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*Deputy  
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**Micheline  
Fairbank**  
*Deputy  
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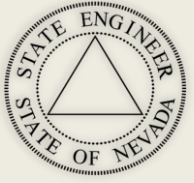
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*Director*



# Nevada's Water Use Estimates and Data Sharing Efforts

Adam Sullivan, P.E.

Water Information Management Systems (WIMS) and  
USGS National Water Use Data Collaboration Workshop  
September 16-18, 2019

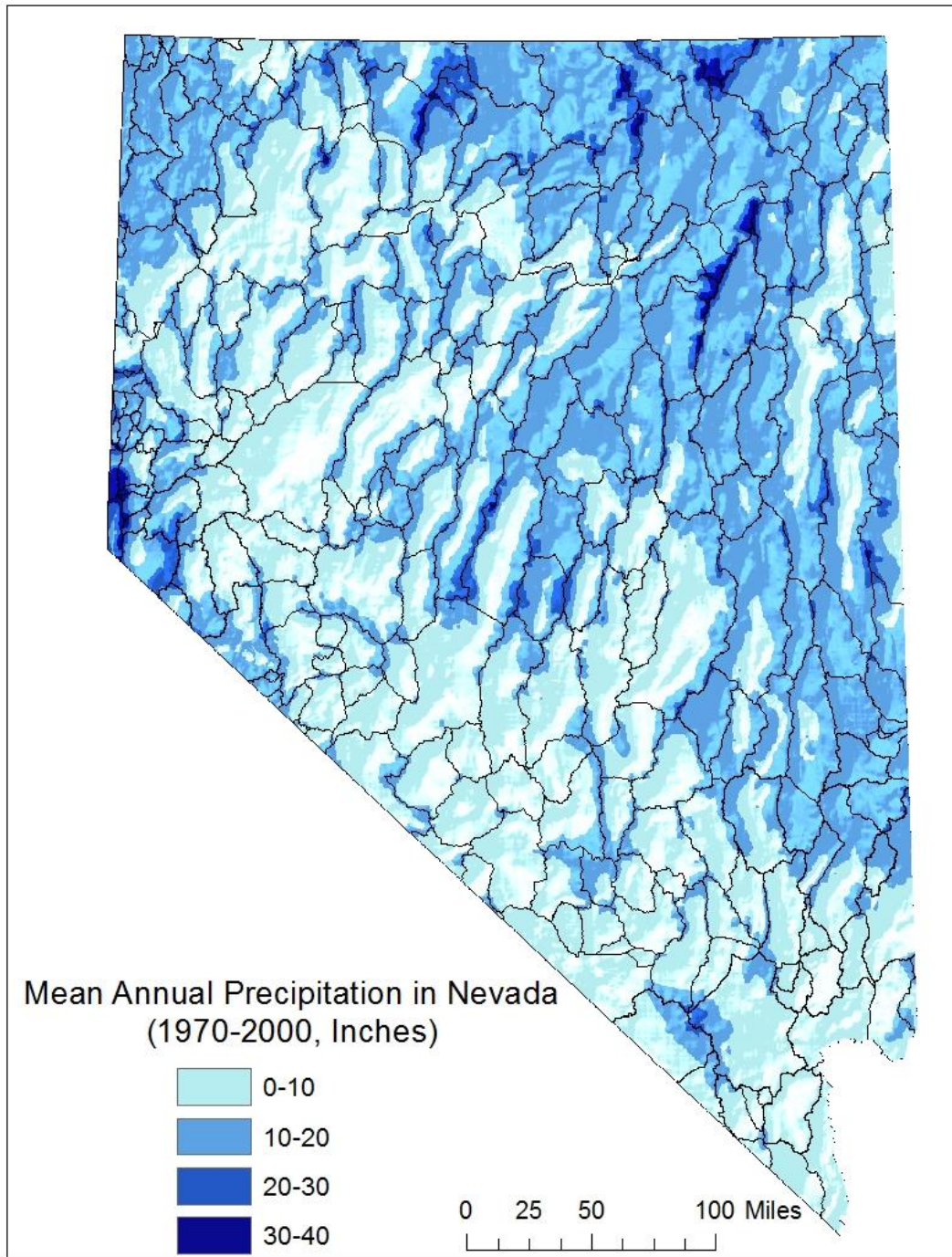


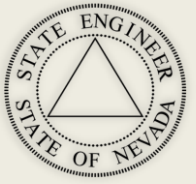
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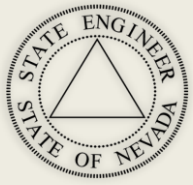
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*Nevada's groundwater  
is divided into 256  
hydrographic basins*

