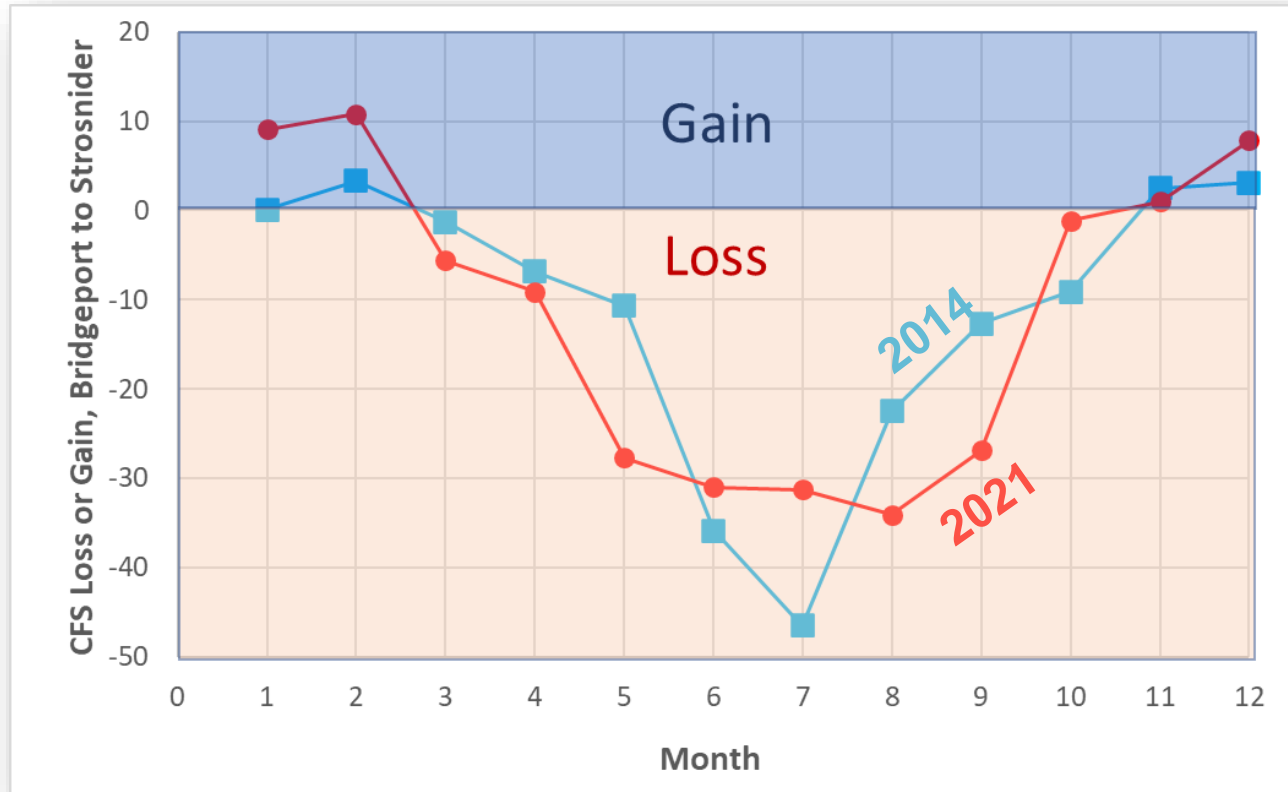
# FEEDBACK CYCLE OF EXCESSIVE PUMPING AND RIVER FLOW EFFICIENCY





# LOSSES ON THE EAST WALKER RIVER

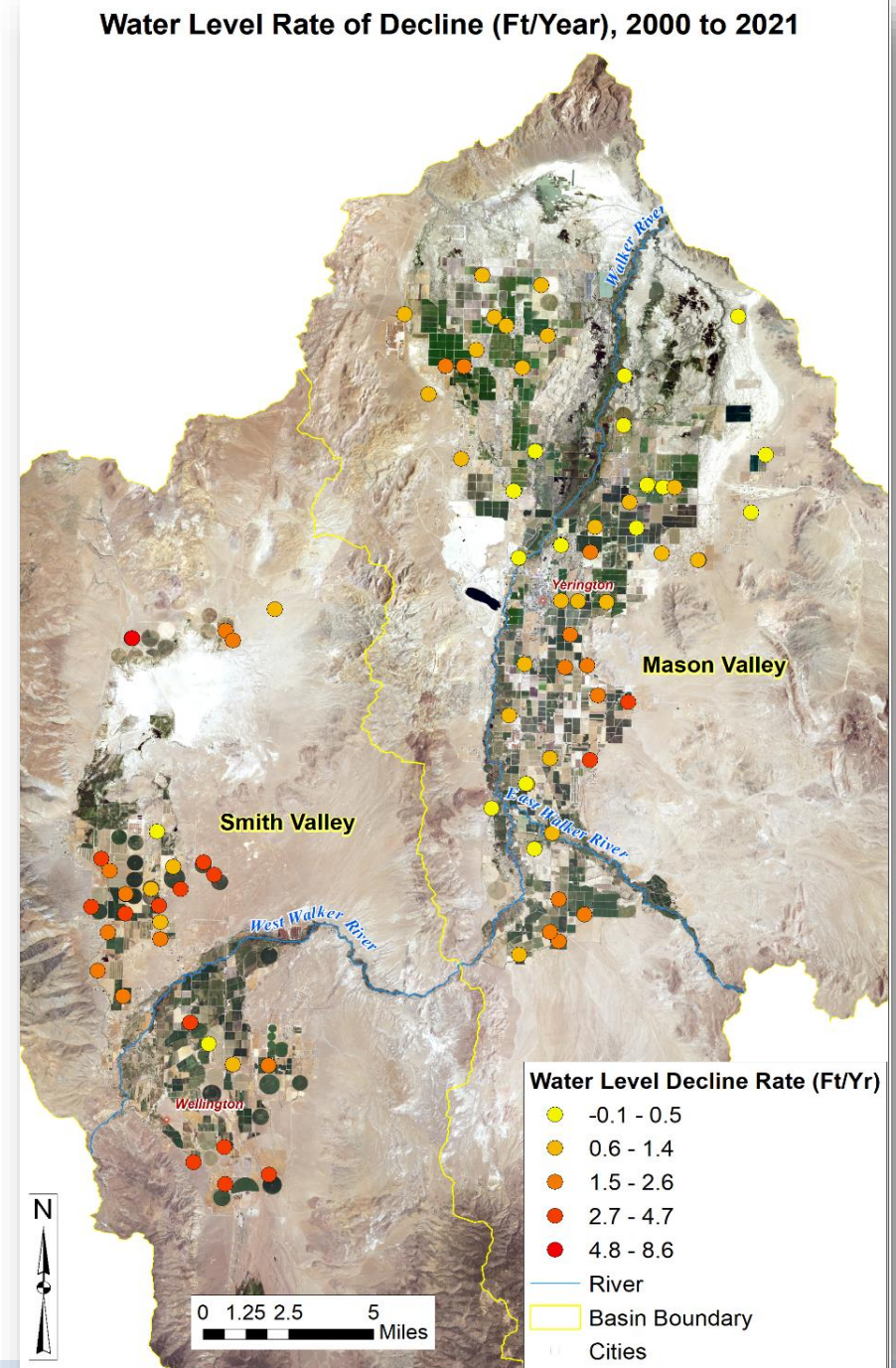