*Groundwater is  
administered on a  
perennial yield basis*





# PRIMARY RIVER SYSTEMS

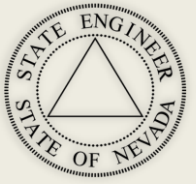
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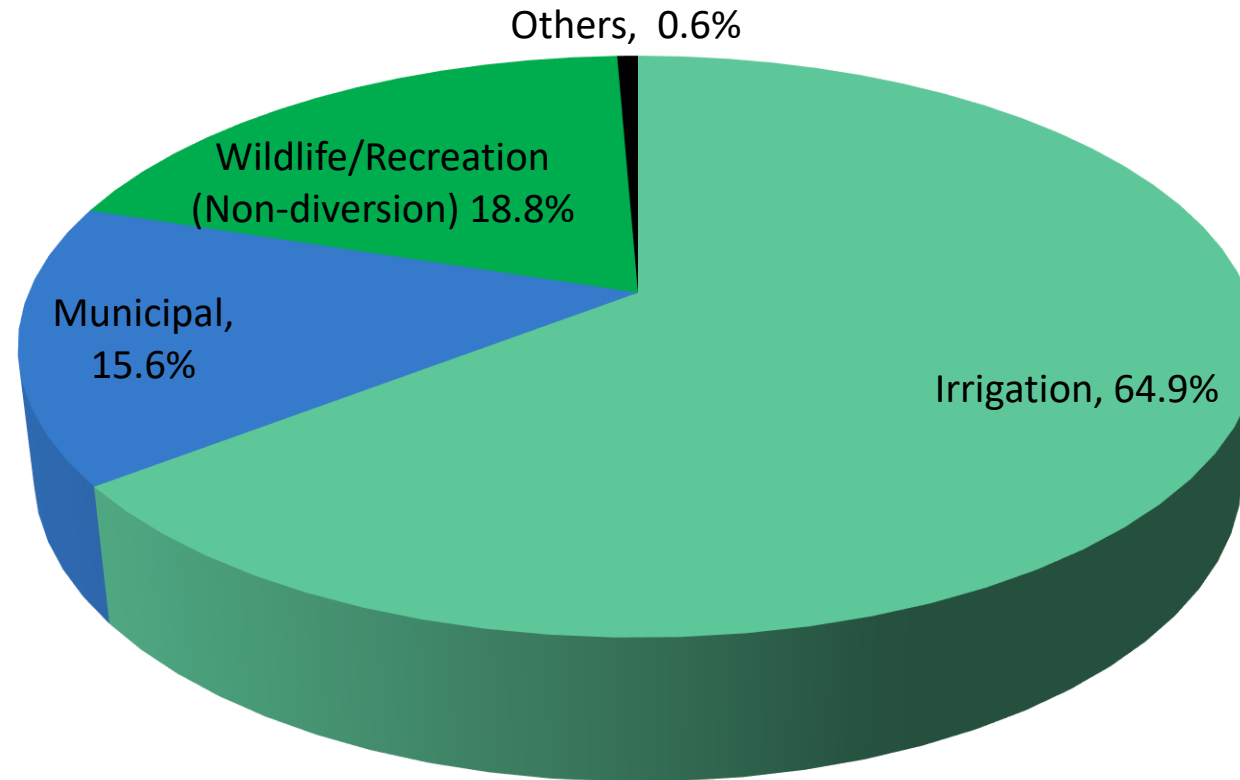
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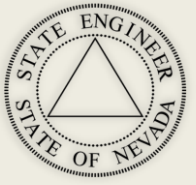
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# Statewide Surface Water Use



All of the major river systems are fully adjudicated and distributed by decree. Mean annual surface water usage is about 4- to 5-million acre-feet.



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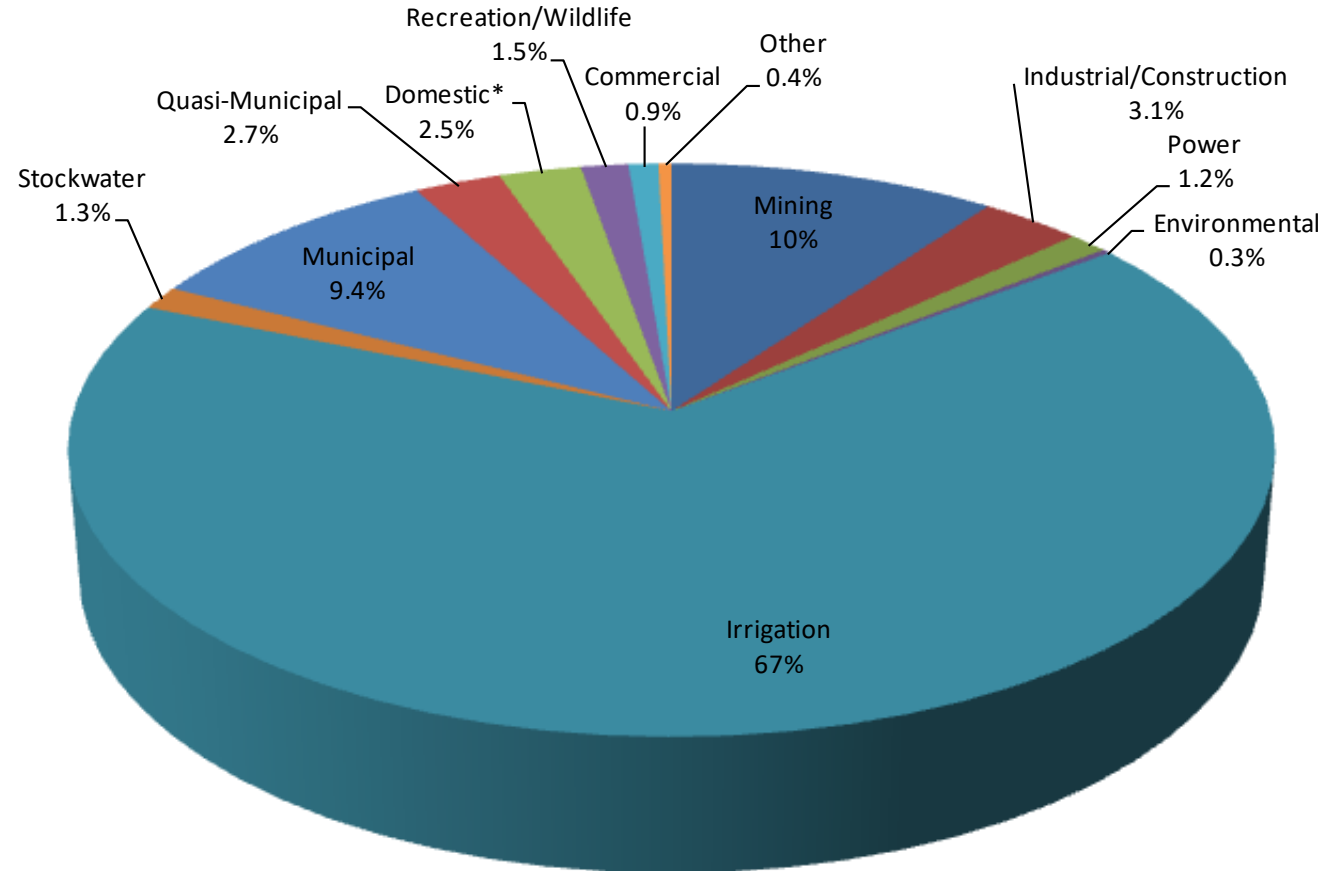
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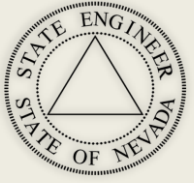
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# Statewide Groundwater Use



Statewide, we are using about 1.5 million acre-feet of the 2.0 million acre-feet total supply.