## SUMMER, 2021



# SMITH AND MASON VALLEYS

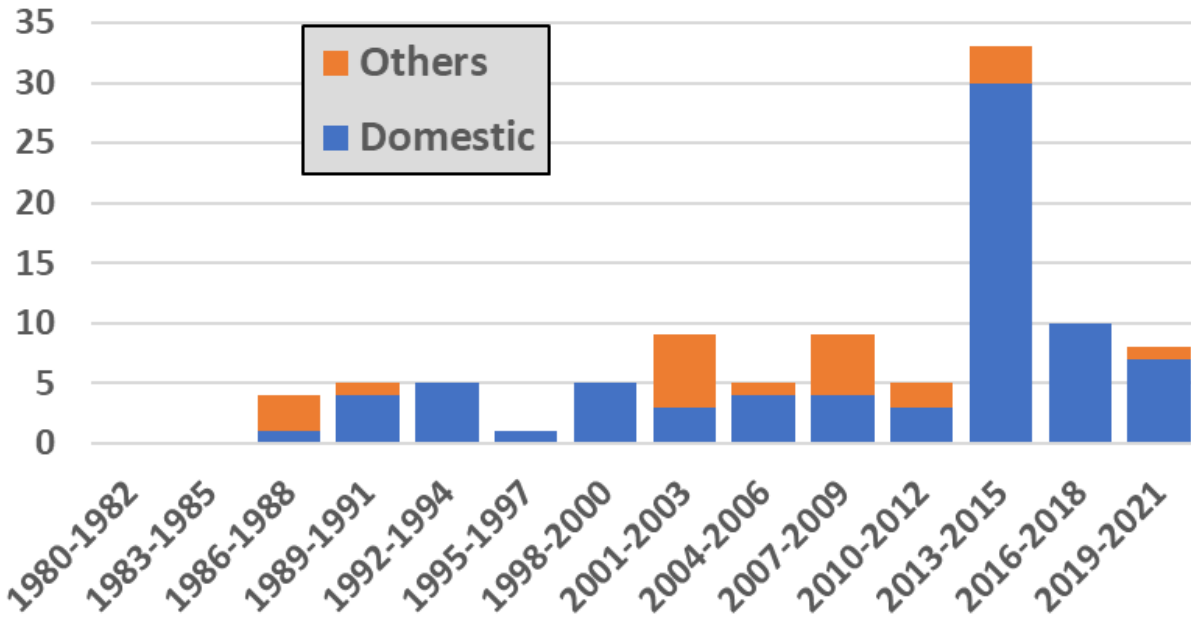
## GROUNDWATER AQUIFER

- 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