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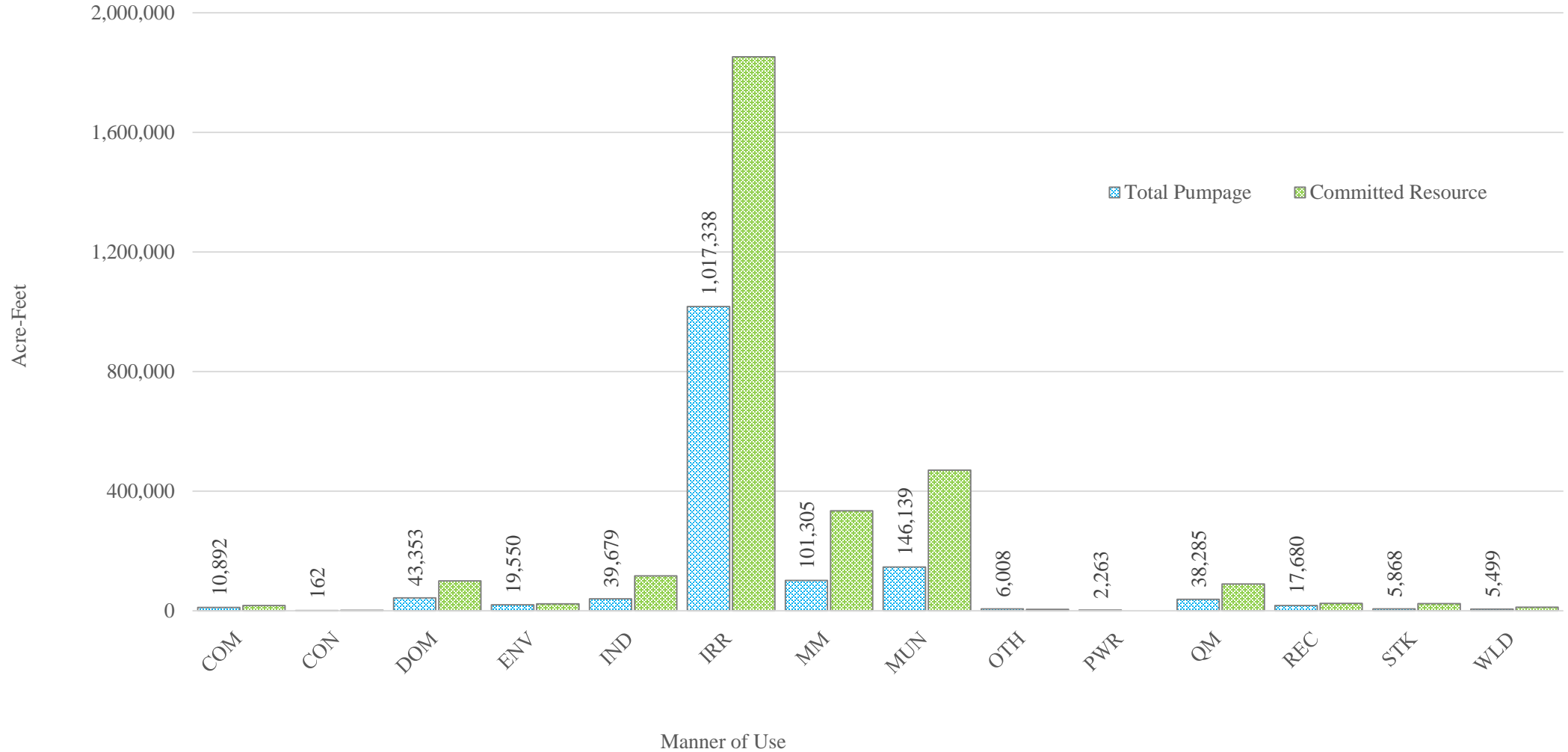
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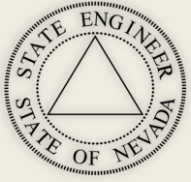
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# Actual pumpage is about half of the committed groundwater