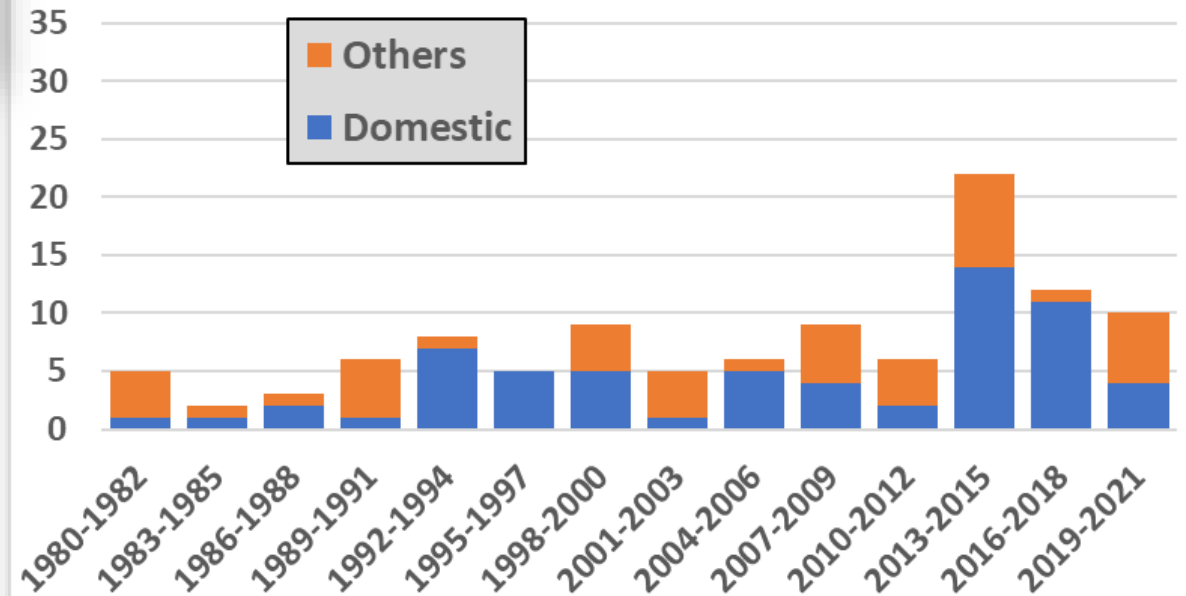
## Smith Valley



Domestic wells are increasingly being impacted

## WELL RE-DRILLS & DEEPENINGS

### Mason Valley





# 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:

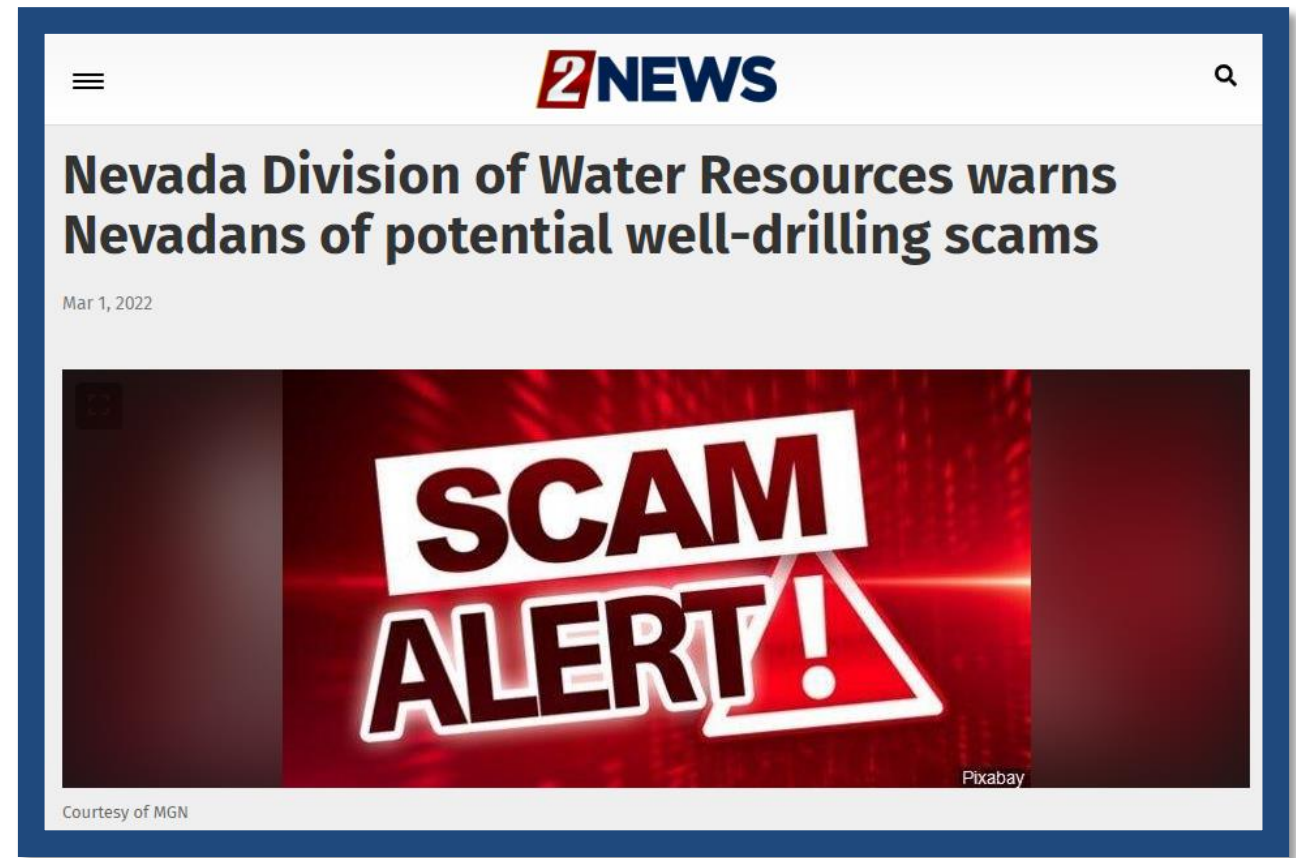
- Chemical treatment
- Brush cleaning
- Surging
- High-pressure jetting
- Changing/lowering pumps