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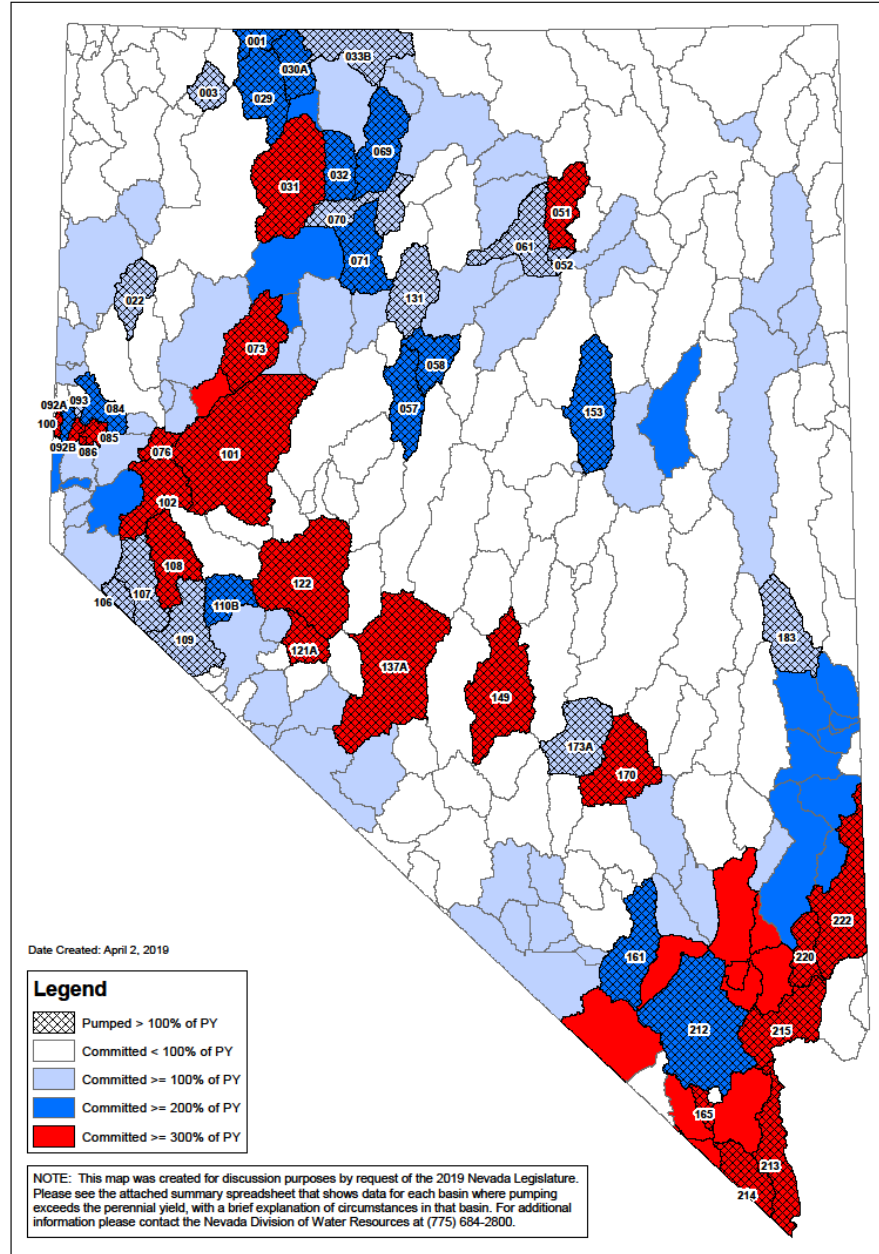
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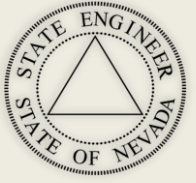


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## Comparison among Groundwater Commitments, Pumpage, and Perennial Yield in Nevada Basins







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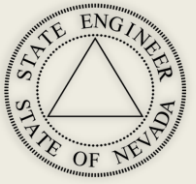
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# Water use data collection

- *Historically, inventories were basin-specific, using variable methods, on an as-needed local basis.*
- *Thorough inventories are now expected and necessary*
  - *Managing basin-scale conflict*
    - *Meter Orders!*
  - *Documenting non-use for cancellation or forfeiture*
  - *Refine water budgets*
  - *Answer to the Legislature*



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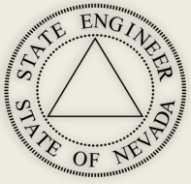
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# Recent Enhancements to Water Use Data Management