The Division of Water Resources  
does not regulate pumps

## IF THE WORK REQUIRES A LICENSED WELL DRILLER

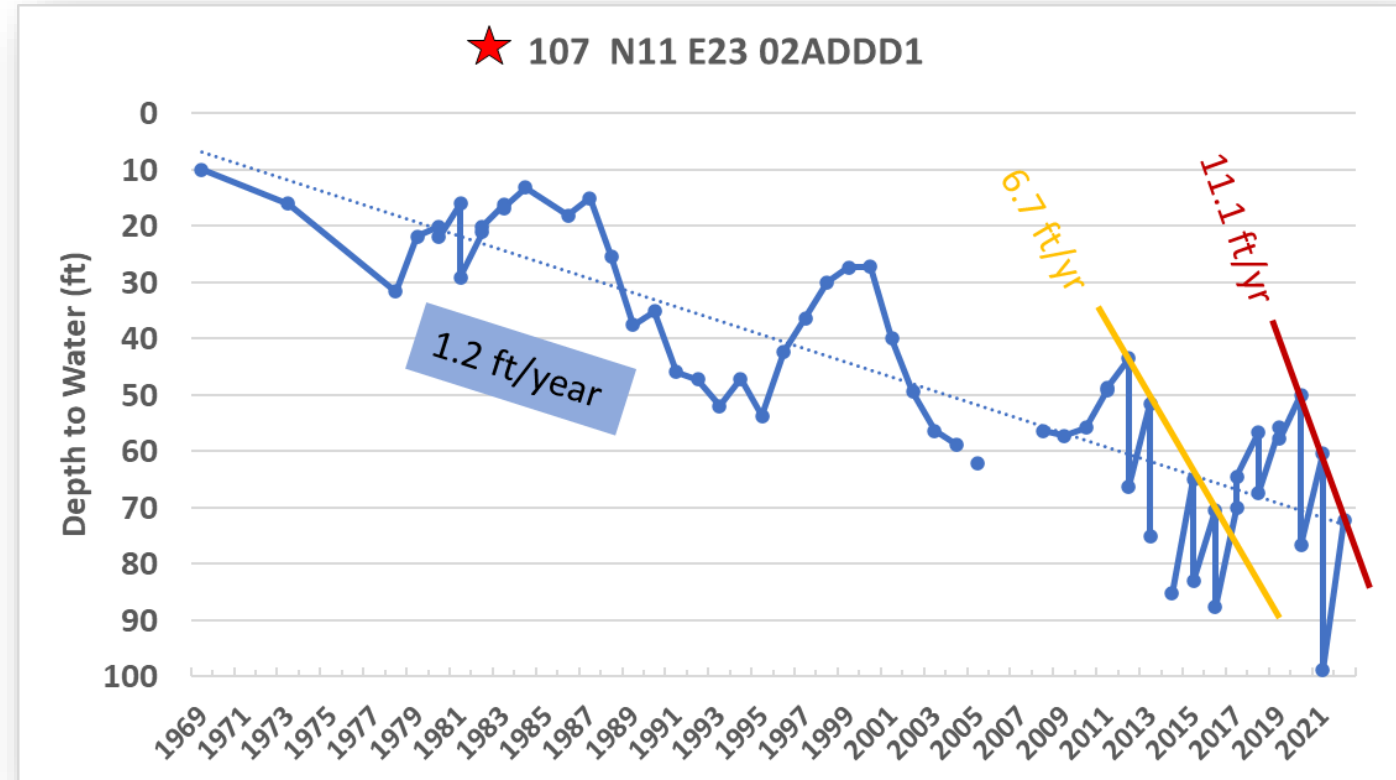
- Ensure your selected driller is license by NDWR
  - Comprehensive list available on our website
- Confirm the driller submits appropriate documentation
  - Notice of Intent to Drill
  - Well Driller's Report (well log)
- Contact the Well Drilling Regulations section for questions
- Watch out for scams