- *Dedicated staff to coordinate and standardize reporting, publish reports timely, make available to the public*
- *Emphasis on field work to validate data*
- *Development of a publicly accessible meters database*
- *Legislature created 3 new positions for a “Planning and Drought Resiliency” Section within NDWR*



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State of Nevada  
Department of Conservation & Natural Resources  
**Division of Water Resources**

User: wfereday Change Password Log

Search Reports Manage Customers Manage Sites Manage Meters Manage Users View Permits Manage Database

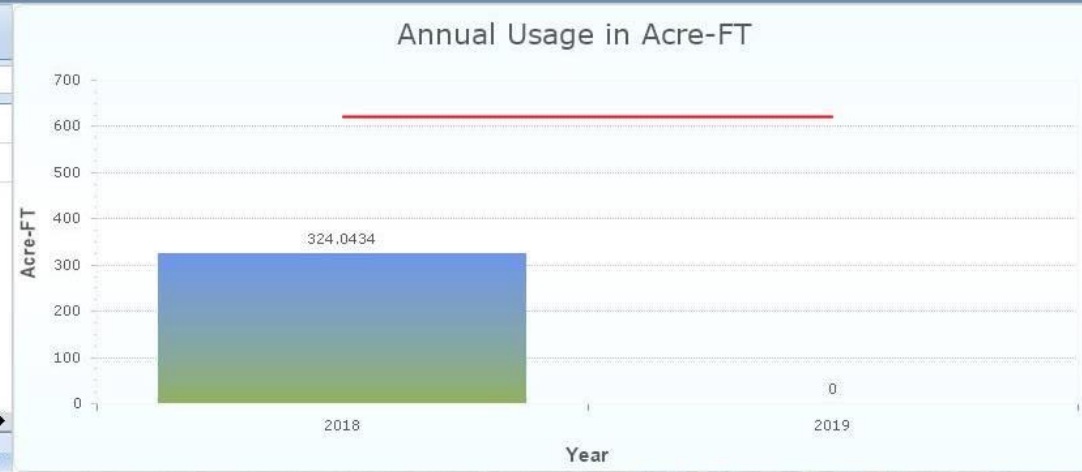
Readings For Meter ID: 5157

Date	Reading	Input Date	Input User	Reading Remarks
03/29/2018	0	04/04/2018	cjellema	Installation Reading.
07/01/2018	33,167,000	07/04/2018	nortoncritters	
10/01/2018	104,569,000	10/03/2018	nortoncritters	
12/01/2018	105,590,000	04/18/2019	wfereday	
01/15/2019	105,590,000	01/15/2019	nortoncritters	
04/01/2019	105,590,000	04/12/2019	wfereday	

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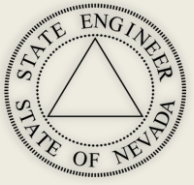
Annual Meter Usage Data

Year	Acre-FT / Year	Max Pumpage	Overage	Overridden	Method	Crop Type
2018	324.043	620.0000		<input type="checkbox"/>		
2019	0.000	620.0000		<input type="checkbox"/>		



Page size: 50

2 items in 1 pages



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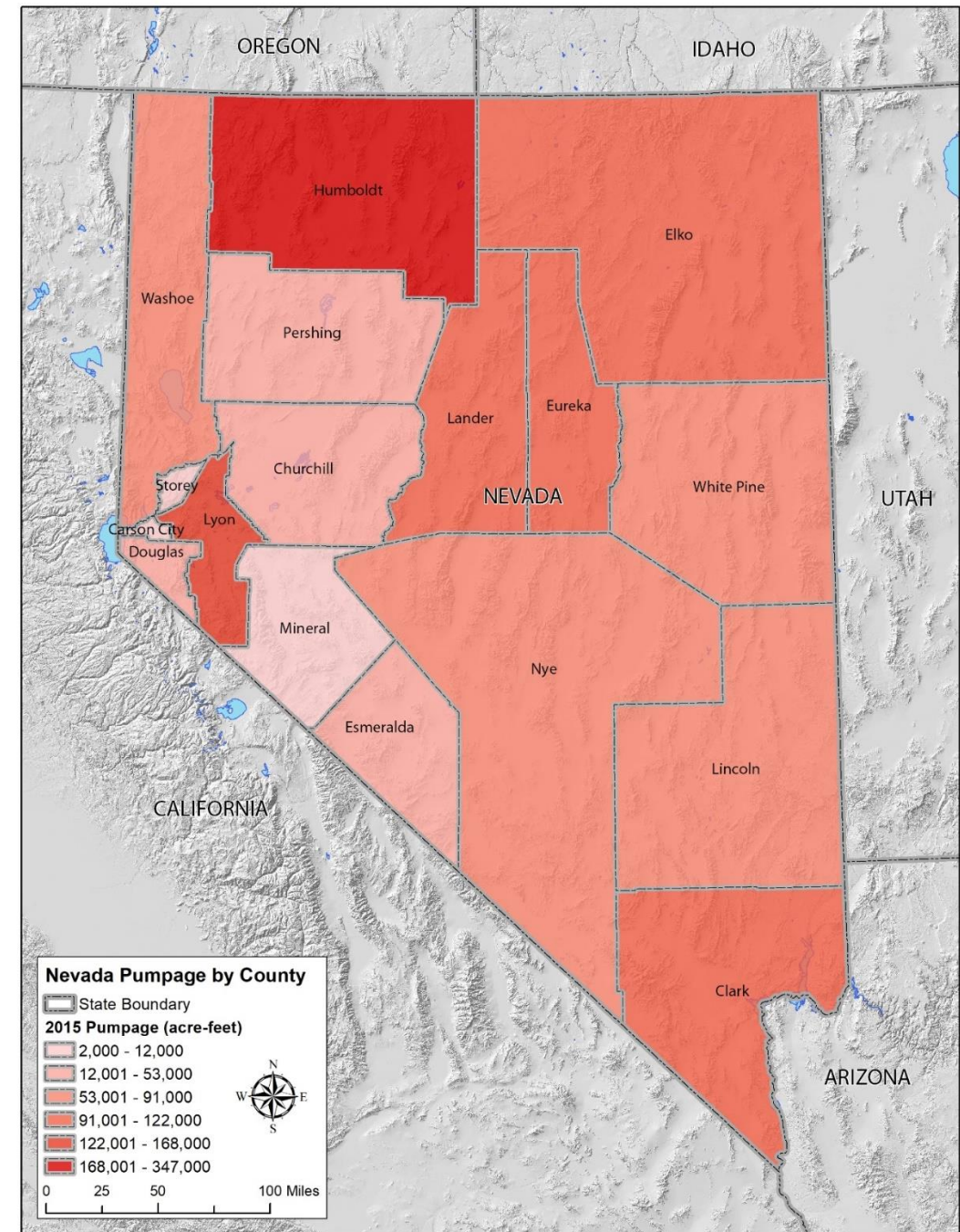
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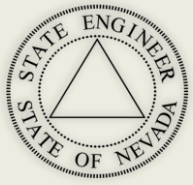
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- **Statewide Groundwater Pumpage Inventories**
  - By basin, county and manner of use
  - Published each year that we have NAIP imagery
- **Desired Improvements**
  - Surface water
  - Consumptive use
  - Annual publication