## 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





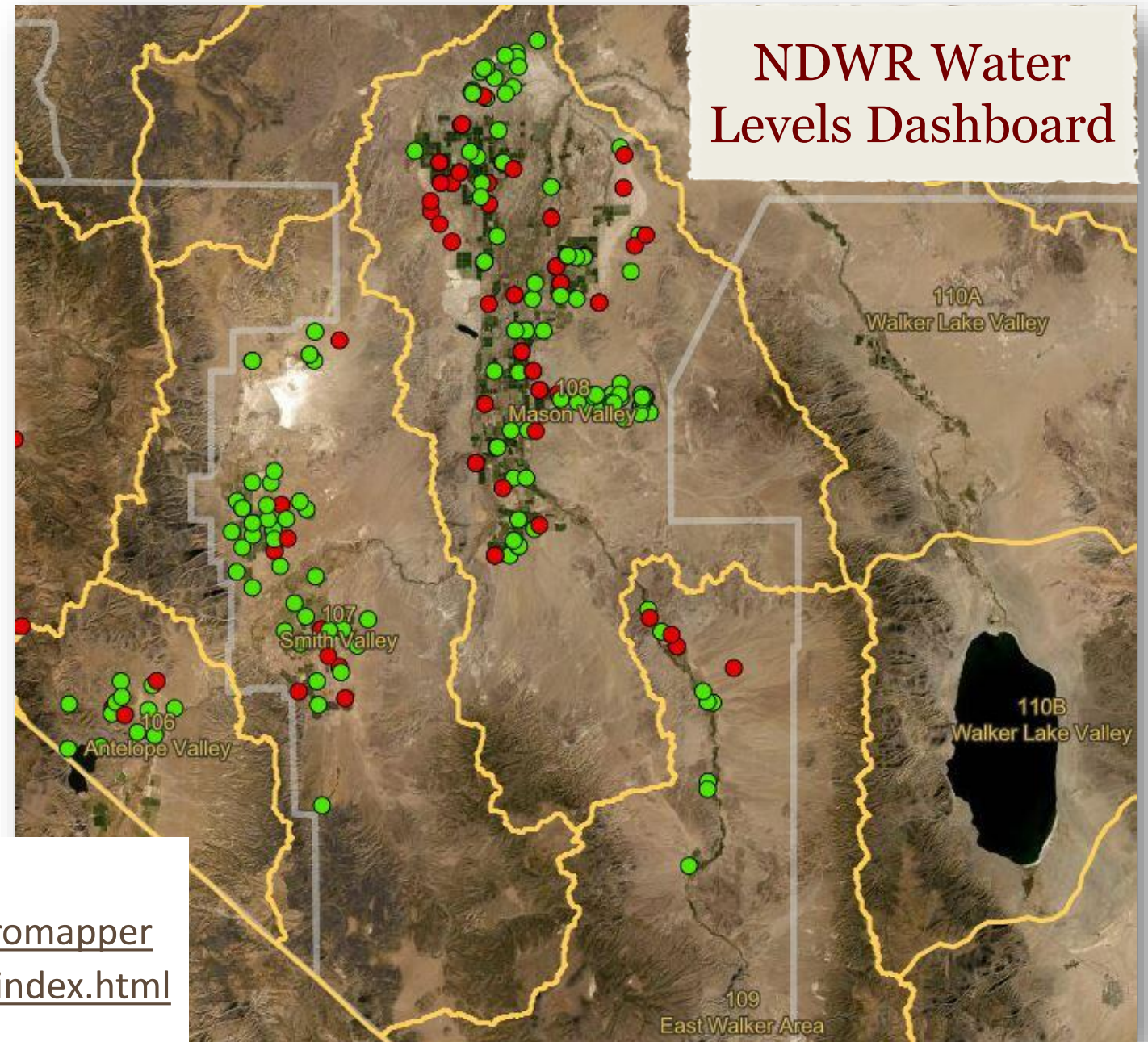
## ONLINE RESOURCES

[Water.nv.gov](http://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](http://Nevada.usgs.gov) >>

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





# Questions?



## Contact

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**Division of Water Resources**

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Phone: 775-684-2800

[water.nv.gov](http://water.nv.gov)