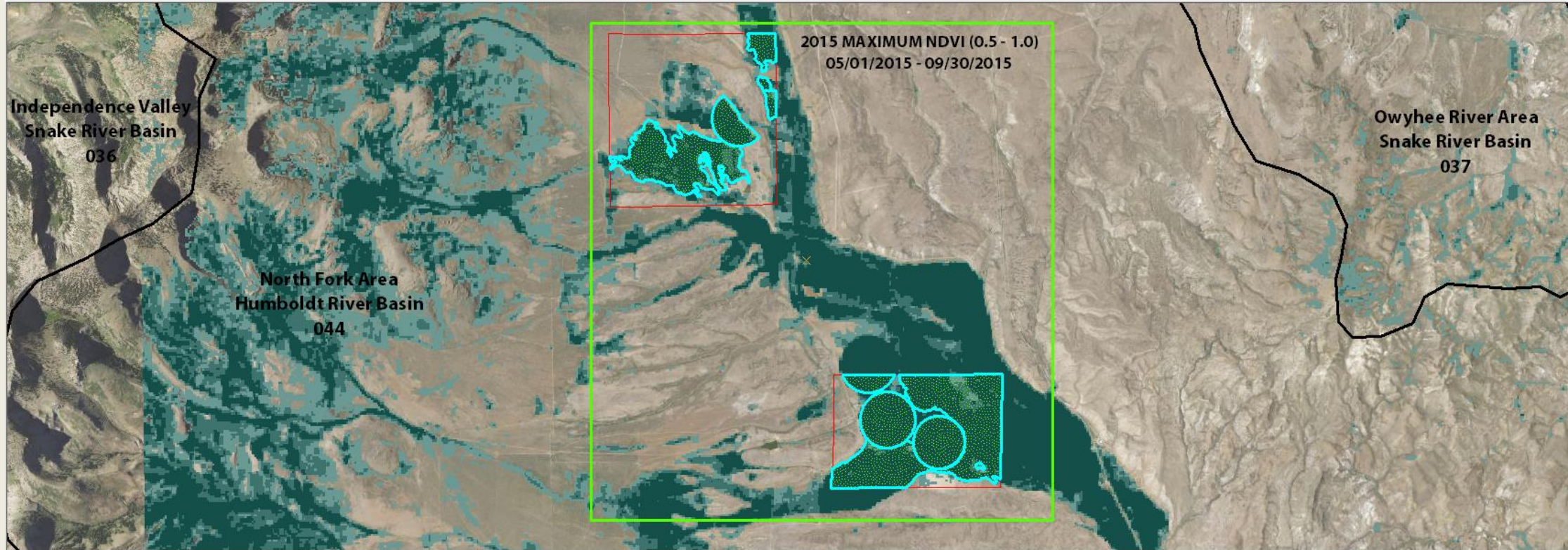




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Map navigation controls: Home, Refresh, Full Screen, Print, Copy, Paste, Close

Table

Table toolbar: Filter, Sort, Add Column, Remove Column, Refresh, Print, Copy, Paste, Close

IrrAcresPmpSpatJoin

App_Method	County	Region	Editor	Eff_Factor	NIWR	Acres	NIWR_Eff_Factor	NIWR_Eff_FactorxAcres_AF	Source	GW_PUMPAGE_FACTOR	GW_Pumpage	HYD_AREA	HYD_AREA_N
Pivot	Elko	Humboldt River	Other NDWR editor	Pivot Efficiency	1.7	67	2	134	Mix of underground and surface sources	0.75	100	044	North Fork Area
Pivot	Elko	Humboldt River	Other NDWR editor	Pivot Efficiency	2.2	109	2.588235	282	Mix of underground and surface sources	0.75	212	044	North Fork Area
Pivot	Elko	Humboldt River	Other NDWR editor	Pivot Efficiency	2.2	124	2.588235	321	Mix of underground and surface sources	0.75	241	044	North Fork Area
Flood	Elko	Humboldt River	Other NDWR editor	Flood Efficiency	2.2	488	3.666667	1789	Mix of underground and surface sources	0.75	1342	044	North Fork Area
Pivot	Elko	Humboldt River	Other NDWR editor	Pivot Efficiency	2.2	33	2.588235	85	Mix of underground and surface sources	0.75	64	044	North Fork Area
Flood	Elko	Humboldt River	Other NDWR editor	Flood Efficiency	2.2	288	3.666667	1056	Mix of underground and surface sources	0.75	216	044	North Fork Area
Flood	Elko	Humboldt River	Other NDWR editor	Flood Efficiency	2.2	43	3.666667	158	Mix of underground and surface sources	0.75	118	044	North Fork Area

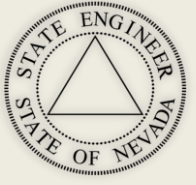
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(7 out of 652 Selected)

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# NDWR Use of Remote Sensing

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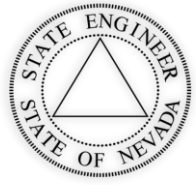
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- *Inventories: validating irrigation meters and estimating unmetered irrigation use*
- *Water rights: demonstrate beneficial use, or conversely, support cancellation or forfeiture*
  - *Rulings have withstood judicial review*
- *We do NOT use actual consumptive use for interbasin transfers or changes in manner of use*
- *Keeping up with the scientists: Open ET will provide powerful data to support future management needs*



Questions?

